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# The Sixth National Conference on Rural Public Transportation Final Report

November 1983





# The Sixth National Conference on Rural Public Transportation

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Final Report  
November 1983

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# 1

## EXECUTIVE SUMMARY

The Sixth National Conference and Workshops on Rural Public Transportation was a tremendous success from many points of view. It attracted more participants than any of the five previous conferences, it attracted more first-time attendees than any of the previous conferences, it had more high-level officials attending and participating than any of the previous conferences, and it generated a great deal of enthusiasm and participation by those attending. Nearly all aspects of the conference were highly rated by the participants.

The theme of the conference was "Facing the Challenge of Productivity." Most of the sessions and workshops directly addressed these issues. The other significant topic of interest was the transition of the administration of the Section 18 Nonurbanized Area Formula Grant Program from the Federal Highway Administration (the sponsor of the conference and workshops) to the Urban Mass Transportation Administration. This transition was scheduled to occur six weeks after the conference and had the potential for directly affecting the planning, funding, operating and reporting procedures of many of the participants. UMTA's viewpoints on productivity were of keen interest.

## GENERAL INFORMATION

The Sixth National Conference and Workshops on Rural Public Transportation was held August 14-18, 1983 at the Gorham Campus of the University of Southern

Maine in Gorham, Maine. The conference and workshops were convened by the Federal Highway Administration, and co-sponsored by eight other organizations and agencies. Two hundred and forty-nine persons officially registered, including 20 representatives of companies manufacturing vehicles and other equipment. The conference included six general sessions and related workshops. The general sessions were

- opening and conference overview,
- legislation, national organization, and the Federal perspective,
- productivity and performance,
- revenue enhancement and sources,
- alternatives for rural public transportation service delivery, and
- rural America and public transportation.

The workshops were

- state DOT perspectives on rural transit performance,
- alternatives for rural public transportation,
- computers and management information systems,
- revenue enhancement and sources,
- working with local elected officials,
- vehicles,
- financial management,
- personnel management, and
- productivity, efficiency and effectiveness evaluation.

In addition to these sessions and workshops, the program also included

- a joint meeting of the Transportation Research Board's Committee on Rural Public Transportation and AASHTO's Rural Transportation Task Force,
- a roundtable discussion for the operators of rural public transportation,
- an open forum in a town meeting format for all participants to raise issues and address unanswered questions, and
- special tours.

The speakers at the conference included one of Maine's representatives to the U.S. Congress, the Executive Director of the Urban Mass Transportation Administration, the Associate Administrator for Planning and Policy Development of the Federal Highway Administration, Maine's Commissioner of Transportation, and many other government officials, operators of rural transportation systems, university personnel, and private entrepreneurs.

The conference attracted a wide range of individuals. Forty-seven of the participants were from State Departments of Transportation representing a total of 34 states. There were 104 local operators from 29 states throughout the country. The 23 Federal employees at the conference represented FHWA, UMTA (headquarters and six regions), TSC, the U.S. Department of Agriculture, and the U.S. Congress. There were also 13 participants from universities, 20 representatives of vendors, 19 consultants, six persons from regional planning organizations, two persons representing cities, and one from a school district. Special interest groups were also represented, including the American Public Transit Association, the Transportation Research Board, Rural America, American Bus Association, International Taxicab Association, and American Association of State Highway and Transportation Officials. Conference participants came from places throughout the country including Puerto Rico, Guam, and the Virgin Islands, and, while a large number were from the east coast, the west and mid-west were also well represented.

#### TECHNICAL HIGHLIGHTS

The depth of shared experiences was one of the greatest benefits of the conference. Even the most skilled and knowledgeable practitioners gained from the interactions. Highlights of specific subject areas are briefly mentioned below.

##### Productivity and Performance

The uses and misuses of performance measures were key discussion topics for several days. Whether or not the performances of different rural transportation systems should be compared to each other and whether or not the distribution of funds should be based on performance statistics were intensely debated. The different uses of performance indicators by states and local systems, applying performance indicators to personnel issues, and "typical" ranges for

specific performance indicators were discussed. Several system operators complained about being taken to task for performance indicators with low values while being required by boards of directors to provide specialized but low-productivity services. The point was made that a good system of indicators was as relevant to evaluating the policies of a board of directors as to evaluating the day-to-day operational decisions of the transit system's manager. Participants were challenged to describe circumstances under which performance indicators should not be used at all for a particular transit system, but no one was able to describe such circumstances.

State officials need the information generated by performance indicators in order to make the case for maintaining or increasing rural transit subsidies. Michigan has a program for collecting and assessing performance indicators for all systems in the state. To date the information has only been used by local properties to evaluate how well they are doing relative to themselves over time.

Iowa has a system for gathering and using performance data that was said to be among the best organized in the nation. All 33 of the state's regional transit systems use the Uniform Data Management System for all informational purposes. It is computer-based using the Section 15 reporting format, expandable for non-DOT agencies, low in paper-handling, and can be used for standard accounting and reporting. Information on this system is available through the Transportation Accounting Consortium (referenced in Appendix E).

Pennsylvania also has a system of indicators for use by local properties. Their system is intended as a self-help tool for local operators. However, it is also used by the state to distribute transit grants and reward systems with high performance.

### Personnel Productivity

One of the major ways to improve the productivity of a system is to improve the performance of personnel. The key to managing personnel is motivation -- almost any individual has skills to be developed but motivation takes thought and effort on the part of management. Staff productivity can be increased through goal-oriented evaluation in which goals for personnel are specified, assigned a weight factor and used in written evaluations to motivate workers. Some properties use these evaluations as criteria for raises.

## Revised Section 18 Guidelines

UMTA was scheduled to take over the day-to-day management of the Section 18 program on October 1, 1983. A revised draft version of UMTA's forthcoming guidance for the management of the Section 18 program was released at the conference. A variety of very detailed issues received considerable attention and discussion, including:

- arrangements for receiving funds from UMTA through the Letter of Credit agreement (the letter of credit will cover the full amount apportioned to the state but the state can only draw down funds for projects in Category A),
- how to meet the requirements for at least minimal participation by Disadvantaged Business Enterprises in contracting, especially with regard to the purchases of vehicles (the manufacturer is responsible to see that the provisions are met) and to the responsibility for the certification, particularly when one manufacturer makes the engine, another the chassis, another the body, etc. (UMTA will provide further clarification on such situations),
- the distinction between contract operations and charter operations (UMTA will provide further guidance),
- staffing for the program (UMTA will delegate many administrative responsibilities to the states),
- procedures for waiving the charter bus rules,
- conditions under which local projects can provide school bus services, such as the isolation of equipment and services used in school services for accounting and funding purposes,
- reporting requirements for the program,
- technical assistance, and
- in-kind and other matching funds.

## Service Delivery Alternatives

Interest was expressed in two major issues:

1. The use of school buses to provide other services in rural areas -- serving other agency clients and the general public on school routes -- has been proven successful. In some cases it has been appropriate to use school buses as feeders to other modes of transportation.
2. The use of private operators to provide demand responsive service under contract to transit agencies or human service agencies.



## Computers and Management Information Systems

Computers are being used by rural transit systems for everything from projecting ridership and allocating costs to keeping personnel files and tracking vehicle requirements. Computers are being used on the state level to gather information and feed it back to local operators to allow them to compare their system's productivity with itself over time and with other systems.

## Financial Management

Good accounting and financial management should allow managers to make decisions which improve productivity. A great deal of the discussion on financial management dealt with determining costs and either setting fares for individuals or allocating costs to agencies. The consensus of opinion seemed to be that the easiest, fairest and most cost-effective fare strategy would be setting fares on a per trip basis with some way to account for large distance variations (e.g., fares based on zones or with distance surcharges).

## Working with Local Elected Officials

Transit operators should be cognizant of the fact that transit is a relatively insignificant issue to many local decision-makers and deal with these decision-makers in this light. It is important to gain the support of the community and the support of local officials will follow. Keep local officials informed, be professional, and go to them with solutions as well as problems.

## Vehicles

Much of the discussion on vehicles centered on procedures for rehabilitating vehicles, which was claimed to lead to substantial initial cost savings over new purchases. In particular, the replacement of engines and drive trains was said to make vehicles operable for another 3-4 years.

Many states and local properties are rethinking their practices with regard to accessibility features on vans due to:



- unreliability of lifts,
- inadequacy of wheelchair tiedowns, and
- inadequacy of interior access for ambulatory or semi-ambulatory individuals once a van has been retrofitted with a lift.

The North Carolina Department of Transportation discussed new design standards.

#### PARTICIPANT EVALUATIONS

The overall verbal and written responses of the conference participants were positive. A summary of the written responses is provided in Appendix D. Participants found the sessions useful and informative. They thought the theme of the conference was timely and found the conference comprehensive and well organized (although some participants commented that the sessions should have more often started on-time). There was more interest in topics directly related to measuring and improving productivity and in exploring the new Section 18 regulation and less interest in operational and management issues. Recommendations were made to hold the conference yearly and to continue focusing on one theme (annual conferences could address major current issues).

While participation at the conference was high relative to other years, it could have been higher and even more diversified if individuals had more advance notice. Also more attention should be paid to vendor participation, in both conference planning and the conference itself (perhaps, for example, including a presentation by each vendor).

#### SUGGESTED IMPROVEMENTS FOR FUTURE CONFERENCES

Future conferences could:

1. Provide much more time in advance of the conference for logistical and technical support.
2. Require written statements from all speakers.
3. Provide more detailed information on lodging and accommodations.
4. Encourage greater participation by vendors.
5. Reimburse members of the conference planning committee for attendance at pre-conference planning meetings.



# 2

## HIGHLIGHTS OF THE GENERAL SESSIONS AND WORKSHOPS

This chapter describes the key issues discussed at each of the general sessions and workshops. Each major session or workshop is assigned a major section of this chapter. The key individuals and their affiliations are identified for each major topic. Sessions are discussed in the same sequence as they appeared on the conference schedule.

To the extent possible, the summaries of the remarks of each speaker are phrased in the words of the speaker. Their remarks have not been edited to any consistent policy viewpoint or body of existing knowledge. The summaries may thus refer to opinions or information unique to each speaker, and in fact, sometimes express viewpoints that are not widely shared. Since most speakers did not provide written copies of their comments, the materials presented here rely on the reports of session reporters and on tape recordings of selected sessions. The reporters of the sessions did their best to accurately report the facts and views expressed by the speakers, so questions concerning the content of the materials presented should be addressed directly to the speakers.



Session Coordinator: Robert Goble, Carter-Goble Associates, Columbia, South Carolina

Session Reporter: John Kent, Carter-Goble Associates, Columbia, South Carolina

Session Speakers: Loretta Sharpe, Regional Transportation Program, Incorporated, Portland, Maine  
Rep. John McKernan, U.S. Congress, 1st Congressional District in Maine  
Donald Tudor, Transportation Division, Office of the Governor, South Carolina  
Jon E. Burkhardt, Ecosometrics, Incorporated, Bethesda, Maryland  
James Miller, Pennsylvania State University, State College, Pennsylvania  
Patricia Saindon, Montana Department of Transportation, Helena, Montana  
Peter Schauer, Peter Schauer Associates, Boonville, Missouri

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Robert Goble: Opening Remarks

Mr. Goble welcomed the participants to the Sixth National Conference on Rural Public Transportation, and thanked the Federal Highway Administration which funded the conference. He noted that, at the fifth national conference in Arcata, many people wondered if there would ever be a sixth conference, given the nation's economy at the time and a new administration in Washington that was threatening to stop Federal transit operating assistance. However, things have turned around somewhat for rural transit. In the process, an important lesson has been learned -- that public finances for transportation are not endless or easy to come by. Even though Federal operating assistance may be here to stay and many states are increasing their support, most small systems realize that they must find ways to offer more services with less resources. As a result of this realization, the conference planning committee of 16 persons unanimously supported a focus for the conference on cost efficiency, effectiveness and productivity.

The idea that rural systems should find ways to produce more service for every dollar has become more widespread the last few years, on many different levels. Several states (Pennsylvania, Michigan, California, Delaware, South Carolina and New York) have undertaken state level projects to either provide a self-help program and/or develop state policies or laws that encourage the pursuit of improved cost-efficiency or production. The general sessions and workshops at the conference relate to the overall theme "productivity".

Representative John R. McKernan, Jr.

Loretta Sharpe introduced Representative John R. McKernan, the keynote speaker for the conference.

Representative McKernan welcomed the participants to Maine, a predominately rural state with a growing elderly population. He noted that public transportation is a vital connecting link between people and services in the U.S. However, transportation services are now being lost in many rural and small urban areas. In the 1970s, 11 percent of small urban areas had transportation services; yet now only about seven percent of such areas have transportation service. The conference theme, making scarce dollars go further through efficiency and productivity, is timely and important.

There is an understanding in Congress that more time has to be spent on developing programs for rural transportation. Maine cannot afford to cut Section 18 funds since proper health care and access to other services and people in the community requires that rural transportation continue. However, better use of the tax dollar is vital.

Rural transportation programs have had to increase fares from 16 percent to 100 percent already. Now, there is a need to continue to provide service more efficiently and productively; to combine, consolidate, or coordinate resources to serve rural needs.

Session Previews

Donald Tudor: "Alternatives for Rural Public Transportation"

The "Alternatives for Rural Public Transportation" general session focuses on one case study of a small urban system which needs considerable changes.

Following a presentation of the case study, various people from different backgrounds who had studied the system present their recommendations for change.

Jon Burkhardt: "Performance and Productivity"

The session on "Performance and Productivity" deals with productivity in terms of performance measures and why they are used. In spite of a variety of opinions on the use of evaluations and comparisons among systems, they can be useful. The key is in what should be measured, how, and ensuring that like items are being measured. Once uniformity is established, selected peer group comparison can be helpful. Some states have been successful in using performance measures and some have not. During the session, both sides are presented, providing participants an idea of what constitutes good performance.

James Miller: "Productivity, Efficiency and Effectiveness Evaluation"

The workshop on "Productivity, Efficiency and Effectiveness Evaluation" is based on the Pennsylvania Performance Evaluation Manual. Often consultants and college professors are the ones advocating performance evaluations with the system managers not caring for them. This may be due to the lack of interest on the part of system managers, may be based on fear of comparison, or may be due to the perception that there is a need to collect a great deal of data. The purpose of this session is to show managers that the process is actually useful. The Pennsylvania approach, as well as others, is described. By understanding the mechanics, system managers may be persuaded that evaluation is a worthwhile process.

Patricia Saindon: "Revenue Enhancement and Sources"

The workshop, on "Revenue Enhancement and Sources," looks at case studies of systems and requires participants to solve actual revenue problems. In Montana, counting all vehicles purchased since 1975, there are still only enough vehicles for one every 1,400 square miles. The population of Boston is about the same for all of Montana. The result is that Montana has few people in sparsely settled areas, and needs more money and vehicles.

Peter Schauer

The focus of the conference, productivity, has come at a good time. This year is the 10th anniversary of the energy crunch -- the event that was going to change the world. While not much happened as its result -- the energy crunch may not have affected ridership to any great extent -- the fact that all costs have gone up considerably (a van cost \$3,600 back then, but it now costs \$12,000) has forced systems to look toward efficiency. The most important aspect of the conference is discovering:

- Which ideas concerning productivity are worth considering?
- Are these ideas transferrable?
- How can they be transferred?

Participants should ask all speakers not only what they did and how, but what they learned in that process.



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SESSION COORDINATORS: Douglas McKelvey, Federal Highway Administration, U.S. Department of Transportation  
Norman Paulhus, Office of the Secretary, U.S. Department of Transportation

SESSION REPORTER: Frank Garcia, Office of the Secretary, U.S. Department of Transportation

SESSION SPEAKERS: Richard Robertson, Associate Administration for Planning and Policy Development, Federal Highway Administration  
Raymond Sander, Executive Director, Urban Mass Transportation  
Lynn Sahaj, Section 18 Program Coordinator, Urban Mass Transportation Administration  
W. David Lee, Program Director, American Association of State Highway and Transportation Officials

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Richard Robertson

In most rural areas, transportation services started with the social service agencies -- frequently, social service agencies have led the way for highway and transportation planners. As an introduction into rural transit, problems, the 1972 National Transportation Needs Study was a good eye opener. As needs were summarized during the study, the greatest percentage of unmet need was in rural transit and, in fact, conditions were so bad that often it was not even possible to define the needs. A number of rural transit programs got their start when the Appalachian Regional Commission began to fund them in 1973. Later, the Section 147 demonstration program was instituted. The only complaint with the Section 147 program was that it was a demonstration program. At that point, the need had already been established. Now the Section 18 program is in place -- and the only regret is that it took so long to get here.

Looking back at what some of the problems were, and will probably continue to be, one can point to:

1. State Corporation Commissions and Public Utilities Commissions -- it was and is often difficult to change rules and regulations -- a great deal of flexibility is needed in a rural transportation system to make it more efficient and produce more for less.
2. Federal laws and regulations often are not helpful and need to be modified.

In the area of operational subsidies, there may be room for some compromise in the Administration. Perhaps the compromise could come in the definition of operating subsidy. As an example, in the last two and half years a great deal of attention has focussed on the labor issue -- the disincentive for local officials to be tough negotiators over union contracts when the Federal government is subsidizing labor costs. If this is so, then perhaps the Federal government could continue operating subsidies for fuel and maybe even spare parts. This may or may not be a workable solution, but is at least worth exploring.

UMTA is assuring those involved that they will keep all the good things that FHWA did while it was running the program. And, if one can identify all the bad things FHWA did, maybe UMTA will discontinue them. It is important to know that the transfer of the Section 18 program from FHWA to UMTA was not a question of getting rid of something FHWA didn't want. There were persons in FHWA who wanted to keep the Section 18 program in FHWA. It is to UMTA's credit that they wanted to administer this program.

In the true spirit of cooperation, FHWA has agreed to continue to administer the program in any state where UMTA requests it. Puerto Rico is the only state where such a request has been made to date. On an informal basis, FHWA will continue to provide help to UMTA. The most important concern is that the transition does not hurt the program. FHWA has not announced a specific rural transportation role for the future, but FHWA will remain solidly committed to the Section 18 program.

Raymond Sander

Rural transit operators possess a remarkable ability to reconceptualize their services; to change or innovate with services in anticipation of changes in the external environment. Rural operators have the ability to innovate and willingness to change. They are not tied to old mindsets of what transportation used to be or how it has always been provided.

The administrators of UMTA and FHWA decided that 1983 was an appropriate time for the UMTA to assume responsibility for the Section 18 program for a number of reasons. The STAA Act of 1982 prompted the decision. The role of governors and states in resource allocation for capital, operating, and planning programs for areas of population under 200,000 was greatly enhanced. Section 21 of that act consolidates the funding source for both Section 9 and Section 18 program activities and includes a transferability provision for the governors. The overall environment was conducive to having grantees come to one place to do business.

The assumption of Section 18 is not first involvement of UMTA in rural areas. Section 16(b)(2), Section 8 and Section 3 are all programs that have operated in rural areas. Section 18 is an important program to UMTA, and UMTA hopes to have the opportunity to demonstrate this to local systems.

UMTA has heard a number of concerns which should be addressed including:

1. the speed with which payment will be made,
2. the need for uncomplicated procedures,
3. the importance of UMTA staff being available to help, and
4. the continued role of states in the programs.

UMTA's actions to address these concerns included the establishment of a working group within UMTA, visits by Regional Office personnel to states, visits by headquarters personnel to the field, review of UMTA technical assistance programs to find out what is relevant for rural operators, a financial review with several states to assess financial transfer requirements, discussion with the Department of Labor with regard to 13(c) warranty provisions, creation of state programs division within UMTA to administer the Section 18, Section 16(b)(2) and Section 8 programs -- so there is an organizational entity within UMTA responsible for state programs. UMTA technical assistance programs are able to help rural operators.

Lynn Sahaj

On June 29, 1983, UMTA had an advisory meeting of operators, states and representatives from interest groups. On July 15, draft guidelines were mailed out to every state, the advisory committee and other interested parties.

Comments were received from over 30 states. They were read, considered, and, where possible, they were incorporated into the new draft guidelines. Guidelines were distributed at the conference for review.

Comments were generally favorable on the overall approach taken. Reviewers seemed pleased with three programming categories that are proposed. Comments also asked for clarification or elaboration in a number of areas which were addressed in the most recent draft, including:

1. Elaboration on the options for including in one application requests for funds from Section 18 and Section 16(b)(2). Several states have indicated that they plan to pursue that option in FY84.
2. Simplification of various required assurances and justifications. Some of these were eliminated, particularly the opinion of counsel which some reviews saw as difficult for small systems to comply with.
3. Elaboration on the new disadvantaged business enterprise regulation issued on July 21, 1983.
4. Elaboration on the Title VI and EEO requirements. In these areas there will be some change from FHWA requirements since the UMTA civil rights program is run somewhat differently.
5. Clarification on the time period for availability of Section 18 funds before the funds lapse. Several states asked if UMTA had not made a typographical error in specifying that FY82 carry-over funds lapse in two years rather than three. This was not a misprint. The intent of Congress was to change the lapse provision for Section 18 from the year apportioned plus three years to one year plus two. That change will also apply to unobligated carry-over funds and will apply to FY82 funds. However, the transfer provision permitting the transfer Section 9 to Section 18 funds and vice versa is also in effect retroactively. Some states which may run into difficulty with lapsing funds might be able to transfer funds to urbanized areas.

Copies of the 16(b)(2) draft final guidance is available at the conference. UMTA took a good look at the Section 16(b)(2) provisions and attempted to make many of the requirements the same for Section 18 and Section 16(b)(2) so that state and local managers could be dealing with one uniform set of requirements. UMTA's goal in the next few years is to develop one circular covering both programs.

In the draft Section 18 guidance, UMTA tried to strike a balance between making them general and providing some level of detail. As transition takes place, it is certain that more questions will arise and need to be answered. But the transition is moving well and the major problems so far have been solved.

When the President signs the appropriation bill, it will include approximately \$70 million for Section 18 in FY84. Calculations have been made as to how much each state will get of the \$70 million. Those funds will be available for application immediately on October 1, 1983.

W. David Lee

An observation from outside the Federal government is that those responsible for rural transit in the Federal level have done a marvelous job. A number of positive achievements have occurred in rural transportation since the last conference in Arcata in the summer of 1981. At that session of Congress, the Federal budget seemed to be dominating most of the actions and driving most of what was done. After that conference, there was a second round of budget cuts suffered by most of the Federal domestic programs. The target for that round was a 12 percent reduction. The Section 18 program was being funded at a level of \$72.5 million up until that point. When the program went through the second round of budget cuts, it was reduced to \$68.5 million. It is important to understand that the rural program had a much lower reduction, on a percentage basis, than did the urban programs. Given the driving forces of that time, persons interested in rural transportation can take pride in the results of their efforts.

In 1982, the administration came out with their initial budget recommendation which had a recommendation of zero funding for the Section 18 program. The final appropriation was \$68.5 million. While other programs were compromised somewhere between the House and the Senate, the Section 18 program was funded at the full level recommended by the Senate. The lame duck session at the end of 1982 created the Surface Transportation Assistance Act. Rural public transportation was identified as one of the programs for funding out of the additional gas tax, amounting to about \$20-22 million in capital funds for the Section 18 program.

Also, significantly, in the Surface Transportation Assistance Act, there was no limitation on operating assistance on the Section 18 program while restrictions were applied to the urbanized area programs. Section 18 also attained a somewhat stable funding mechanism that is now tied to a percentage of the entire UMTA formula grant program.

The original budget recommendation for this year was about \$58 million with a limitation of \$18 million for operating assistance. However, Congress has, in effect, taken the stand that operating assistance is a proper role for the Federal government and there is now \$70 million appropriated for the Section 18 program for Fiscal Year 1984 with no restrictions on operating assistance. Given those events, the mood should be pretty optimistic for this Conference.

Following are some pieces of information as part of an AASHTO annual survey of states on rural public transportation:

- This year about 900 rural transportation systems nationwide will receive Section 18 funding.
- This includes 1,400 grants (capital and operation).
- Grantees include
  - 219 county governments,
  - 247 city systems,
  - 97 public transit systems,
  - 161 private non profit organizations,
  - 28 taxicab companies, and
  - 41 intercity bus companies.

A few comments should be made with respect to the transition of Section 18 from FHWA to UMTA. When the decision was announced, there was some resistance to the move -- people were asking why the program should be moved when it was running smoothly. But over time most people began accepting it. In general, comments from states indicate that they are receptive to the approaches that are being taken -- and they feel that UMTA has been receptive to suggestions for making improvements in the program.

A major concern was that the program continue to run smoothly. Transition should not have negative impact on recipients.

With respect to the impact of intercity bus deregulation, AASHTO has been doing some research and has found that approximately 900 rural communities either have lost service or face potential abandonment. It does not look like we are seeing much of a negative reaction thus far, although there is a potential for substantial negative impact.

The theme of this conference is a very good one. However, there are other challenges that are being faced. There is a need to do a better job of documenting what has been done by rural public transportation since this may not be communicated as well as it could be to Congress and members of the

administration. There is a need to identify what the real needs are -- there is a study to determine transportation needs called for in the Surface Transportation Assistance Act of 1982. As a part of this study there will be an attempt to identify what rural transportation needs are.

The Section 18 program is tied to the formula grant program at about three percent of those total funds. It is not certain that three percent is the appropriate level. Looking back at the funding levels authorized and appropriated for Section 18 over the years, by FY86, if we receive the full authorization levels provided in the new Surface Transportation Assistance Act, we'll be right back to the same authorization level that the 1978 act provided for the FY79 program.

### Questions and Discussion

Following the presentations of the speakers on legislation, national organization, and the Federal perspective, several questions were posed by members of the audience to the speakers. Some of the key questions are reproduced here. For the most part, the answers to these questions were provided by UMTA staff.

- Q. If an area has combined their grant application for Section 18 with Section 16(b)(2) will one report be required?
- A. UMTA would require reporting from the state on both programs. They can submit one report or two. A local recipient would have to report to their state in the manner prescribed by that state.
- Q. Can Section 18 funds be used for air transportation?
- A. No, air transportation is not part of the Surface Transportation Assistance Act of 1982. However, the CAB has an essential services program where there are some funds available to small communities when its deemed that their air transportation is an essential service.
- Q. Will UMTA staff be accessible for assistance to states and local communities?
- A. UMTA has lost people in the last few years and the chances of UMTA growing are very slim. However, within every region there has been one person identified as the Section 18 coordinator. Regional administrators see the importance of the program. Now that UMTA has responsibility, staff should be more aware and spend more time on program activities. Regional staff are making an effort to make themselves accessible.

- Q. Are draft guidelines concerning the administration of the Section 18 program available and when will the final guidelines be available?
- A. 200 copies are available at the conference. The final regulations will be out in two weeks [mid-September, 1983].
- Q. The Section 16(b)(2) and Section 18 programs have encouraged coordination on the local level. What have you done on the Federal level?
- A. UMTA took one step toward that in the circular administratively. The next step would be to combine them but that would be difficult since they have different statutory bases. UMTA is trying to coordinate them as much as possible, as simply as possible. Organizationally, the same people in UMTA who have the responsibility for Section 16(b)(2) now also have responsibility for Section 18 -- within the state programs office.



SESSION COORDINATOR: William Underwood, Pennsylvania Department of Transportation

SESSION REPORTER: Michael Noel, Cambria County Transit Authority, Cresson, Pennsylvania

SESSION SPEAKERS: Michael Peterson, Michigan Department of Transportation  
Frank Sherkow, Iowa Department of Transportation  
Joseph Daversa, Pennsylvania Department of Transportation  
Robert Goble, Carter-Goble Associates  
Michael Noel, Cambria Area Transit

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William Underwood: Opening Remarks

William Underwood opened the session by providing a perspective on what he, as a state official, must provide to the state legislators to justify governmental subsidies. In order to make a case for maintaining or increasing rural transit subsidies, the state decision makers must be presented with information upon which to base a decision such as cost per hour, cost per mile, efficiency measures, and load factors. In order to justify their use of funds, local systems must maintain levels of effectiveness and be able to prove their cost effectiveness through the use of performance indicators.

Michael Peterson: "Pros and Cons of Intergrating Performance Measurements and Incentives at the State Level"

Michigan has a program for collecting and assessing performance indicators for all systems with the state. Recently mandated by state law, the system was developed by a consultant and is still being implemented state-wide. While there was a great deal of initial resistance to the system by local operators, much of this resistance has dissipated and some operators have even come to like and rely on the information it produces.

Some of the basic requirements of a state program for performance evaluation such as Michigan's include 1) performance indicators must be based on standards that are the same for all systems, 2) local systems must be able to set local objectives to compare what they are doing with what they want to do, not state governments, 3) those systems that provide a high level of performance should receive rewards in increased funding.

Copies of the report which describes Michigan's performance indicator program were distributed at the conference.

Frank Sherkow: "The Iowa Experience"

Iowa's system for gathering and using performance data is perhaps the best organized in the nation. All 33 of Iowa's regional transit systems use the system called the Uniform Data Management System (UDMS). The system is used by all systems, for all informational purposes, is computer-based using the Section 15 reporting format, expandable for non-DOT agencies, low in paper handling, and can be used for all standard accounting and reporting.

The information in the systems data base is used to distribute their Section 18 funds and the state's transit assistance program. Funds are distributed partially on how effective a system is in generating funds from non-state/non-DOT sources (50%) and partially on the ratios of ridership and miles to operating expenses (50%). For the Section 18 program, the state distributes funds on the basis of how well the systems perform in relation to their peer group with respect to ridership and vehicle miles. In order to facilitate improvements, the system is set up so that, with their IBM PC computer (using the Visicalc package), operators can answer "what if" questions to determine the impact of potential service and funding changes on their Section 18 and state transit funding. The system also allows individual systems the opportunity to perform internal management by objective functions on items such as ridership, miles, revenue, and expenses.

Joseph Daversa: "Pennsylvania Performance Incentive Grant Program"

The Pennsylvania Department of Transportation has instituted a bonus system to distribute transit grants and reward systems with high performance. Pennsylvania funds rural systems with Section 18 funds (public systems only)

using the following formula. Systems must maintain cost recoveries (expenses divided by revenues) at a minimum of 25 percent to 30 percent. The state will fund between 66 2/3 percent to 75 percent of the non-Federal deficit, with the exact percent of funding varying depending upon four performance measures:

1. passengers per vehicle hour,
2. operating revenue per vehicle hour,
3. deficit per passenger, and
4. on-time applications and reports.

The state uses the indicators to compare the last two completed fiscal years of individual systems. No comparisons are made between or among systems.

Robert Goble: "Rural Public Transportation Performance Evaluation Guide for Pennsylvania: Its General Purpose and Use"

Robert Goble presented the Performance Evaluation Guide that his firm helped develop for the Pennsylvania Department of Transportation. The manual serves as a self-help tool to allow local operators both to improve their systems and demonstrate their effectiveness as a means of generating support. Its use is not mandated by the state. The manual was developed with the help and under the review of local transit managers. It includes performance indicators compiled from readily available data.

The basic procedures for monitoring and evaluating performance are: 1) establishing goals and objectives, 2) selecting functions to evaluate and indicators to use, 3) collecting data and calculating indicators, 4) analyzing and interpreting performance indicators and 5) taking corrective actions and monitoring the results. Besides the basic procedures, the manual also presents specific performance measures that can be used by functional categories, data definitions, implications of negative results, suggested corrective actions, and an exemplary application of the recommended evaluation procedures.

Michael Noel: "Critique of State Transit Performance Activities"

Michael Noel critiqued the session's presentations. Each of the performance evaluation systems presented was reviewed indicating both positive and negative aspects, but the group agreed that performance indicators need to be

used by every transit system as a management tool. From the presentations, Mr. Noel outlined some basic rules that should be followed as part of each system's performance evaluation method:

1. Each system must set objectives and goals, then use performance indicators to monitor these objectives and goals.
2. Good performance should be rewarded with increased funding.
3. One must be careful not to be lured into a false sense of security because of good performance marks without realizing that certain communities have good performance due to outside factors, such as a captive transportation disadvantaged group.

WORKSHOP COORDINATOR: Peter Schauer, Peter Schauer Associates

WORKSHOP REPORTER: Peter Canga, Peter Canga Enterprises, Inc.

WORKSHOP SPEAKERS: Avram Patt and Peter Youngbauer, Central Vermont Transportation Association  
James Richburg, Chipola Junior College  
Daniel Fleishman, Multisystems, Incorporated

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Avram Patt and Peter Youngbauer: "Non Operating Alternatives to Moving People in Rural Areas"

The Central Vermont Transportation Association is an example of an organization taking non-operating actions to assist in the transportation of people in rural areas. Their organization is funded under a FHWA demonstration grant and provides many non-operating transportation services including organizing ridesharing and vanpooling efforts.

Two aspects of the project are of particular interest, because of their uniqueness. First, the project matches non-school client groups with available space on school buses. The school districts have opened up some school bus routes and transport other social service clients with school children. Second, the project has put together a directory of all transportation services in central Vermont, becoming in part a local travel clearinghouse. The directory includes all transportation services available, public and private.

James Richburg: "Using School Buses for Public Transportation"

James Richburg had two messages for workshop participants. The primary message was that it is often feasible and more efficient to use school buses to transport more than just school children. In his area, they have a cooperative of five school districts which use regular school bus routes as feeder bus routes for Chipola Junior College students and relatives of school children.

The school bus/feeder bus transports individuals who are taken to regular school destinations for the buses. Chipola Junior College students are picked up at these points by other buses which transport them to the college.

A secondary message of the presentation was that Section 18 providers should look at junior colleges as a market place for their services. Many students at junior colleges continue to live at home and need transportation to and from school.

Daniel Fleishman: "Alternatives and Case Studies"

Daniel Fleishman gave an overview of options for operating public transportation services in rural areas, including:

1. small transit operations
2. cooperatives .
3. non-operating alternatives
  - brokerage
  - ridesharing
4. combining freight and passengers
  - postal bus

The emphasis of the presentation was on designing a service which fits the needs of the local area.



WORKSHOP COORDINATOR: Ronald Jensen-Fisher, Urban Mass Transportation Administration

WORKSHOP REPORTER: David Raphael, Rural America

WORKSHOP SPEAKERS: Ronald Jensen-Fisher, Urban Mass Transportation Administration  
Janet D'Ignazio, Greater Roanoke Virginia Transit  
Tara Barteo, Colorado Department of Transportation

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Ronald Jensen-Fisher: "Introduction to Microcomputer and Management Information Systems"

Ronald Jensen-Fisher introduced the concept of microcomputers by reviewing their general characteristics. The microcomputer hardware usually consists of

1. the computer itself
2. the keyboard
3. a monitor
4. floppy disk drives (usually 2)
5. a printer (letter quality or dot matrix)
6. a modem (to communicate with other computers).

There are three primary classifications of computing systems. To understand the relative advantages and disadvantages of the three classes, it is useful to consider cost, memory, relative speed, peripheral storage space, and the operating staff that is needed to support the system. Following is a summary of these characteristics:

Class of Computer	Cost	Relative Speed	Peripheral Storage Space	Operating System Staff Support
mainframe	above \$200K	100S	many tape & disk drives	possibly many with high level of expertise
mini-computer	from \$20K to \$200K	10-20S	1-2 disk drives & tape	one with high expertise
business micro-computer	from \$5K to \$20K	S-10S	1-2 floppy disk drives or 1 hard disk	one with minimal experience

From the chart above, it can be seen that the advantage of the microcomputer is that it is low in cost, easy to use, and quick to respond. There is a broad range of software available and it is a tool to be used by those who actually need the data it generates.

There are five basic sources of software including the commercial market, consultants, users themselves, a user support center, and the government. The commercial market has a wide variety of software whose general uses include financial forecasting (spread sheets), file management, and word processing. Commercial software is sold for specific machines; a disadvantage is that you usually cannot adapt or modify the package to meet your specific needs. It is also possible to hire a consultant to design software for your specific needs and machine but this is more costly than commercial packages.

Users themselves often generate software for their own needs which operators may be able to secure and use (e.g., from another agency). Unfortunately, many of these programs are not well documented. It is the operator's responsibility to verify the transferability of the program and make modifications for local purposes. There are many user support groups or centers which can provide much of the documentation, including advice on whether a program is transferable and how to make the necessary modifications.

The final little-known source of software is the government. UMTA technical support has many efforts to develop and disseminate information on the use of microcomputers in transit. The UMTA headquarters section on methods and support provides technical expertise, software sources, training courses,



publications and develops software. That office can be reached at (202) 426-9271. In addition, UMTA has microcomputer coordinators in its regional office and there is a Microcomputers in Transit User Group at (518) 266-6227 which produces a newsletter and information and software exchange.

Janet D'Ignazio: "Uses of Microcomputers on a Fixed Route, Fixed Schedule, Small Urban Transit Property"

Ms. D'Ignazio comments focussed on how to get started with a microcomputer and how it can be used by transit properties. The most important factor to keep in mind when deciding which direction to go with computers is what the microcomputer is to do for your organization. It is important to let the organization drive the machine rather than vice versa. To rationalize the process, a logical place to start is with a small in-house study on who would use it, for what purpose, and where. It is not necessary to have a computer expert perform the study as long as someone within the organization knows the operation in enough detail to understand what can be computerized and the implications of making such a move. It is possible to get ideas and information from computer store personnel but their recommendations should be evaluated based upon local needs.

When buying a microcomputer, there are five basic considerations to keep in mind:

1. availability of software (which is a high expense item),
2. reliability and serviceability of system (look at service contracts, and whether loaner equipment is available),
3. ease of use of machine (especially if some personnel have not been exposed to computers),
4. flexibility of machine (particular applications vs. general use), and
5. expandability.

Microcomputers can be used for many purposes in small systems. General purpose off-the-shelf programs are available to keep files on everything from clients to maintenance parts and personnel records. Programs such as VisiCalc can be used to allocate costs to sponsors, make ridership projections, and plan for fleet replacement.

Tara Bartee: "Uses of Microcomputers in Human Service Transit Agencies"

Some of the applications for microcomputers within human service agency transportation systems can be described by using the example of one such agency in Colorado. This agency uses the microcomputer for many purposes including:

1. maintaining client files including the demographic characteristics of clients,
2. maintaining vehicle files including the costs related to each vehicle, and
3. allocating costs to various member agencies on the basis of the percentage of miles each agency's clients are transported.

Microcomputers can also be used as a management tool on the state level. The Colorado Department of Transportation requires that all grantees and volunteer operations submit quarterly reports on their systems including vehicle hours, vehicle miles, ridership and costs. The state analyzes the data and sends them ratios of productivity along with graphs comparing their system with itself over time and their system with other systems.

As an extension of this work, the state has recently received an UMTA grant to purchase microcomputers for 5-6 different human service agencies which will allow these agencies to communicate with each other. It was noted that the long distance telephone charges for the "dedicated line" for such systems can be high (as high as \$400 - \$500 per month depending on use). It was also noted that lightning can be a significant factor since lightning as far away as 100 miles can knock out the system.

SESSION COORDINATOR: Jon E. Burkhardt, Ecosometrics, Incorporated

SESSION REPORTER: William E. Osborn, Southern Missouri Transportation Services, Inc.

SESSION SPEAKERS: Michael Petersen, Michigan Department of Transportation  
Ann Palmer, Governor's Office, South Carolina  
Peter M. Schauer, Peter Schauer and Associates  
Jon E. Burkhardt, Ecosometrics, Incorporated

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This session focussed on the different uses of performance indicators by states and local systems. Key topics and milestones in the development of a statewide system of indicators were discussed for Michigan, where efforts have been underway since 1978, and South Carolina, where efforts are just getting underway. Applying performance indicators to personnel issues was the subject of a specific discussion. The session concluded with an overall summary of the uses of performance indicators for specific purposes, including a discussion of "typical" ranges for specific performance indicators. In the general discussion following the presentations, several system operators complained about being taken to task for performance indicators with low values while being required by boards of directors to provide specialized but low-productivity services. The point was made that a good system of indicators was as relevant to evaluating the policies of a board of directors as to evaluating the day-to-day operational decisions of the transit system's manager. Members of the audience were challenged to describe circumstances under which performance indicators should not be used at all for a particular transit system, but no one was able to describe such circumstances.

Michael Petersen: "Statewide Transit Performance Indicators"

During the late 1970's, there was a legislative mandate to the state's auditor general to establish standard performance and accounting records for passenger transport systems. As a result of this mandate, a contract was written with Peat Marwick, Mitchell & Co. for a portion of this work.

The Michigan Public Transit Association opposed the project from the beginning. The operators felt that each property was unique and should not be compared to others. They did not want the results of performance evaluations to influence basic funding and did not support incentive funding based on performance. While the need for accountability was recognized, most operators were leery of providing "data that could be misused." However, after a pilot test with ten properties and the establishment of a task force to deal with the perceived problems, most of the operators have changed their attitudes.

Currently, all operators in the state -- from the largest transit system to the smallest 16(b)(2) operator -- must fill out a four-page data report (including signature and certification of the data) to receive funding. The data collection (which includes an instruction manual) is based on Section 15 reporting requirements. The state has a complete set of records since 1977, and has a computer program that is used for calculating performance indicators and producing reports.

Ann Palmer: "Developing Performance Audits for Transit Systems"

South Carolina has begun to develop a set of performance indicators whose major use will be to help local managers improve transit system effectiveness. The A.T.E. Management Company is assisting the state in developing a process leading to written audits of each system receiving funds.

This system of indicators is seen as diagnostic in that it presents questions, not answers. Over 800 types of indicators were uncovered; the major categories were found to be service quality, customer service, cost effectiveness, maintenance, and organizational efficiency. The system of indicators will focus on the analysis of trends for particular systems rather than on the comparison of systems to each other. The transit properties in the state have supported the development of the indicators for use by them and the state. Extensive data have been collected but have not yet been aggregated into a management information system.

Peter Schauer: "Performance Measures for Evaluation and Funding"

Mr. Schauer's presentation emphasized the key role of the transit system staff in achieving high levels of productivity and performance in transportation. Authors were cited who noted the high percentage of resources spent for

transportation personnel; the idea that one unit of resources devoted to labor is equal to three units invested in capital was discussed. Management improvements are possible through a management by objectives program and the distribution of a one or two page letter describing management's philosophy with regard to personnel to all workers was suggested.

Special programs to enhance personnel productivity can include:

- A. Process improvements, likened to icing on a cake, which results in methods improvements.
- B. Structural changes, such as quality circles, job enrichment, and autonomous work groups.
- C. Incentives programs, which may involve
  1. performance targets,
  2. recognition systems,
  3. task systems, whereby employee and employer negotiate a "fair day's work".
- D. The focus on special evaluation areas
  1. planning for personnel needs,
  2. the relationship of the described job to the actual job,
  3. number of routes missed due to no driver vs. total routes,
  4. routes driven by supervisory personnel vs. total routes,
  5. planned vs. actual recruiting and training programs, and
  6. planned vs. actual compensation.

Jon Burkhardt: "Why Use Which Performance Measures for What Reasons?"

This presentation summarized the results of the previous papers and other discussions of performance indicators. Under the subheading of "uses and abuses of data," an attempt was made to separate legitimate concerns from groundless fears concerning the application of performance indicators. Performance indicators will be used to make significant decisions about local transit systems, such as whether they should be preserved, enhanced, altered, or terminated, but their use in these decisions was described as preferable to such decisions being made in the absence of performance data.

The major uses of performance indicators were defined as verifying expenditures, assessing needs for service, identifying service improvements, controlling costs, and obtaining public support. Cost and ridership statistics can be combined into measures of resource utilization (efficiency) and achievement of objectives (effectiveness). A minimum viable list of performance measures was discussed, including:

Cost ratios

- per passenger
- per vehicle hour
- per vehicle mile

Load factor ratios

- total passengers per vehicle hour
- total passengers per vehicle mile

Overall ratios

- monthly passengers per total population (market penetration)
- operating ratio indicative of subsidy and cash flow.

"Typical" ranges for the statistics for each of these measures were discussed. These ranges are available in Mr. Burkhardt's formal paper.



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SESSION COORDINATOR: William Osborne, Southeast Missouri Transportation Service

SESSION REPORTER: Ronald Morse, Wisconsin Department of Transportation

SESSION SPEAKERS: Buddy Fuqua, Green River Intercounties Transit System, Kentucky  
Kyle Nibert, Black River Area Arkansas Development Corporation  
William Underwood, Pennsylvania Department of Transportation  
Ronald Morse, Wisconsin Department of Transportation

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Buddy Fuqua: "Service Contract Rate: Negotiating a 'Fare' Price"

The Green River Intercounty Transit System in Kentucky provides services to a number of agencies under contract including Head Start, Senior Companion, rest homes, and others. It provides a coordinated service and there are no priorities given. The service is open to the public. The agency clients are charged \$1.70 per one-way trip within one county and fares to the general public range from \$1.00 to \$2.00. Of the \$300,000 budgeted expenses, \$120,000 is received in revenue.

Kyle Nibert: "Operating at Zero Deficit"

The Black River Area Arkansas Development Corporation provides a coordinated transportation service with a zero deficit. The system includes six city routes, 27 county routes, and four commuter routes, all under contract with various agencies. Billing is done by computer and analysis of costs is performed on a monthly basis. The system has been able to maintain the same rates for the last three years. The system employs two mechanics, six full-time drivers, nine part-time drivers, and has eight volunteer drivers for its commuter routes.



William Underwood:    "The Lottery: A Tax People Love to Pay"

The Pennsylvania State Lottery provides funds for programs benefiting senior citizens including full and reduced fare programs. Free rides are offered to participating fixed route carriers on off-peak hours. The contract with the carrier is a formula which specifies 75 percent times the average fare times the number of passengers carried. Over 600,000,000 free rides have been given.

In 1980, the program was expanded to offer reduced fares for senior citizens on shared-ride transportation and during all hours on public transportation. Also, \$13.6 million was available to counties for planning new or expanded service, revenue replacement and county transportation services. Only about a dozen counties in the state are not participating.

Ronald Morse:    "Prepaid Fares"

Prepaid fare plans can enhance revenues. A number of studies have been performed on urbanized areas but relatively few at the non-urbanized level. A survey was conducted of the Section 18 funded systems which showed that approximately 25 percent of the systems offered a prepaid fare plan as compared to 93 percent at the urbanized level.

Tickets are the most popular form of trip-limited plan accounting for 63 percent of the total. Multiple ride punch cards account for 21 percent and tokens for 16 percent. Monthly passes account for 65 percent of the time-limited plans. Weekly and daily passes are approximately 15 percent and 13 percent respectively.

A number of trip-limited plans offer substantial discounts. Those systems which have prepaid plans should take a hard look at reducing the discounts offered on trip-limited plans. If urbanized areas are any guide, maybe even more important is the fact that instituting a prepaid fare plan, when none exists, does not appear to be very effective in increasing revenues. However, a prepaid fare plan could have a substantial influence in fare policy when it is used or initiated in combination with a general fare increase to "soften the blow."

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SESSION COORDINATOR: Donald Tudor, Division of Transportation, Office of Governor of South Carolina

SESSION REPORTER: Susan Gore, Coastal Rapid Transit Authority in Myrtle Beach, South Carolina

SESSION SPEAKERS: Donald Tudor, Division of Transportation, Office of Governor of South Carolina  
William Williams, Raleigh, North Carolina Transportation Service  
Jerry Mooney, Athens, South Carolina Transit System  
John Kent, Carter-Goble Associates

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The session was operated in a modified debate format with Mr. Tudor first presenting the characteristics of a transit system in severe trouble -- "UMTAville" Transit. This fictitious case study was based on a real life situation. Each of the operators then made recommendations for how they would change the system to make it viable and the session was wrapped up with a presentation of what actually happened in "UMTAville".

Donald Tudor: "Introduction of the Case Study"

At the time the debate was taking place, UMTAville Transit had recently undergone a reorganization and attempted to upgrade its image. Unfortunately, the system still had no coordination with private operators such as taxis or human service agencies. Costs were rising, services and miles were being cut, and ridership and revenue were declining. Cost per mile had almost doubled from 1973 to 1980 and cost recovery and passengers per mile were cut almost in half during the same period. Vehicles were in poor shape with 78 percent having over 100,000 miles and 30 percent having over 150,000 miles. UMTAville routes were covering only 50 percent of the major shopping facilities, 54 percent of subsidized housing, and 31 percent of major employers. They were, however, covering 70 percent of community shopping facilities, 86 percent of medical facilities, and 93 percent of human service agencies in the area.

William Williams: "The Case Study from the Private Sector Operator Perspectives"

As a representative of the private sector, and from his experience in a setting similar to UMTAville, Mr. Williams responded to the challenge presented in the UMTAville case with the following changes:

1. Use UMTAville Transit as a catalyst to bring providers together -- coordination of human service agency transportation services, private providers, public fixed route services,
2. Set up an advisory committee of human service agencies,
3. Develop a contract between UMTAville Transit and private operators in the area to provide demand responsive service to human service agencies on a purchase of service basis (per mile or per vehicle, prorated if vehicle is shared). This service would supplement the human service agency vans to make them more efficient.
4. Maintain UMTAville Transit. The UMTAville Transit operation would remain relatively unchanged, operating the fixed route service. There would, however, be a coordinator linking the dispatcher of the transit authority to the dispatcher of the private transportation company.

Agencies will be more cooperative if you talk to the person who operates the service day-to-day with arguments such as "no more calls at 5 a.m. that a vehicle is inoperative." Agencies will also see the advantages if the private operators has a computerized record keeping system that assists in reporting needs -- giving a list each month of trips by client, costs for each client, etc.

Private operators are in the business of running transportation services. They have the whole service in place including dispatching operations. They know the problems of transporting people. A few hints for getting private operators involved would include:

1. Specify clearly what you want the operator to supply, including services, reports, etc.
2. Private operators can be or already are sensitive to the needs of special users. Taxicab companies have been carrying these groups for a long time and have experience but you have to tell them what you want.

3. Long term contracts can lower costs.
4. You may receive a side benefit of lower taxicab fares for all users in the town.

Jerry Mooney: "The Case Study from the Fixed Route Operator Perspective"

As a public operator in a community such as UMTAville, Mr. Mooney presented his recommendations for how UMTAville Transit should be changed:

1. Designate the transit authority the lead agency for the transportation coordination.
2. Have private operators provide demand responsive trips for human service agencies on a contract basis (based on rate per trip) which are integrated into fixed route services.
3. Take a step-by-step approach to making operational changes improving on what they have. Rethink some routes directing services toward employment centers, shopping centers and park and ride sites. Initiate services in stages evaluating routes and modifying as needed.
4. Develop administrative/managerial controls.
5. Develop a marketing campaign.

This approach would improve the efficiency and production of the fixed route service, allow human service agencies to get out of the business and attract new riders. Service coverage would improve, ridership would increase and costs would stabilize.

John Kent: "What Really Happened in UMTAville"

UMTAville is, in real life, Greenville, South Carolina. The Greenville Transit Authority has made a substantial recovery over the past year. With the assistance of Carter-Goble Associates, they have reorganized and regrouped. The Transit Authority has initiated a broad marketing/promotion campaign and was being given a new image. New vehicles were purchased to replace their aging fleet and the transit authority moved into a new building.

The Greenville Transit Authority has three major divisions: operators, maintenance, and brokerage. Their vehicles provide urban and rural fixed route service, commuter subscription service, contract services to employers, rural demand responsive service, services to the urban handicapped and services to the coordinated human service agencies in the area. The brokerage arm of the Transit Authority operates a ridesharing match program and, through its inter-agency client file, works with private operators who, while maintaining their regular taxi services, share responsibility for rural demand responsive service, service to the handicapped, and service to human service agencies. The brokerage program also manages an interagency pool of volunteer vehicles and drivers who provide isolated trips as needed.

As the result of these changes, in the past six months productivity has improved over the previous six months as follows

	<u>July-Dec.</u> <u>1982</u>	<u>July-Dec.</u> <u>1983</u>	<u>Change</u> <u>(%)</u>
● ridership has increased	\$152,495	\$247,812	+ 63%
● revenue has increased	\$105,786	\$171,625	+ 63%
● miles have increased	\$195,704	\$254,142	+ 30%
● costs have decreased	\$487,825	\$469,459	- 4%
● costs per mile has decreased	\$2.49	\$1.85	- 35%
● revenue per mile has increased	\$ .54	\$ .63	+ 17%
● cost recovery has increased	21%	36%	+ 71%
● cost per passenger has decreased	\$3.19	\$1.89	- 69%
● passengers per mile have increased	\$ .78	\$ .98	+ 26%

SESSION COORDINATOR: Donald Nelson, Extension Service, U.S. Department of Agriculture

SESSION REPORTER: Peter Horne, Cumberland County Extension Agent, Portland, Maine

SESSION SPEAKERS: Edmund Jansen, Institute of Natural and Environmental Resources, University of New Hampshire  
David Raphael, Rural America, Washington, D.C.  
Edward Good, Friendly Taxi, Lancaster, Pennsylvania  
Herbert Zeichick, Extension Agent, University of Maine

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Donald Nelson: Opening Remarks

The U.S. Department of Agriculture has had a basic concern about transportation for many years because there is a need to support the rural areas of our county with appropriate transportation systems. The continuing concern for those living in rural America is a natural one for the Extension Service.

The success of the Extension Service in solving problems in rural communities has been based on understanding the problem and involving those persons affected in its resolution. This approach has engendered support for lasting solutions. The process of involving local people in decisions which affect them should not be overlooked by those planning and developing rural transportation systems.

Edmund Jansen

The characteristics of rural population have gone through many changes over the years. While the relative size of the rural population has been declining each decade since 1790, the total population has increased each decade except during the 1950-1970 period. In fact, a big turnaround occurred between 1970 and 1980 when rural population increased 11.1 percent. Some rural counties are increasing while others are decreasing. As a consequence, when planning for rural transportation, it is necessary to plan on a "site specific" basis.



Considering energy costs in the context of planning rural transportation service, petroleum energy prices, while relatively stable now, have a significant impact on our transportation alternatives. The transportation sector must find an alternative energy source to replace petroleum during the next 25 years. There is a need to consider productivity in the use of energy resources. For example, a sparsely loaded transit vehicle may not be as energy efficient as a fully-loaded small automobile (but it may be difficult to achieve high vehicle occupancies in small cars in rural areas). Vehicle occupancy is a critical factor affecting the energy efficiency of any mode of transportation.

The automobile is the predominant mode of transportation in non-metropolitan areas, but those who do not have access to a private automobile are put at a major disadvantage. Rural areas have many of the same transportation problems as urban areas but the sparse, dispersed populations and greater distances discourage development of mass transit systems.

David Raphael

The accumulated myths about rural America need to be dispelled. The population of the U.S. will not be completely urbanized in the future. Rural areas have attracted many businesses which are not agrarian in nature and the migration of people out of the countryside has stopped. Politically, rural America is still a significant force, not only in the agricultural sector. The increase in diversity of economic activity in rural America has more closely tied its economic trends with the rest of the country. The political influence of the rural sectors of the country will continue to grow in the future. A commitment should be made by leaders in transportation to provide equity in meeting rural as well as urban needs.

If rural areas are left with the private auto as the only means of transportation, then the low income, elderly, and handicapped will become disenfranchised and unable to meet their most basic needs. Many cannot afford the cost of owning a car or do not have the capability to operate an automobile. A shift in the cost of transportation from private to public sources would provide more equity for these groups. In addition, as funding for transportation has moved from private to public sources, a disproportionate share of public money has been spent in urbanized areas to solve their transportation problems. It is time to increase the commitment to rural areas and to develop policies and actions based on the realities of rural America.



Edward Good

There is a high value to be placed on involving local taxi systems and other private providers in solving rural transportation problems. The steps to setting up a transportation system include the involvement of the private providers and local governments and social service agencies. An integrated transportation system can be developed through the establishment of a non-profit transportation agency; this system can fill the need if the right people are involved along the way.

Herbert Zeichick

The planning of rural transportation systems must include the involvement of local people and the eventual users as the plan is developed. Plans should be made with the involvement of local citizens; this will help them accept responsibility for making the system work and identify the system as "their own creation."



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WORKSHOP COORDINATOR: Loretta Sharpe, Regional Transportation Program, Incorporated, Portland, Maine  
 Patricia Saindon, Transportation Division, Montana Department of Commerce

WORKSHOP REPORTER: Patricia Saindon, Transportation Division, Montana Department of Commerce

WORKSHOP MONITORS: Russell Thatcher, Massachusetts Executive Office of Transportation Construction  
 Lawrence Harman, Call-A-Ride, Hyannis, Massachusetts

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### Summary of Workshop

The workshop was operated as a conduit for participants to share information and experiences in generating and working with various revenue sources. Participants were asked to complete a series of three exercises to determine the extent of their familiarity with various funding sources. Their answers were tabulated and displayed on large paper. The discussion was aimed at expanding their knowledge of funding sources through the sharing of experiences among participants. A copy of the resource materials used in the workshop is attached to this report.

In the first exercise, participants were given a list of Federal funding sources most commonly used by rural transit systems and asked with which they were familiar. All participants were familiar with Section 18 of the UMTA Act, with the percentages declining as follows:

<u>Source</u>	<u>Percent Familiar</u>
Section 16(b)(2) of the UMTA Act	75%
Title IIIC of the Older Americans Act	69%
Title XIX of Social Security Act (Medicaid)	63%
Social Services Block Grant (formerly Title XX)	63%
Section 9A of the UMT Act	56%
Section 3 of the UMT Act	50%
Title IIIB of the Older Americans Act	50%
Title V (Headstart)	50%
Section 5 of the UMT Act	38%
Developmental Disabilities	13%
Title I of the Rehabilitation Act	6%

In the second exercise, participants were asked to list familiar or presently used sources of income which were not mentioned in the first exercise. A total of 21 other sources were mentioned, including:

- Local city/county governments
- Interest on money
- Charter/rentals
- United Way
- Xerox/machine fee
- Maintenance contracts
- Fares/donations/volunteers/service clubs
- Health department
- State funds
- Leased space
- Action
- CETA/Jobs Bill
- Title XX
- Green Thumb
- RSVP
- Foster Grandparents (Action)
- Delaware - Turnpike Toll: all tolls go to transit
- Arkansas - House Bill #610: Private Corporations are taxed on additional \$3 to be administered by AK DOT to go to all 16(b)(2) & 18 recipients
- Montana - Senate Bill #21: Local governments may levy up to one mile for E&H services
- Montana - Gas Tax Revenue: \$75,000 goes to cities with public transportation and \$75,000 goes to counties
- Montana - City of Butte taxes: all gambling machines, all revenue goes to transit

The final exercise asked a series of questions. The first question asked "In seeking additional revenue, particularly human service agency funding, how are responsibilities for service defined and delineated?" However, much of the discussion focussed on how to cost the service rather than defining what service to provide. Participants indicated that problems in this area have arisen because many human service agencies do not know their true costs and must

spend some effort determining what the service really costs. Recommendations were made that services be coordinated and programs billed on the basis of individual users or by social security numbers. Further, each program should identify their clients and the service should be defined by contract.

When asked how revenue enhancement should be approached, participants again stressed the need to determine service costs. To give human service agencies an incentive to use the service, the service should be of better quality than they are currently receiving.

When asked about methods for costing and billing, participants said that costs should be based on a fixed hourly rate from the previous year with a percentage increase and \$2 "pad" added. The standard approach is not realistic; there is a need to be innovative but also legal.

Additional revenue sources may have some impact on administrative responsibility, but with the Section 15 reporting system, they could probably handle the extra burden. However, it is not very useful for human service providers to use Section 15 because they still have separate, very complex reporting requirements for their other programs.



WORKSHOP COORDINATOR: Ray Mundy, University of Tennessee, Knoxville

WORKSHOP REPORTER: W. David Lee, American Association of State Highway and Transportation Officials, Washington, D.C.

WORKSHOP SPEAKERS: Michael Noel, Cambria County Transit Authority, Cressen, Pennsylvania  
Gray Cartener, Ashtabula County Transportation Brokerage Program, Ashtabula, Ohio  
Donald Rhodes, City Planner, City of Concord, New Hampshire  
Chip Morrison, City Manager, City of Auburn, Connecticut

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### Michael Noel

One of the primary reasons that transit authorities deal with local governments is to secure and account for funding. The Cambria County Transit Authority serves 40 of the 44 separate boroughs in the county and receives money from each one (in addition to the county). When the authority was being set up, the county was willing to spend some money but was concerned that the communities being served also support the service. As a consequence, the county offered to provide one dollar for each dollar provided by each borough. The amount of funds to be contributed by each borough was based upon the percentage of passengers in the community for paratransit service and the percentage of vehicle miles in the community for fixed route service. As a result of this process, 40 of the county's 44 boroughs agreed to provide funds.

Mr. Noel had nine rules for working with local governmental officials:

1. Reverse the roles and see if you have the confidence that the service should be supported,
2. In your planning process, come in at the right time in the government's financial year and never bring a "crisis",
3. Meet officials on their own turf -- go to their meetings to present your case,
4. Use common sense, tact and courtesy,
5. Keep local officials informed,
6. Share credit and not blame,



7. Develop options for dealing with situations,
8. Advertise your service so that it is visible and generates support from the community, and
9. Become involved in the community (e.g., "toys for tots" or "food for families" on your buses or assist in community emergencies).

The final message is that systems will develop a good relationship with local officials if they provide the best service they can.

#### Gary Cartener

The Ashtabula County Transportation Brokerage Program is a private non-profit organization that facilitates the transporting of people rather than actually providing service. The program provides driver training, arranges ridesharing, reimburses some volunteers at 20¢/mile, is a clearinghouse for information on transportation in the community, etc. It also "troubleshoots" for individuals or organizations as a mechanism of last resort. Because of its role as a "People Mover Program," the brokerage program gets very involved in the community. It is funded by the state and Federal government through the county commission. As a clearinghouse, the State requires the Brokerage Program's approval of Section 16(b)(2) applications before agencies can apply for vehicles. Their predominant clientele are captive riders. Publicity is an important component to their program especially for ridesharing. The county commission has a policy that the private sector can provide service better and cheaper so they have had to work within that statement.

Because of the funding flow, it is also important to have visibility with county commissioners and to deal with them in a constructive way. Communication is the most important thing to remember. It should also be remembered that while our goals are in transportation, local officials have goals that are necessarily very broad -- transportation may be low on their list of issues to deal with. Don't always go to them with problems -- go with solutions.

#### Donald Rhodes

The City of Concord (population 30,000), the capital of New Hampshire, has a 15-member City Council. It does not yet have a transportation system, but has been studying the issue and making proposals for the last 2-3 years.

A private system existed until 1970 and in the late 1970's a proposal was made but dropped for lack of local match. The history of Concord's struggle to start a public system illustrates the political nature of decisions regarding transportation.

In mid-1979, the council appointed a three-member committee and authorized an RFP for the provision of transportation service. Of the two bids received, a social service agency's proposal was most favorable. A public hearing was held to review the spending of \$35,000 in local match funds and, when the idea passed, the city applied for Section 18 funds. However, in the November 1981 elections, the incumbent mayor did not run. Since Reagonomics had come to Concord, public transportation became a major campaign issue with one candidate for it and another against it. After the election, the council's budget committee voted against providing the local match and the 1982 budget did not contain funding. As of now, they anticipate that the social service agency may go ahead with the project without city funding.

A number of lessons were learned in this process:

1. Take advantage of a supportive public body quickly,
2. Try to involve opponents of public transportation in a constructive way,
3. Personalize information and let officials know what the public transportation system is doing,
4. Develop constituency groups and recognize that public transportation has an extended constituency (children of elderly; parents of handicapped).

### Chip Morrison

Auburn, Maine, with a population of 25,000, has two transit systems: a traditional fixed route system which is privately operated (but uses public funds for capital expenses) and a public rural system serving a three-county area.

It is important to remember that transit is not a major issue for a city such as Auburn. Transit has only shown up once in the last six years on the list of 20 issues addressed by the city council, and then it was 13th -- taking only ten seconds to address. It is from that perspective that you must view your relationship with local officials. A few tips on relating to public officials are:

1. Know who they are -- get names, titles, etc. correct -- be professional,
2. Make your pitch at the right time -- when their budget is being prepared,
3. Be cognizant of other demand in the community,
4. Look to other successful efforts,
5. Relate your requests to the needs of people in the community,
6. Develop advocates within the system, and
7. Let them know what public transportation are doing at times other than in the budget process.

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WORKSHOP COORDINATOR: Richard Garrity, North Carolina Department of Transportation

WORKSHOP RECORDER: Connie Garber, York County Community Action, Sanford, Maine

WORKSHOP SPEAKERS: Candace Bakke, Iowa Department of Transportation  
George Smith, Washington Department of Transportation  
Richard Garrity, North Carolina Department of Transportation

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Candace Bakke: "Life Cycle Costing Procedures in Small Transit Vehicle Procurement"

The 1982 Transportation Appropriations Act requires that all transit rolling stock procurements aided by Federal funds include "an evaluation of performance, standardization, life-cycle costs, and other factors the Secretary may deem relevant in addition to the consideration of initial capital costs."<sup>1</sup>

Life cycle cost (LCC) procurement is intended as an alternative to low bid procurement. LCC analysis calculates the anticipated ownership, operating, and maintenance costs of a piece of equipment over its useful life. Instead of transit agencies accepting the lowest responsive bid to award contracts, it allows them to make decisions on awards weighing more cost factors than just vehicle price. The LCC concept grew out of a concern on the part of transit properties that vehicle quality suffers when manufacturers, striving to remain competitive, do not make design improvements to vehicles because they would drive up the purchase price.

### Life Cycle Costing

The Iowa DOT has developed two LCC methods to satisfy UMTA's Section 16(b)(2) program. The first method is used for purchasing vans. It was developed

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<sup>1</sup>The history of this provision began in 1978 when Congress directed the U.S. DOT to study the procurement methodology for transit in Section 16(b)(2) of the UMT Act of 1964, as amended. The 1980 Appropriations Act required that consideration be given to life cycle costs in the requisition of rolling stock procured with Federal funds.

and has been in use for several years in purchasing vans for universities and the department. This method involves the following contract award formula:

$$CA = B + G - R$$

where

- CA = Contract Award
- B = Bid Price
- G = Projected Fuel Expenditure
- R = Resale value (where applicable) after 5 years/75,000 miles

Iowa is currently requiring use of the following data in preparing bids:

- Expected Life = 75,000 miles
- Projected Annual Fuel Consumption (PAFC) = 15,000 miles per year x MPG
- Annual Fuel Expenditure (AFE) = PAFC x Projected Fuel Cost per Gallon
- $G = AFE'83 + AFE'84 + AFE'85 + AFE'86 + AFE'87$
- Fuel Cost Per Gallon assumed to be:

<u>Year</u>	<u>Gas</u>	<u>Diesel</u>
1983:	\$1.29	\$1.35
1984:	1.39	1.49
1985:	1.48	1.57
1986:	1.56	1.65
1987:	1.63	1.73

- Resale Value = the average trade-in value from the NADA Used Car Guide. The value used will be of a comparable model from 2 to 5 years old based on model changes.
- MPG = EPA estimated mile per gallon. Each bidder must also submit two sets of annotated gas mileage guides or complete tests of EPA estimated miles per gallon showing each make/model, engine, and transmission combination bid.

#### Life Cycle Costing for Mid-Size Vehicles

Iowa has developed a method for considering vehicle LCC in the determination of contracts awarded to purchase mid-size (16-24 passenger body-in-chassis) vehicles. After reviewing LCC methods used by other states on transit systems, the Iowa DOT has devised a LCC method that will hopefully prove to be a workable approach to purchasing more cost-effective vehicles. The contract award formula the department intends to use in a procurement that is out for bids now is as follows:

$$CA = BP + MCG - WC$$

where

CA = Contract Award  
BP = Bid Price  
MCG = Maintenance Cost Guarantee  
WC = Warranty Credit

The mileage estimate over the life of the vehicle shall be based on an average of 24,000 miles per year or 120,000 miles over the life of the vehicle.

#### Maintenance Cost Guarantee

This factor covers the cost of periodic (daily, weekly, monthly) scheduled maintenance requirements (lubrication, oil/filter, etc.). Using the manufacturer's lubrication and maintenance manuals as authoritative reference, the bidder guarantees that scheduled maintenance costs will not exceed a specified amount (MCG) for 12 months or 24,000 miles of operation. A performance surety will be held to pay any documented costs in excess of the MCG.

Each bidder is required to use a worksheet in preparing his MCG estimates. The bidder is to supply MCG estimates for five years of vehicle operation. Material prices are to be from the bidders latest available price lists. The receiving agency will document actual maintenance costs on the vehicle. If the vendor can show that maintenance costs are excessive, the actual costs will be adjusted downward in the evaluation of the MCG performance to the going rate by the Department.

#### Warranty Credit

The minimum warranty requirement is 100 percent parts and labor for 12 months with unrestricted mileage. Extended warranties, beyond 12 months, are interpreted as an indication of the bidder's faith in the reliability of his specified product. Extended warranties shall require a surety to insure the warranties offered. As a factor of the contract award formula valuations (penalties) have been assigned to the absence of manufacturer's extended warranties.

Warranties of incremental periods shall be credited according to the extent of the warranty offered and the specified credits. That is, an 18-month, 36,000 mile warranty would be credited at \$375.

### Performance Bonds

A performance bond shall be issued as surety for extended warranty credit and for the maximum maintenance cost guarantee. The bond amount for the warranty credit shall equal the amount of the credit as shown in the Contract Award section of this instruction. The bond amount of the maintenance cost guarantee shall be for \$500.

The performance bonds shall be in the name of the transit agency designated to receive the new vehicles. The bonds will not be required until the vendor enters into a contract to deliver vehicles.

When asked whether life cycle costing negatively affected bid prices, Ms. Bakke responded that this has not been the case -- their last joint bid process for Section 18, Section 3 and Section 16(b)(2) vehicles solicited competitive price quotes. It was pointed out that the MBE/DBE requirements have no impact on bid process since individual suppliers are responsible for meeting the requirements in order to be considered.

### George Smith: "UMTA Section 16(b)(2) Vehicle Rehabilitation"

Since the first allocation of Section 16(b)(2) funds in 1975 for capital assistance to private nonprofit corporations who provide transportation services to the elderly and handicapped, the amount of money available to the states has decreased -- both in actual dollars and buying power. Along with this decrease has come cuts in funds available for other elderly and handicapped programs. In order to preserve current service levels, a way to make more efficient use of available funds is needed.

While it would be nice to have new sources of revenue to draw upon, this is unlikely. And, while systems should strive for higher productivity, this may not be an immediate source of funds if programs are dependent upon outside factors such as the service area covered and need to provide medical trips. However, it may be possible to shift funds out of capital into operations if a way could be found to continue service without having to replace equipment every 100,000 miles.



In mid-1981, an inquiry was made to the Washington State Department of Transportation (WSDOT) by the Evergreen State Specialized Transportation Association (ESSTA), an association of elderly and handicapped transportation providers, to check if replacement engines and drive trains (transmissions, drive lines, and rearends) were an allowable expenditure under the 16(b)(2) program. They asked why they should spend \$14,000 for a new vehicle when a small portion of that amount could be used to rehabilitate an otherwise sound vehicle.

WSDOT pursued ESSTA's request with UMTA headquarters in Washington, D.C. through UMTA's Office in Region X. While waiting for an answer, in July 1982, WSDOT submitted a new Section 16(b)(2) grant application to the UMTA Region X office which included requests for 13 replacement engines and other key elements of the drive train.

In August, the WSDOT grant request for the replacement equipment was given a conditional approval, and, at that time, UMTA decided to do an engineering and economic analysis through their research branch, the Transportation Research Center. The results of this research included recommendations pertaining to vehicle rehabilitation, inclusive of all parts of the vehicle. The most important point made in the report was that rehabilitation is not intended to compensate for deferred or poor vehicle maintenance.

Therefore, minimum guidelines were set including:

- only vehicles at least four years old or having 100,000 miles will be considered;
- a limit on expenditures per vehicle was set at 50 percent of its replacement cost;
- this 50 percent cost will include the rehabilitation of accessibility equipment which will be treated as part of the vehicle; and
- after rehabilitation is completed, the vehicle must remain in service for a minimum of three years.

Finally, in February 1983, UMTA Region X approved a pilot project for one of the Washington requests involving three vehicles. As a result of the success of this project, it is anticipated that the procedures outlined in the "Rehabilitation Guidelines for Section 16(b)(2) Vehicles" will become official when the new Section 16(b)(2) guidelines are issued.

Mr. Smith's presentation triggered a large number of questions which are summarized below:

- Q. Is the rehabilitation program available nationwide?
- A. He was not sure but suspects that it is. Tennessee is rehabilitating vehicles using Section 18 funds.
- Q. What is the warranty on a rehabilitated van?
- A. The standard manufacturer's warranty applies.
- Q. Since the rehabilitation cost does not include the engine, how do you figure cost of that extra work needed?
- A. The evaluation of the extent of rehabilitation needed is somewhat subjective.
- Q. Is rehabilitation cost coming from operating budget?
- A. No, from capital match monies, but at a lower match than new vehicles.
- Q. Is the \$300 rule from UMTA waived?
- A. The total rehabilitation is considered, not each item.
- Q. How are rehabilitation contractors selected?
- A. Through a bid process with a minimum of three bids from firms within the community.
- Q. Have any major rehabilitation companies bid?
- A. No, because it has been the drive train and engine only. Work has been done by local companies.
- Q. What has experience been on reliability?
- A. More time is needed to assess the results; they're just starting up.
- Q. Is there any consideration of salvage value in assessing the cost factors in replacement versus rehabilitation decisions?
- A. Not in the WSDOT system, but salvage value could be considered.

Further suggestions were made to consider use of prison services for rehabilitation, consider purchasing military vehicles, watch quality control and consider Zeibart treatment to preserve vehicle bodies.

Richard Garrity: "Safety and Design Considerations in Wheelchair Lift/Van Conversion Specifications"

In 1980, the North Carolina Department of Transportation (NCDOT) imposed a moratorium on the purchase of accessible vans. This moratorium was the result of complaints and concerns expressed by private-non-profit organizations on lack of lift reliability, inadequacy of wheelchair tie-down equipment, and inadequacy of interior access for ambulatory and semi-ambulatory passengers. The NCDOT undertook a study to revise its specifications, explore new advances in wheelchair lifts and securement devices, and improve safety.

Two constraints were recognized early in the study. First, most vehicle conversions are performed on 15-passenger vans which are not designed to accommodate the wheelchair lift or raised roof. Second, wheelchair individuals comprise a small percentage of the mobility-impaired population and the other non-wheelchairbound individuals should be considered.

Wheelchair Lift and Related Items

Either electro-hydraulic and electromechanical lifts can be used. Local projects prefer the hydraulic type which are easier to repair in-house. Existing power sources are used to operate the lift with a minimum battery of 85 amp/hr.

Independent bidders, for lift installation should provide to the project a copy of the manufacturer's installation instructions to allow transit managers to check for proper installation. A semi-automatic lift (where the operator must manually lower and raise the platform from the stowed to the deployed position) is specified on the basis of cost and safety. All lifts must have a manual means of deployment in case of power failure. A maximum capacity of 1,000 lbs. is suggested.

Platforms should be of open mesh metal construction with side roll-off barriers of 2" minimum and a front loading/barrier plate of 3" minimum. Attendant handrails are also suggested. Lift controls should be protected from the elements with a control cord long enough to control the lift from outside the vehicle.

## Safety

Wheelchair passengers should be faced forward (even though this reduces seating capacity). Wheelchair securement devices should attach to the wheelchair frame rather than wheels. NCDOT utilizes cargo-type strap belts, installing a belt and track system which attaches to the wheelchairs at four (4) points on the wheelchair frame. Passenger restraints should be independent of the wheelchair securement and NCDOT uses a three point independent passenger restraint providing both upper and lower torso belt protection.

Mr Garrity's comments generated the following discussions. No accidents have occurred with rear wheelchair lifts. The comment was made that facing sideways is not comfortable or safe for ambulatory passengers either. When asked about considering a moratorium on wheelchair lifts in vans, it was pointed out that while larger vehicles are preferable, they cost considerably more. Finally, in dealing with the chair itself, studies have shown high failure rate of wheelchairs but that is beyond the control of the transportation provider.

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SESSION COORDINATOR: R.V. (Bud) Giangrande, U.S. Department of Transportation, Transportation Systems Center, Cambridge, Massachusetts

SESSION REPORTER: Armando M. Lago, Ecosometrics, Incorporated, Bethesda, Maryland

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The Town Meeting format consisted of participants addressing questions and concerns to UMTA and FHWA officials and to some of the experts in the audience. The questions and their responses are presented next. Given the nature of these questions, most of these answers were provided by UMTA staff members.

Q. Some areas of the country do not have enough disadvantaged business enterprises (DBEs) to meet the ten percent target in the UMTA guidelines. Will they be able to get a waiver from UMTA regarding the DBE provision?

A. An UMTA official answered that if an area cannot meet the 10 percent DBE target, it should provide UMTA with a written response documenting the reasons for failing to meet the target. In addition, the Section 18 grant recipients may set a lower target documenting this lower figure.

Q. Is there any difference between the treatment of purchases and contracts with regard to the ten percent DBE requirements?

A. No, the ten percent DBE requirements are applied to goods and services through the Section 18 grant, except transit vehicles, as defined in the DBE regulations.

Q. Given that most Section 18 grantees participate in human services related activities sponsored by the Department of Health and Human Services (HHS), can UMTA and HHS coordinate their rules and guidelines?

A. A cooperative agreement to coordinate has been signed by UMTA and the Administration on Aging (AoA), but the other HHS agencies have not yet participated in such agreements.

Q. How is the ten percent DBE requirement applied in the purchase of vehicles?

A. The manufacturer must be certified by DOT and must submit a goal/target for the DBE requirement to DOT.

- Q. Who is responsible for the certification of the vehicle -- UMTA or NHTSA?
- A. UMTA is responsible for the certification. It is not a safety certification.
- Q. Couldn't the Section 18 grantees simply add to the specifications in the bids for purchasing vehicles that the manufacturer must meet the ten percent DBE requirement and let the manufacturer deal with this requirement directly with DOT?
- A. A manufacturer answered that they see no problem with this approach and that they will comply with these specifications in the bids by securing the required certifications from DOT.
- Q. Why do the ten percent DBE guidelines apply only to Buy America purchases and not to foreign purchases? The DBE provision discriminates against domestic manufacturers.
- A. There is no discrimination against domestic manufacturers. The purchases of foreign equipment have to meet other requirements and certifications (such as assembly in the U.S.). There is a balance between the requirements that foreign equipment purchases must meet and the purchase of equipment from domestic sources.
- Q. On the transition date of October 1, 1983, many Section 18 programs will be in mid-contract. It is the questioner's understanding that those contracts will be administered by FHWA until they close. Is there coordination between Regional and State FHWA and the Boston Region I UMTA staff on those contracts?
- A. UMTA will take over all the ongoing contracts at the transition date.
- Q. Must an opportunity be given for a hearing on an operating assistance grant? The Circular is still unclear on this point with its reference to Section 3(d)(1). Section 3(d)(1) refers to capital grants, but not to operating assistance.
- A. The opportunity for a hearing applies only to capital grants.
- Q. Will the state's Section 18 Letter of Credit be for the full amount obligated or only for the amount certified as Category A?
- A. The Letter of Credit may cover the full amounts obligated. However, the state can only draw down funds on that Letter of Credit for projects in

Category A\*. The total amount obligated will be made available. UMTA is switching to a faster letter of credit system based on electronic funds transfer. Under that system, the states will be asked to estimate their funds to be expended during the year and that amount will be the level put in the Letter of Credit.

Q. When will UMTA share with us its calculation of 1983-84 state apportionments?

A. The state apportionments are already available. They will be posted in the reception area at the close of this meeting.

Q. A Section 18 operator's charter bus service has been challenged by a private operator in our state. In this charter bus conflict, a hearing was performed because the Section 18 charter operations went outside the service area. Who has the responsibility for deciding on this issue of charter bus conflicts: UMTA or the state?

A. The issue should be decided jointly by the state and UMTA in consultation with the UMTA regional offices. The state should submit this issue as soon as it arises to the UMTA regional counsel.

Q. If the Section 18 operator wants to provide bus charter service beyond the service area and exceed \$15,000 in revenue from charter services, can he make one combined application for waiver or license on all the deviations?

A. Yes, he should apply once for license on all the deviations he proposes.

Q. Can a Section 18 operator provide charter service which exceeds the UMTA regulations when there is no competing operator providing that service? An example is in the provision of wheelchair transportation service, which many private operators do not offer.

A. If the Section 18 operator exceeds one of the charter service limitations (such as peak-hour service, going beyond its service area, exceeding \$15,000 of charter revenues per year, etc.) he cannot provide the service.

Comments from the audience emphasized the fact that some of the charter limitations -- such as the peak-hour limitations -- were adapted from the urban projects and that do not make sense in rural areas. A different set of UMTA rules needs to be put together for rural areas or some flexibility needs to be shown by UMTA in interpreting these rules as they apply to the Section 18 projects.

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\*Category A includes those projects certified by the state as having met all the statutory and administrative requirements for project approval. As such, the approval of the annual program of projects allows the state to start drawing from funds for implementation in Category A.



Q. Is there any distinction made between contract operations (such as contracts with human services agencies) and charter operations?

A. The distinction between them is ambiguous. Rules need to be developed covering this topic.

Q. Several properties would like to form a Bi-State Transit District. Has anyone done this previously under FHWA?

A. Bi-State Transit Districts are present in St. Louis and in the Tahoe area among several others. Their formation requires a special application for a waiver to the Interstate Commerce Commission (ICC). This application for waiver is simple, a short 3-page application, and in these days of deregulation, the ICC waiver is almost automatic.

Q. Under UMTA's stewardship, what technical assistance would be available for planning and implementation?

A. States may use an amount not to exceed 15 percent of their Section 18 funds for administration, planning and technical assistance. The Section 18 grantees should check with their state first since the states have been given funds to provide for technical assistance. They should be used.

In addition, Section 8 funds may also be used to provide technical assistance or planning assistance.

Q. Do Section 18 operators have discretion in transferring funds from capital to operating assistance?

A. UMTA places no restrictions on the use of Section 18 funds. They may be used for any eligible activities with no limitation on the level of capital or operating assistance. The one exception to this is FY1983 funds from the Mass Transit Account of the Highway Trust Fund. These funds can only be used for capital projects. The limitation on operating assistance is only currently extended to urbanized areas.

Q. Once allocation to states is made, what constitutes "fair and equitable distribution of funds within the state?" Are there any guidelines? Is it completely up to the individual state? If as we believe, UMTA leaves this to the discretion of states, what recourse does the Section 18 operator have to appeal state procedures or even allocations? How do most states handle the allocation process? Are there any plans for state DOT's to transfer information and standardize source practices regionally?

A. This issue was discussed in one of the workshops. UMTA will not publish formulas and solutions that fit each condition. An example of UMTA's role in the issue of fair and equitable distribution is provided by its role in the Section 9 urban programs, whose distribution is resolved at the state level. If there are conflicts, UMTA may bring the parties together, but mediation is its only role.

The allocation processes differ by state. In Oregon the allocation of capital grants are discretionary, while operating assistance is distributed on a formula basis.

- Q. In the FHWA guidelines on Section 18, an item labelled "profit" is an allowable cost. Is there an explanation of this?
- A. If the Section 18 service is provided by a private operator on a contract basis, then their fee or profit is an allowable cost.
- Q. What is the policy regarding unspent balances in Section 5 and Section 9A programs? Can these Section 5 funds be spent earlier and when they are exhausted can we begin spending the Section 9A funds?
- A. All across the nation this year, UMTA was encouraging the programming of Section 9 (and not Section 5) money before spending Section 3. However, this may change. It is important to re-state that the Section 18 grantee will have funds available to spend to the full authorized level.
- Q. How can a state receive a larger allocation of Section 18 funds going to the state? Can state appeal the allocation to states?
- A. The Section 18 funds are distributed to states on a statutory formula based on population. You may apply to Section 3 to supplement the Section 18 allocation, but a state cannot get more Section 18 funds than the formula appointment allows.
- Q. Can the Section 18 transit organization isolate vehicles and expenses outside of Section 18 to bid for schoolbus transportation?
- A. Yes, but they have to isolate these expenses and equipment.
- Q. Please discuss "in-kind" contributions as local match for Section 18 funds.
- A. In-kind contributions which have been accepted by FHWA as local match will be honored by UMTA, but they must be clearly documented. In-kind contributions can only be used as match against the relevant assistance category. For example, in-kind contributions of volunteer drivers can only be used as match against operating assistance funds. Similarly, capital equipment contributions can only be used as match for capital assistance.
- Q. May income earned through purchase of service contracts be used as local match, regardless of sources?
- A. The previous FHWA practice will be accepted by UMTA. The FHWA policy has been to accept the states definition of income or revenue earned. A comment from the audience referred to the fact that Title XX used to be acceptable as local match, but now that Title XX has become a block grant it is unclear what the policy is regarding its acceptability as a local match. UMTA is reviewing whether these funds must be used as the local cash portion of the match or must be used as the unrestricted Federal portion.

- Q. Regarding Title III funds, can they be used as local match?
- A. Titles III, XX, and others were permitted by the funding agencies to be used as the unrestricted Federal funds portion of the local match, and UMTA is going to follow the same practice. A comment from the audience asked the Federal agencies to get together on the problem of what funds may be accepted as local match. The Department of Health and Human Services differs from FHWA on some of these items used for local matching purposes.
- Q. UMTA officials stated that they propose to take two more weeks for review of the UMTA guidelines distributed on the first day of the conference, and requested the participants to phone with their comments. UMTA does not want to establish a formal procedure for receiving comments to the new set of guidelines as this would delay their publications. Given that all of the earlier comments were incorporated into the new set, they asked the participants whether they thought a formal process for receiving comments was needed.
- A. The audience replied that informal comments by phone or letter would suffice, that there was no need for an elaborate formal review process.

An UMTA official announced that the Section 16(b)(2) regulations would be mailed on August 20, 1983 and that comments were required by September 15, 1983. The participants were asked to check for inconsistencies between the Section 18 and the Section 16(b)(2) guidance.

WORKSHOP COORDINATOR: Peter Schauer, Peter Schauer Associates

WORKSHOP REPORTER: Robert Tice, Older American Transportation Service  
(OATS), Missouri

WORKSHOP SPEAKERS: Authur Saltzman, University of California, Irvine  
Terry Young, Brazos Valley Transit, Bryan, Texas  
Linda Wilson, JAUNT, Charlottesville, Virginia  
Robert Issacs, Mid-Cumberland Human Resources Center,  
Nashville, Tennessee

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Peter Schauer presented an overview of personnel productivity, emphasizing the role of managing human resources to avoid common pitfalls such as employee burnout.

Arthur Saltzman: "Planning for Personnel and Good Labor Relations"

There are two basic and distinct qualities impacting performance -- ability and motivation. All people enjoy a level of ability and are capable of developing skills through training and experience. The key to productivity is motivating people to use/improve their ability in support of the enterprise.

Linda Wilson: "Patronage Goals and Personal Management"

Linda Wilson provided a transit operator's perspective of managing personnel to improve productivity. Applicant screening, training, and supporting employees is very important in managing personnel. From past experiences, it has been her practice to:

- 1) hire selectively,
- 2) orient and train thoroughly,
- 3) provide adequate employee benefits,
- 4) carry out goal oriented evaluations, and
- 5) set improvement goals for unsatisfactory performers.

Ms. Wilson shared her experience with goal oriented evaluations in which goals are identified, assigned a weighted factor, and used in written evaluations to motivate workers. Rewarding productivity and good communications are key factors in making the system work. As a result of this personnel evaluation procedure, JAUNT now has consistently high performing driving staff, excellent morale (the result of knowing where one stands), low accident rates, and significantly lower staff turnover.

Terry Young: "Recruiting, Hiring, and Training Drivers: Results of a Survey and Model Approach"

Terry Young has conducted an extensive survey and developed a model oriented to "risk management" in the driver selection process. Risk management has been defined as "planning, organizing, directing and controlling the resources and activities of an organization to minimize the adverse affect of accidental losses on that organization and keep those losses to the least possible cost." In the transit industry, risk management includes procedures designed to reduce accidental death and injury such as driver selection and training, vehicle maintenance, accident reviews, safety meetings, vehicle selection, and scheduling. Mr. Young's presentation concentrated on one aspect of risk management: driver selection. His model identified nine key elements of driver recruitment which can aid in risk management: application, age requirements, testing (written and operating), criminal record check, driver records check, reference check, physical examination, licenses, and training. Within each of these elements, suggestions were made to improve the driver selection process and, thus, lower risks to the transit operator.

Robert Issacs

Robert Issacs summarized the discussion with emphasis on the ability to monitor personnel processes and fine tune the system.

WORKSHOP COORDINATOR: Frank Sherkow, Iowa Department of Transportation

WORKSHOP REPORTER: Daniel Blankenship, Durango LIFT Co., Durango, Colorado

WORKSHOP SPEAKERS: Berenda Cason, Texarkana Human Development Center, Texarkana, Texas  
Daniel Evak, Wilkes-Barre, Pennsylvania

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Berenda Cason: "Financial Management - The Woolly Mammoth"

Berenda Cason reviewed some of the problems of financial management and then presented a description of the financial management system used by her agency.

Major problems facing many transportation systems include how to:

1. develop an accurate accounting system,
2. calculate costs and project future costs,
3. recapture costs,
4. develop an equitable accounting system, and
5. develop an understandable accounting system which is easy to administer.

Programs that do not solve these problems and develop a workable system face extinction.

The financial management and billings system used by the Texarkana Human Development Center was developed in increments. The system has the following elements.

1. It estimates cost patterns and develop fares that recover all costs.
2. It attaches funds to trips -- where the funds disappear for certain trips, the trips are eliminated.
3. Trip charges are based on time and distance factors.
4. Charges are computed in the same manner for all agencies according to a zone formula.

The center's costs are projected on a six-month basis to include inflation. A figure for cost per mile is calculated by dividing the previous six months' mileage into projected costs. It should be noted that costs for the inner-city trips have been fairly consistent. Using cost per mile, fares are eventually calculated on a zonal per trip basis as follows:

innercity - Zone 1	=	\$3.60
25 mile radius - Zone 2	=	\$4.81
25-49 mile radius - Zone 3	=	\$8.71

Zone 1 is the most heavily used and the price may be somewhat overstated -- those trips may be subsidizing longer trips to some extent. The actual bills to agencies include a breakdown of the percent client trips to the percent of total income generated by those trips.

When the accounting system for the rural area was first set up, it was adapted from the urban system's accounting procedure by rearranging some functions. The questions asked during this adaption process included:

1. Is it possible to borrow or adapt the urban approach?
2. Is there a better way to set the system up?
3. Can it be given a new twist?
4. Can the functions be rearranged?

Daniel Evak: "Financial Management - Its Relationship with Operating Performance"

Mr. Evak reviewed the background of his project to simplify accounting at the United Services Agency, discussed the information system which they developed, and outlined the technical assistance resources available through their grant.

Financial accounting should be tied to operation and performance. Financial management is important but productivity may make the difference between success and failure. Accounting and management should allow managers to make decisions which improve productivity. There are four components of accounting:

1. bookkeeping - recording revenue and expenses
2. financial accountability - providing verification/audit data
3. billing - producing correct and equitable charges for service rendered
4. program service accountability - verifying eligibility of clients and services provided to them.



Further, a coordinated system needs a mechanism to track the costs of service providers and to allocate those costs among participating agencies. The aim of their project was to find the best method of allocating costs on a unit cost basis. In 1980, the Pennsylvania Department of Public Welfare received a grant to perform research on unit costing, develop a management information system manual, and transfer findings throughout the country. The research component of the project was stimulated by a very common complaint from integrated transportation systems -- a perceived inequity in cost sharing among participating agencies. Attempts on the part of funding sources to alleviate their cost allocation concerns have meant imposing extensive and unrealistic reporting requirements on providers. It has now been recognized that a standard unit of service measure may satisfy many of the reporting requirements but still be simple, easy to use, and equitable.

The study undertaken by the United Services Agency Transportation Project staff for the Department of Public Welfare considered four unit of service measures:

- one-way passenger trips,
- passenger miles,
- passenger time, and
- passenger time/passenger miles combination.

The research considered which of the above methods was administratively expedient, least costly, and equitable for cost distribution. Each method, if left unmodified, reflects shortcomings in a fair and equitable distribution of costs. However, the one-way trip measure is least costly, most accurate and the simplest procedure for gathering data. The research suggested that trips be weighted for varying lengths by utilizing a trip or run identifier and establishing a mileage standard for each identifier which allows for the subsequent conversion of "one way passenger trip" data into passenger miles. The above combination approach was tested and installed at several transfer sites with various settings and in automated as well as manual modes.

Mr. Evak also provided the workshop participants with a summary of the Accounting Consortium survey findings which was applied to providers in six

states. On bookkeeping, the survey found a wide variety of accounting systems with unnecessary paperwork and duplicative requirements. Billing procedures were often not equitable, with rates not reflecting the true cost of service. Financial accountability systems were not uniform and audits were difficult to conduct. The fact that the client eligibility certification process is too cumbersome often led to a lack of coordination among funding sources.

WORKSHOP COORDINATOR: James Miller, Pennsylvania State University

WORKSHOP REPORTER: James Grier, Pennsylvania Department of Transportation

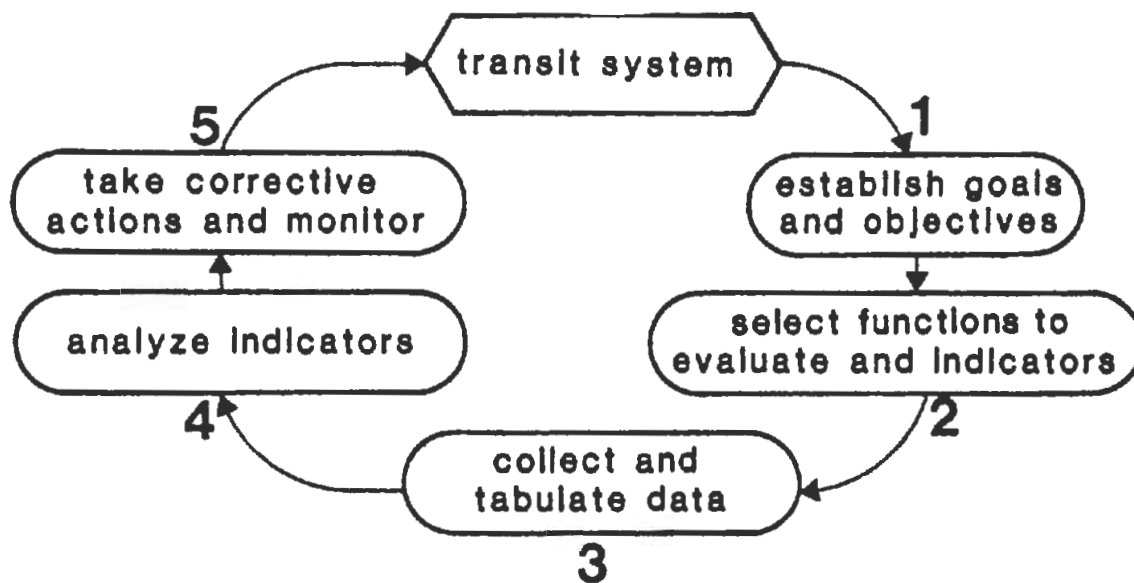
WORKSHOP SPEAKERS: James Miller, Pennsylvania State University  
Linnea McCaffrey, Beaver County Transit Authority in Pennsylvania  
David Cyra, University of Wisconsin, Extension, Milwaukee

James Miller

Carter-Goble Associates, along with James Miller were contracted by the Pennsylvania Department of Transportation to develop a "Rural Public Transportation Performance Evaluation Guide". PennDOT decided it needed a management tool for the project managers of Section 18 projects. It was developed as a self-help evaluation methodology. Performance standards are not mandated in Pennsylvania.

The following flow chart shows the procedure recommended for use by the project managers.

**PERFORMANCE EVALUATION STEPS**



The consultants and PennDOT started with approximately 100 indicators. These were then broken into primary and secondary indicators with the primary indicators broken into financial and non-financial indicators. Financial indicators (i.e., cost/mile or hour, revenue/mile or hour, cost recover, etc.) were the predominant factors of the final report. Definitions for all variables were provided to insure consistency.

Indicators are to be used to evaluate one's own system on a year-to-year or quarter-to-quarter basis and should meet local goals and objectives. The indicators should also be used in policy making as well as a review of the day-to-day operations. But when providing indicators, only give the essential ones.

Although there are no state mandates for projects to utilize these performance indicators, Pennsylvania does use three indicators in determining bonuses for state funding. These are revenue per hour (or per mile), passengers per hour (or per mile), and deficit per passenger. The manual also provides data from systems in other states as well as all the Section 18 projects in Pennsylvania.

For systems in Pennsylvania, there was no way to determine a standard value for each performance indicator, so they should be used only as a guideline and not a standard. Some states have used plus or minus one or two standard deviations as acceptable ranges for certain indicators. In Pennsylvania, the Section 18 projects are too diversified (i.e., fixed route rural, fixed route small urban, demand responsive, brokered agency oriented, etc.) to develop standards.

#### Linnea McCaffrey

In reviewing and analyzing the efficiency, effectiveness and equity of your system the numbers generated by the operations are not the only factors to consider; you must weigh the intangible factors also. These could be the importance of a route politically, the need for the service (medically) or the desire to use the route as a marketing tool. The Beaver County Transit Authority (BCTA) has a small staff that subcontracts for urban fixed route service and urban and rural demand responsive service. Much of the fixed route service is more cost efficient and therefore helps offset less efficient but politically necessary demand responsive service.

BCTA uses an Apple II computer to summarize and analyze data. Analysis of demand responsive service draws heavily on elderly ridership, with significant agency ridership and very few general public riders. The primary reason is Pennsylvania's reduced fare program for the elderly. Fixed route service is also available for the general public.

David Cyra

The extension office of the University provides technical assistance to municipalities and local agencies. To help in evaluating transportation in Wisconsin, two areas were chosen as case studies. Eau Claire is a small urban system which operates fixed route service with 15 vehicles and a staff of 40. The second area was Walworth County, which is an agency program for seniors and handicapped individuals.

Performance indicators were collected and compiled for use by the agencies and other state or local bodies for purposes of comparative information; the state does not require particular levels of performance for funding. These statistics are available from Mr. Cyra.



# 3

## CONFERENCE EVALUATION

### OVERVIEW

The following evaluation is based upon the conference evaluation forms returned by participants. Unfortunately, only about 15 percent of the participants completed a form, but those that were completed provide a wealth of information on how the conference could be run in the future. A summary of the evaluation forms is attached for reference at the end of the chapter.

The overall response to the conference was positive. Participants found the sessions useful and informative. They rated this rural conference "as good as" or "better than" others they have attended.

General comments indicated that participants thought the theme of the conference important and timely and found the conference comprehensive and well organized. Only one person thought the conference was too long. Suggestions were made to hold the conference yearly.

In terms of logistics, participants suggested that something be done to hold participants until the last day -- closing with a general wrap-up or moving the Tuesday evening social events to Wednesday evening. The biggest complaint from participants was that the sessions often did not start on time; a number of suggestions were made for how to keep the sessions on schedule. Suggestions were also made 1) that the phone number on the mail-out brochure be the phone number where messages would be taken for participants and 2) that there be better coordination between the conference and hotels. Participants thought the shuttle transportation at the conference was terrific.



## EVALUATION OF SESSIONS/TOPICS

When asked to rate each general session and workshop, participants found the sessions useful and informative. A summary of the conference evaluation forms appears in Appendix D. Remembering that different numbers of persons rated the various sessions, the sessions found most useful, according to the average of the responses received, were the general sessions on Legislation, National Organization and the Federal Perspective and the Opening Session and the workshops on Productivity and Efficiency and Effectiveness Evaluation and Working with Local Elected Officials. The least useful sessions included the general session on Rural America and Public Transportation, Trends and Outlook and the workshop on Financial Management.

Of topics presented, participants found Revenue Enhancement and Sources, the Town Meeting, and the sessions on productivity issues most interesting. The interest in these topics is consistent with the desire on the part of participants both to better understand the new Section 18 guidance and to explore the theme of the conference, increasing productivity. Unlike other years, participants seemed less interested in management and operational issues and more interested in laws, regulations, and productivity.

Comments on the logistics of sessions included wanting more operators and more women as speakers and session leaders. Some participants felt the program unduly emphasized white males and state or Federal government staff. Some participants wanted to see more information presented from the perspective of the operator and some suggested making workshops less presentation-oriented and more discussion. Comments suggested that participants would have benefited from some sessions which went into one topic in more depth or in a debate or problem-solving mode.

Most participants felt that adequate time was allotted to each session, although some felt that more time was needed in the session on revenue enhancement. In only a few cases did participants feel that there was too much time or not enough material in a session. Almost all respondents liked the idea that workshops were repeated, since this arrangement allowed them to attend more sessions.

Most participants felt there was ample time for them to interact with authors and presentors. Suggestions for further facilitating this interaction included keeping presenter comments to a minimum to allow for questions, starting sessions on time, giving more time for breaks and sessions organized into smaller groups.

Suggestions for modifications to sessions included giving more time to some sessions, modifying the session on computers to include demonstrations of hardware, software and data, and having fewer workshops with more in-depth coverage of each topic.

Many topics were suggested as additions to the program, ranging from public policy interests relating to rural transit to topics oriented on operations and maintenance issues. One interesting suggestion was to provide more information on service alternatives which could be used to correct the performance problems once identified.

#### EVALUATION OF FACILITIES/LOCATION

Participants generally indicated that conference facilities were good. Rooms for sessions, workshops and group meetings were rated as good, as were the banquets and the transportation services. Other dining facilities were rated as O.K., with the residence halls rated as poor.

Participants overwhelmingly agreed with the objective of providing meals, accommodations and facilities at the lowest possible cost to encourage participation. Many felt that other more expensive arrangements should be available to those who can afford it. Some people felt that the accommodations were particularly spartan at this conference and would have appreciated notification of this in advance.

Many suggestions were made for where to hold the next conference, including places in the South, West, Midwest, Northeast and mid-Atlantic.

#### SUMMARY

While participation at the conference was high in relation to other years, it could have been even higher and more diversified if individuals had more advance notice. In particular, it may have been possible to attract more local operators and more vendors.

More attention should be paid to vendors' participation. Vendors need a more central place to display equipment. It may be useful in future years to arrange for a presentation by each vendor either during one of the sessions or during a break period.

The focus of the conference on one theme worked well and the particular theme of "productivity" was timely. If this type of arrangement is continued, it may be more appropriate for the conference to be held yearly to allow for discussion of particular issues as they are current.

Evaluations of sessions, comments and town meetings indicate a desire by participants to gain better understanding of Federal regulations and perspectives. Perhaps it would be useful to have one workshop on regulations run by the UMTA headquarters staff with questions and answers -- similar to the town meeting but as a regular small workshop so that if a question is raised it can be responded to in-depth. Finally, some participants also seemed to want more in-depth material on only a few subjects. This may indicate that there is a need for some training courses or more detailed activities on some specific areas.

A summary of the written responses on the conference evaluation form is provided in Appendix D.

## APPENDICES



APPENDIX A

SIXTH NATIONAL CONFERENCE AND WORKSHOPS ON RURAL PUBLIC TRANSPORTATION

CONFERENCE PLANNING COMMITTEE

CHAIRMAN

Robert T. Goble, Carter-Goble Associates

COMMITTEE

Jon E. Burkhardt, Ecosometrics, Incorporated  
Richard Garrity, North Carolina Department of Transportation  
Wm. Campbell Graeb, Transportation Research Board  
David A. Lee, American Association of State Highway and Transportation Officials  
Alfred B. LaGasse, III, International Taxicab Association  
Ken Malkowski, Michigan Department of Social Services  
Douglas J. McKelvey, Federal Highway Administration  
Harold Morgan, American Bus Association  
Donald Nelson, Extension Services, U.S. Department of Agriculture  
Norman G. Paulhus, Office of the Secretary of Transportation  
Peter M. Schauer, Peter Schauer Associates  
Robert P. Schmitt, University of Wisconsin-Milwaukee  
Loretta E. Sharpe, Regional Transportation Program, Inc.  
Robert Stanley, American Public Transit Association  
Roger Tate, Urban Mass Transportation Administration  
Donald N. Tudor, South Carolina Division of Transportation  
William C. Underwood, Pennsylvania Department of Transportation





APPENDIX B

SIXTH NATIONAL CONFERENCE AND WORKSHOPS ON RURAL PUBLIC TRANSPORTATION

CONFERENCE CO-SPONSORS

- American Association of State Highway and Transportation Officials
- American Bus Association
- Community Transportation Programs, Extension Service, U.S. Department of Agriculture
- International Taxicab Association
- Office of the Secretary, U.S. Department of Transportation
- Rural America
- Transportation Research Board, National Research Council
- Urban Mass Transportation Administration, U.S. Department of Transportation



APPENDIX C

SIXTH NATIONAL CONFERENCE AND WORKSHOPS ON RURAL PUBLIC TRANSPORTATION

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P.O. Box 6004  
Bossier City LA 71111  
3182269120

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PO Box 651  
Dunlop TN 37327

Hilly, James  
Regional Transp. Program, Inc.  
237 Oxford St  
Portland ME 04101  
2077742666

Giangrande, Bud  
Transportation System Center  
Kendall Square  
Cambridge, MA 02142  
8002251612

Good, Edward  
Friendly Taxi  
32 N. Water St.  
Lancaster, PA 17603

Goulart, Thomas  
HRDC  
108 N Main St  
Enterprise AL 36330  
2053470881

Graham, Robert  
Wyoming Co Aging  
PO Drawer F  
Itmann WV 24847  
3042948800

Graves, Charles  
UMTA/DOT  
400 7th St SW  
Washington DC 20590  
2024262360

Gross, Laurence  
South Maine Senior Citizens  
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Portland ME 04101  
2077756503

Gwynn, Lorna  
LA Dept. Trans. & Development  
PO Box 44245  
Baton Rouge LA 70804  
5049257743

Harman, Lawrence  
Call-A-Ride  
P.O. Box 7  
Hyannis MA 2601  
6177752734

Henry, Mary  
Cullman Area RTS  
214 4th St SW  
Cullman AL 35055  
2057341241

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Cedar Rapids, IO 52401

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6033827377

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3013833697

Howe, May  
Elderservice  
39 Summer St  
Rockland ME 04841  
2075966605

Huntley, Dot  
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7046942596

Isaacs, Robert  
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Nashville TN 37203  
6153272133

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Durham, NH 03824

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Washington DC 20590  
2024269271

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1221 E Broad St  
Richmond VA 23219  
8047861722

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Columbia SC 29211  
8037652833

Knaus, William  
Colonial Texas/Paratransit  
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4128333300

Holly, Jim  
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Bloomington IN 47402  
8123343383

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3483 Rickenbacker  
Boise ID 83705  
2083343183

Hunter, John  
Cape Transit  
222 Old Chatham  
South Dennis MA 02660  
6173858326

Hurtubise, Leo  
METRO  
PO Box 1097  
Portland ME 04104  
2077740351

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2077839186

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7042642421

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8066752462

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4048817875

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Rockville MD 20852  
3018811333

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Transport. Informat. Exchange  
St Michael's College  
Winooski VT 05404  
8026552000

Leavitt, Arnold  
ME DOT  
Transport Bldg #16  
Augusta ME 4333  
2072892841

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7042642278

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2058325415

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BWI Airport MD 21240  
3018597351

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5173738059

Mann, Steve  
Blue Bird Body Co  
P.O. Box 937  
Fort Valley GA 31030  
9128252021

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Nashville TN 37215  
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9193382167

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Bryan TX 77801  
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4048942059

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2022256116

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4135452688

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2077641290

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8169265053

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8148867425

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Obion TN 38240  
9018851802

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4043531444

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2024472602

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8022290389

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3027381187

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Morristown NJ 07960  
2012856712

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9045262761

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8024791071

Pratt, Avram  
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2026592800

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W.C. Cressey & Son  
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2079856111

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Software Arts  
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Woburn MA 01801

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8176413321

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Irvine CA 92717  
7147529150

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Washington, DC 20590  
2024268880

Scanlon, James  
Rural Development Policy  
U.S. Dept. of Agriculture  
Washington DC 20250  
2023828352

Schauer, Peter  
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8168827388

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3013837061

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8019654141

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4135452688

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8042963184

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5268 NW 2nd Ave  
Des Moines IA 50313  
5152814299

Shuldiner, Cris  
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Amherst MA 01003  
4135452688

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Sargent, Fred  
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2028282800

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3123532865

Sharpe, Loretta  
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Portland ME 04101  
2077742666

Shearer, Jerome  
Beaufort Jasper RTA  
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Burton SC 29902  
8038464146

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NH Public Works & Highways  
Hazen Drive  
Concord MA 03301  
6032712564

Skibitsky, Eugene  
Western Maine Transport  
89 Congress St  
Rumford ME 04276  
2073642135

Spaulding, Willis  
East Transport Service  
153 Illinois Ave  
Bangor ME 04401  
2079475454



Spradlin, Jo Ann  
Red Cross Good Neighbor  
714 Union  
Coffeyville KS 67337  
3162517313

Stevens, Sally  
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2079475454

Stroud, David  
NJ Transit  
PO Box 10009, Market Street  
Newark NJ 07101  
2016482572

Teel, Mary  
WV Public Transit Division  
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3043480428

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DATS Inc  
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3144434516

Underwood, William  
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7177873921

Warren, John  
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2139061222

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APPENDIX D

SUMMARY OF CONFERENCE EVALUATION FORM



APPENDIX D

SIXTH NATIONAL CONFERENCE AND WORKSHOPS ON RURAL PUBLIC TRANSPORTATION

SUMMARY OF CONFERENCE EVALUATION FORM

Number of Forms Received (43)  
 Percentage of Attendees (15%)

1. Give overall rating to sessions attended.

	Highly Useful/ Infor- mative		Not Useful/ Uninfor- mative			Number of Responses	Weighted Average
	1	2	3	4	5		
GENERAL SESSION							
Opening Session	9	15	10	2	0	36	2.14
Legislation, Nat'l Organi. and the Fed. Perspective	12	17	8	2	0	39	2.00
Productivity and Performance	9	15	13	3	0	40	2.25
Revenue Enhancement & Sources	2	12	12	6	0	32	2.69
Alternatives for Rural Public Transportation Service Delivery	5	14	12	1	1	33	2.36
Rural America and Public Transportation, Trends & Outlook	2	8	16	2	3	31	2.87
WORKSHOPS							
State DOT Perspectives on Rural Transit Performance	4	9	6	1	2	22	2.45
Alternatives for Rural Public Transportation & Case Studies	7	9	7	3	1	27	2.33
Computers and Management Information Systems	4	4	7	4	1	24	2.25
Revenue Enhancement & Sources	5	3	6	0	2	16	2.44
Working with Local Elected Officials	5	8	5	0	1	19	2.16
Vehicles	2	5	5	2	1	15	2.67
Personnel Productivity	7	3	1	3	2	16	2.38
Financial Management	1	3	4	2	0	10	2.70
Productivity & Efficiency and Effectiveness Evaluation	3	6	5	1	0	15	2.07

2. Topics found most interesting

Revenue Enhancement and Sources	9
Town Meeting	9
Productivity, Efficiency, Effectiveness Evaluation	8
Alternatives for Rural Public Transportation Service Delivery	7
Personnel Management	7
Productivity and Performance	6
Working with Local Elected Officials	6
Legislation, Nat'l Organi. and the Fed. Perspective	5
Computers and Management Information Systems	5
Opening Session	2
State DOT Perspectives on Rural Transit Performance	2
Rural America and Public Transportation, Trends & Outlook	1
Vehicles	1
Financial Management	1

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3. Topic

a. Topics that should be added

Rural/urban line interface  
Operations  
Vehicle durability and performance  
Maintenance performance  
Vehicles - procurement and maintenance practices  
Maintenance facility feasibility and cost effectiveness determination technique  
Safety  
Insurance  
National and state local government  
Public policy interests relating to rural transit  
Intercounty transportation  
Regional UMTA role  
Public (not social services) transportation - how to  
Process of developing system from scratch  
Performance indicators for non operational aspects such as brokers  
Generic management, e.g., time management, short range planning; lobbying  
Marketing/promotion (2)  
Scheduling  
Bus stops and shelters  
Priority treatment  
Political barriers  
Seasonal problems  
Social service funding  
More descriptors of service alternatives to correct performance problems  
Specific revenue sources  
Standards in industry for effectiveness  
More town meeting type of format on specific subjects  
Contract and labor negotiations

3. Topic (continued)

b. Topics that should be modified

more on perspective of operator  
last general session on outlook should have been broadened to include futuristic (1)  
computers - case studies and hardware (4)  
computers - specify data and software (2)  
computers - simple or more complex (2)  
make workshops less presentation and more discussion (1) "tracking" of workshop sessions so series of workshops in 3-4 broad areas would cover in more depth each topic (1)  
local elected officials - more time (1)  
personnel more time (1)  
town meeting - more time (1)

c. Topics that should be deleted

trends in Rural America (3)  
state DOT perspectives  
the case study (1)

---

4. Adequate time allotted for each session

a. Yes (25)  
No (13)

b. If No, which sessions

revenue enhancement (5)  
all (2)  
personnel productivity (2)  
second general sessions (1)  
productivity and evaluation (1)  
case studies (1)  
alternatives (1)

---

5. Too much time/not enough material in any session \*

a. Yes (11)  
No (19)

b. If Yes, which sessions

need more hand outs (3)  
trends (2)  
performance evaluation (1)  
computers (1)

---

\*There appeared to be some confusion on what this question was asking.



6. Ample time for participants to interact with authors/presentors

- a. Yes (23)  
No (12)

b. If No, what would have facilitated this participation?

keep presenter comments to minimum (7)  
start on time (6)  
allow breaks more time (3)  
smaller groups (3)  
allow questions after each presentation (3)  
more time/session (2)

---

7. Like repetition of workshops or prefer each workshop longer or different ones offered

- a. liked repetition (29)  
disliked repetition (4)

b. Comments

allowed them to attend more (8)  
workshops should be longer and more detailed (2)  
would like to attend all not 2 of 3 (1)  
would like more "hands on" (1)  
would be even more crowded (1)  
workshops too formal/smaller groups (1)  
would be good if less popular work not repeated (1)

---

8. Attended other rural conferences

- a. Yes (12)  
No (27)

b. Other conferences attended

Arcata (4)  
Vail (3)  
Pennsylvania (2)  
State and regional (1)  
Arlington (1)  
North Carolina (1)  
Houghton (1)  
Miami (1)  
MIT (TRB Summer) (1)  
Phoenix (1)  
Charlottesville (TRB Summer) (1)

9. Comparison of this rural conference with others attended

Very Good (3)  
As good as (3)  
O.K. (2)  
Well Run & Well Organized (2)  
Well Satisfied (1)  
Favorably (1)  
Top Quality (1)

---

10. Rate facilities use at conference

	Excellent	Good	O.K.	Poor	N.A.
General Sessions	11	18	9	2	0
Workshops	7	19	11	4	0
Group Meetings	8	13	6	1	1
Banquet	9	17	8	2	0
Other Dining Facilities	5	11	14	4	0
Residence halls		3	7	10	9
Other:					
Transportation	3	2			
Night Life	1				
Scenery		1			

---

11. Agree with objective of providing meals, accommodations and facilities at lowest possible cost to encourage participation or would have preferred more lavish and expensive accommodations

a. agreed (32)  
    disagreed (5)

b. comments

- efforts of organizers good
- food and rooms not first class but no one suffered
- should have been notified what USM would not provide
- price was reasonable on campus but past experience on campus was not like "camping out" as done here
- not necessarily lavish but certainly less spartan - real beds and bath
- would prefer the option of more comfortable lodging within walking distance of site
- phone in room important - a little more lavish with private bath would have been nice
- let's have a convention center atmosphere next time
- accommodations though spartan, were adequate
- accommodations were adequate, but would like to know in advance that they were spartan
- excellent objective - obviously successful (those are loaded questions)
- Vermonters appreciate the cut-rate approach

11. continued

- somewhere between USM and "lavish/expensive" where they exist, state-owned conference center or parks
- like the cost - keep it low
- objective good but some basic amenities would have improved accommodations (room phones, extra blankets, wake-up service)
- people can afford more expensive facilities once every few years. If they can't, assistance could be provided from \$ raised from registration fees
- lavish is always available to those who wish to participate
- I like this emphasis.... not all systems can afford expensive conferences. There are plenty of hotels nearby for those who so desire
- agree with objective but level of accommodations should be stated in advance
- agree with objectives, but other facilities should be available for those who can afford (5)
- agree/having conference at expensive location would be very poor idea
- no "living room" space, facility dirty and beat-to-hell
- accommodations could be upgraded without jeopardizing attendance
- accommodations were adequate but accessibility to recreational facilities was restricted due to distance
- after initial shock, the openness of the setting and availability of basic necessities were very acceptable
- transportation arrangements should be scheduled, announced and clearly posted at events and sessions.

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12. Recommendation for location at next rural transportation conference.

Location:

SOUTH

North Carolina (3)  
Charleston, S.C.  
Georgia  
Lower Atlanta Coast  
West Virginia  
South Carolina (2)  
South  
Mid South

NEW ENGLAND

Maine  
Western Pennsylvania  
Newport, Rhode Island  
Goddard College in Plainfield, Vt.  
Vermont

MIDWEST

Aspen or Vail  
Minnesota  
Lower RioGrande Valley of Texas  
Durango, Colorado (2)  
Hannibal, Missouri  
Mid West  
Salt Lake City, Utah

WEST

Oregon (1)  
Washington State (3)  
Nevada  
Montana  
Denver, Colorado (2)  
Chicago or Cincinnati or St. Louis  
West Coast or Mtn. Area (Oregon State U.)

ISLAND

Puerto Rico  
Hawaii

MID ATLANTIC

Mid Atlantic, Wash. D.C. (2)  
Regional capital in rural state  
Seven Springs, Champion, Pennsylvania

GENERAL COMMENTS

Middle of Country  
in rural areas where efficient, well coordinated systems could be explored and examined  
Central/Mid East Rural Community  
Someplace more centrally located (2)  
Central USA

13. Besides conferences, other methods of information dissemination

- newsletter (6)
  - computerized teleconference
  - technical training seminars/within affinity group maybe 1 day, 1 subject (5)
  - consultants
  - regional and national transit associations
  - UMTA regional conference on a reg. basis (4)
  - publication of selected papers from conference
  - studies of urban to rural migration
  - pay for papers or other publications
  - practical "how to do it" material with references for further study (2)
  - methodology sharing and clearinghouse (3)
  - hot line for quick answers to operations problems (2)
  - through mail
  - meeting of brokerage operators
- 

14. Comments/suggestions

- hold conference yearly
- more operators as speakers
- more audience participation and less lecturing
- move Tues. p.m. activities to Wed. p.m. to keep people around
- very well done
- UMTA staff did not circulate/were not accessible to general attendees
- phone # on early brochure should be same phone # to leave messages
- surprised not more questions from participants re: fed. gov't policies
- I enjoyed the conference
- the shuttle transportation was terrific
- the sessions were organized, well planned and the presentors great
- the town meeting was a good idea should have been publicized more
- UMTA and operators too far apart - need some better understanding of guidelines and regs - state personnel not briefed on UMT A regulations
- the speakers were very poor, difficult to understand, monotone, boring.
- professional speakers should be used. Material used was not quality; it appears that none of it was screened
- I was taken aback by the no. of state/fed. people as opposed to the no. of operators present. The conference in no way adequately addressed the real needs of the rural public operators
- overall an excellent conference... sessions should start on time
- better coordination between conference and hotels was necessary otherwise a great conference. I appreciate your efforts
- could have added a grant writing skills workshop and smaller problem solving sessions
- town hall good idea and should be continued - could add occasional debate format rather than presentations
- overall it was an excellent program and those responsible should be proud of their accomplishments
- close conference with general session or social event to hold interest and participation
- give listeners an option of general sessions

14. continued

- group management/personnel sessions in days 1 & 2; other materials days 3 and 4
- short background on presenter would be helpful
- appreciate the open session so operators/managers may attend state workshop sessions and vice versa - gives each an awareness of others problems
- vendors needed time on the agenda
- classroom for workshops were too small, too hot
- more women should have been asked to speak and to chair general sessions (too many white males).
- standard should be placed on each speakers ability to effectively present their topic orally
- very good overall - conference location excellent. Handled professionally. Some conference personnel went beyond the call of duty. thank you.
- Too many workshops started late. Need more small group brainstorming and reporting to total group, more involvement of operators
- More problem-solving workshops; fewer, slightly longer workshops which permit participation. General session should be shorter - keep tight rein on time allotted in all sessions
- conference is too long
- like idea of time off for recreation but should shorten it or eliminate free time and let attendees choose the sessions to miss
- theme was very timely, comprehensive program
- town meeting needs to be played up and take place earlier in conference
- no women general session leaders - presentors were predominately white males - need to integrate minorities and women
- need more leadership given to women
- generally, I believe the conference was well received, informative and beneficial to all participants
- perhaps you could have a 5-day conference which would offer concentrated training in specific areas (computer/accounting, regs) where participants could select one topic and spend whole week on it
- general session did not stimulate participation or interaction - why not load workshop up front - general session at end when people burned out.

APPENDIX E

BIBLIOGRAPHY OF MATERIALS DISTRIBUTED BY  
THE CONFERENCE RESOURCE CENTER

U.S. DOT OFFICE OF TECHNOLOGY AND PLANNING ASSISTANCE





APPENDIX E

BIBLIOGRAPHY OF MATERIALS DISTRIBUTED BY  
THE CONFERENCE RESOURCE CENTER

U.S. DOT OFFICE OF TECHNOLOGY AND PLANNING ASSISTANCE

ACTION, Transportation for Older American Volunteers. Prepared for Older American Volunteer Programs, November, 1982.

Airport Ground Transportation Problems and Solutions. Conference Proceedings from "Airport Ground Transportation Problems" held in San Diego, California. Ray A. Mundy, (ed.), February 23-24, 1981.

Albright, Richard, Microcomputers in Transportation Selecting a Single-User System. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, May 1983.

Baksa, Eugene J. Jr., Frederick J. Wegman, and Arun Chatterjee, The Use of Radio Communications in Rural Transportation. Prepared for Bureau of Mass Transit, Tennessee Department of Transportation, August 1980.

Bowman, Mark A. A Uniform Transit Safety Records System for the Commonwealth of Virginia. Prepared by the Virginia Highway and Transportation Research Council for the Virginia Department of Transportation Safety, Contract VHTRC 81-R39, February 1981.

Brown County Planning Commission. Financial Planning for the Green Bay Transit System. Prepared for Office of Policy Research, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-83-15, January 1983.

Carter-Goble Associates, Inc., Accounting and Reporting Practices for Transportation: An Analysis in Six States. Prepared for the Transportation Accounting Consortium, Sponsored by U.S. Department of Transportation, Volume 1: Final Report, March 1982.

Carter-Goble Associates, Inc., Accounting and Reporting Practices for Transportation: An Analysis in Six States. Prepared for the Transportation Accounting Consortium, Sponsored by U.S. Department of Transportation, Volume 2: Appendices, March 1982.

Carter-Goble Associates, Inc., Rural Public Transportation Performance Evaluation Guide. Prepared for the Bureau of Public Transit and Goods Movement Services, Pennsylvania Department of Transportation, November, 1982.

Dare, Charles E. Transportation Energy Contingency Plans for Rural Areas and Small Communities. Prepared for the Ozarks Regional Commission by University of Missouri-Rolla, December 1981.



Demetsky, Michael J., et al., Decision Procedures for Paratransit Market Selection and Service Evaluation. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT I-82-35, May 1982.

East Central Iowa Council of Governments, Uniform Data Management System: System Development and Testing. Prepared for Iowa Department of Transportation, September 1, 1980.

Ecoplan International and Multisystems, Inc., The European Paratransit Experience. Prepared for Office of Policy Research, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-14, October 1981.

Feiss, Carolina L. Vehicle Maintenance Practices Among 16(b)(2) Grantees. Prepared for the Washington State Department of Transportation, August 31, 1981.

Indiana University, Institute for Urban Transportation. Handbook for Management Performance Audits: Volume 1 - Theory and Technique. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, October 1979.

Indiana University, Institute for Urban Transportation. Handbook for Management Performance Audits: Volume 11 - Field Guide. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, October 1979.

Institute for Public Administration. Financing Transit: Alternatives for Local Government. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, July 1979.

Knapp, Sue, Hannah Worthington and Jon Burkhardt, Wisconsin Manual to Coordinate Elderly and Handicapped Transportation Services in Rural and Small Urban Counties. Prepared for the Bureau of Transit, Wisconsin Department of Transportation, December 24, 1980.

The Knoxville-Knox County Metropolitan Planning Commission, et al. 1982 World's Fair Transportation System Evaluation. Prepared for Office of Planning Assistance, U.S. Department of Transportation, Urban Mass Transportation Administration, Contract DOT-I-83-4, December 1982.

Meyer, Michael D. and P. Brendon Hemily. Public Transportation in the 1980's: Responding to Pressures of Fiscal Austerity. Prepared for University Research and Training Program, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-83-5, February 1982.

Multisystems, Inc., General Community Paratransit Services in Urban Areas. Prepared for Office of Policy Research, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-15, January 1982.

Multisystems, Inc., Paratransit for the Work Trip: Commuter Ridesharing. Prepared for Office of Policy Research, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-16, January 1982.

Multisystems, Inc., Paratransit In Rural Areas. Prepared for Office of Policy Research, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-17, April 1982.

Multisystems, Inc., Paratransit Services for the Transportation Handicapped. Prepared for Office of Policy Research, U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-18, April 1982.

Multisystems, Inc., Taxis, The Public and Paratransit: A Coordination Primer. Prepared for The International Taxicab Association, Final Report, August 1978.

Partners for Livable Places, The Way to Go. Prepared for National Endowment for the Arts Design Arts Program and U.S. Department of Transportation, April 1983.

Polytechnic Institute of New York, Transportation Training and Research Center. Transportation During the Next Energy Crisis: The Special Problems of Small Urban Areas. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-37, June 1981.

Proceedings of the First National Conference on Rural Public Transportation. Prepared for Office of University Research, U.S. Department of Transportation, D.J. McKelvey (ed.), Washington, D.C., October 1976.

Proceedings of the Fourth National Conference on Rural Public Transportation. Vail, Colorado, June 1979. Sponsored by U.S. Department of Transportation, Urban Mass Transportation Administration, September 1979.

Public Technology, Inc., Inflation-Responsive Transit Financing. Secretariat to the Urban Consortium for Technology Initiatives, Supported by U.S. Department of Transportation, Contract DOT-I-82-27, June 1982.

Rice Center, A Guide to Innovative Financing Mechanisms for Mass Transportation. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT I-82-53, December 1982.

Technology Sharing Program, Future Transportation Technologies. Prepared by U.S. Department of Transportation, in cooperation with NASA, April 1981.

Transportation Accounting Consortium, An Overview. Supported by U.S. Department of Transportation, Urban Mass Transportation Administration, August 1981.

Transportation Accounting Consortium. Simplifying Human Service Transportation and Small Transit System Accounting - A Six State Perspective. Prepared for U.S. Department of Transportation, U.S. Department of Health and Human Services, Draft Report, June 1983.

U.S. Department of Transportation, Conference on Regulatory Reform in Surface Transportation. Preprint Papers, in two volumes, (draft), March 1983.

U.S. Department of Transportation, Federal Highway Administration, Urban Planning and Transportation Management Division, Microcomputers in Transportation Software and Sourcebook. Washington, D.C., March 1983.

U.S. Department of Transportation, State-Initiated Transportation Programs: Selected Case Studies, February 1980.

U.S. Department of Transportation, State Technical Assistance Programs and Manuals on Rural Public Transportation. Second Edition, October 1980.

University of California, Institute of Transportation Studies. Shared-Ride Taxi Services as Community Public Transit. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report, March 1980.

Warren, McVeigh, & Griffin, Inc., Saving on Bus Insurance in Wisconsin: Joint Vehicle Insurance Program Implementation. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Final Report DOT-I-82-19, March 1982.

Warren, McVeigh, & Griffin, Inc., Wisconsin Department of Transportation Vehicle Insurance Study. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, May 1980.

APPENDIX F

RESOURCE MATERIAL USED IN  
WORKSHOP ON REVENUE ENHANCEMENT AND SOURCES





"REVENUE ENHANCEMENT AND SOURCES"

IMPORTANT RECENT CHANGES IN FEDERAL HUMAN SERVICE FUNDING

- I. Title IIIC of the Older American's Act : Notice of Proposed Rulemaking, Federal Register, Vol. 48, No. 42, Wednesday, March 2, 1983.

Would permit: (1) use of meals contributions to pay for nutrition program transportation, and; (2) transfer of up to 20% of nutrition program money (IIIC) to general program category (IIIB).

- II. Title XIX of the Social Security Act (Medicaid): Section 2176 of the "Omnibus Reconciliation Act of 1983" (Waiver to Provide Home and Community-Based Services for Certain Individuals).

Would permit states to include home and community-based services in their state medicaid plan for individuals who, without these services, would require care in a skilled nursing facility or intermediate care facility. For example, transportation for purposes other than medical care would be reimbursable.

- III. HHS Block Grant Programs: Rules and Regulations promulgated in the Federal Register, Vol. 47, No. 149, Tuesday, July 6, 1982.

Twenty-nine programs combined into seven block grants. In most cases, rules and regulations with the exception of statutory requirements removed. Funding priorities, rules, and regulations now largely determined at the state level.

- IV. Emergency Jobs Bill of 1983: See attached "Preliminary Information for HUD Staff".

Provides funding for public service jobs through the Community Development Block Grant Program.

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

Office of Human Development Services

45 CFR Parts 1321 and 1328

Grants for State and Community Programs on Aging and to Indian Tribes for Supportive and Nutritional Services

AGENCY: Office of Human Development Services (HDS), HHS.

ACTION: Notice of proposed rulemaking.

**SUMMARY:** The Administration on Aging (AoA), in the Office of Human Development Services, proposes new and revised regulations. The bases for these are the passage of the Older Americans Act Amendments of 1981 and the Department's commitment to regulatory reform.

These proposed rules supplement Titles III and VI of the Act by establishing the following requirements and procedures:

- Under Title III:
  - Submission of State plans
  - Designation of planning and service areas, including designation of additional planning and service areas (PSA) in a single State planning and service area
- Under Title VI:
  - Submission of application
  - Designation of service area
- Under both Titles
  - Service requirements
  - Hearing procedures

**DATE:** Comments must be received on or before May 2, 1983.

**ADDRESSES:** Address comments in writing to Commissioner on Aging, Administration on Aging, Room 4639 HHS North Building, 330 Independence Avenue, SW., Washington, D.C. 20202. Agencies and organizations are requested to submit comments in duplicate. Beginning two weeks from today, the public may review the comments submitted in response to this notice in Room 4639, HHS North Building, 330 Independence Avenue, SW., Washington, D.C. 20201, between the hours of 9 a.m. and 4 p.m. Monday through Friday except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Floyd Godfrey, (202) 472-3042

or

Anita Shalit, (202) 245-0641.

**SUPPLEMENTARY INFORMATION:****Background**

**1. History of Program.**—The Older American Act was first enacted in 1965.

On December 29, 1981, the President signed the Older American Act Amendments of 1981, Pub. L. 97-115. The Act was amended nine times between 1965 and 1981.

As first enacted, the Act authorized funding under Title III to support in each State a State Agency on Aging. Title III also provided funds for each State agency to initiate local community projects to provide social services to older persons. In fiscal year 1966, the total appropriation under the Act was \$7.5 million.

In 1972, a new Title VII was enacted which authorized funds for local community projects to provide nutrition services to the elderly. The projects were designed to provide older persons aged 60 and older with at least one hot nutritious meal five or more days a week. Emphasis in the projects was placed on service to older persons with greatest economic need, and on reducing the isolation of old age.

A second major change occurred in 1973. The amendments revised the Title III State Grant Program by requiring the State agency to: (1) Divide the entire State into planning and service areas, (2) determine in which areas an area plan would be developed, and (3) designate an area agency on aging to develop and administer the plan in each area. The 1973 amendments also added a new Title V to the Act which authorized the Commissioner to make grants directly to local community agencies to pay part of the cost of the construction, acquisition, renovation, alteration, or initial staffing of facilities for use as multipurpose senior centers.

The 1975 amendments specified that priority services be provided under State plans: access, in-home services, and legal services. These amendments also added a new section 303(b)(3)(A) to the Act. This section authorized the Commissioner to withhold a portion of a State's allotment and to grant it directly to an Indian tribe if he or she determined that the State had failed to provide benefits to older Indians that were equivalent to those provided to non-Indian older persons and that the Indians would be better served by a direct grant. This provision was never used.

The 1978 amendments consolidated under Title III the social services, nutrition services, and multipurpose senior center programs formerly authorized under Titles III, V and VII. This consolidation was designed to eliminate duplicative and overlapping functions that had been conducted under each Title. It also reemphasized the concept of a single focal point for service delivery within each community.

The 1978 amendments enacted a new Title VI, a new direct grant program to Indian tribal organizations for older Indians.

**2. 1981 Amendments.**—The 1981 amendments made several technical amendments to the Act and reinforced the basic direction established under the 1978 amendments. The new amendments also made several significant changes in both the Title III and Title VI programs. Most of the changes expand the capacity of State/area agencies and tribal organizations through increased administrative flexibility.

**Title III**

**State and area plans.**—The 1981 amendments provide States with greater flexibility in the development and submission of State plans. The amendments require that States submit to the Commissioner a plan for a two, three, or four year period as determined by the State agency, with such annual revisions as are necessary. Previously, three year State plans were required.

**Long-Term Care Facilities.**—Under section 302 of the Act, the definition of long-term care facilities subject to the Title III State ombudsman program is expanded to include any category of institutions regulated by a State pursuant to the provisions of section 1616(e) of the Social Security Act, also known as the Keys Amendment.

**Balance of State Designation.**—Any State designated as a single planning and service area prior to October 1, 1980 has the option of designating one or more additional planning and service areas within the State and, at the same time, continuing to function as the area agency for the balance of the State.

**Priority services.**—Each area agency must expend an "adequate proportion," rather than 50 percent, of its Part B supportive services allotment for access, in-home and legal services. The State agency has the responsibility for determining what constitutes "adequate proportion" and may waive the requirement for expending an "adequate proportion" of an area agency's Part B allotment for these services if the area agency demonstrates that the services being provided in the planning and service area for any specific category of service are sufficient to meet the need.

**Meals for handicapped non-elderly and volunteers.**—Nutrition services may be made available to the handicapped or disabled non-elderly individuals who reside in housing facilities occupied primarily by the elderly at which congregate nutrition services are provided. In addition, meals may be



offered to individuals providing volunteer services during meal hours on the same basis as meals are provided to older persons.

**Nutrition services contributions.**—Nutrition services contributions may be used to increase the number of meals served by a project, to facilitate access to meals, and to provide other supportive services directly related to nutrition services. In the past, contributions could be used only to increase the number of meals served.

**20 percent transfer between Part B supportive services and Part C nutrition services.**—A State may elect to transfer up to 20 percent of the funds appropriated for any fiscal year between the Part B and Part C programs for use as the State considers appropriate. The State shall notify the Commissioner of any such transfer.

**Former Title VII projects.**—All nutrition services contracts awarded after September 30, 1982 must be awarded through competitive processes. When there is no evidence of improved quality of services and cost effectiveness by another bidder, preference shall be given to the provider who received funds under Title VII of the Act as of September 30, 1978.

#### Title VI

**Eligibility for services.**—Eligibility for Title VI supportive and nutritional services has been changed from "Indians who are aged 60 and older" to "older Indians." However, the tribal organization must continue to represent at least 75 individuals who are 60 years of age or older in order to be eligible to receive a Title VI grant.

**Legal and ombudsman services.**—Legal and ombudsman services are no longer mandated under Title VI. However, each Title VI applicant that proposes to provide these services must assure that such services will be substantially in compliance with the requirements for legal and ombudsman services under Title III.

**Evaluation of projects.**—The prior requirement that evaluation of Title VI projects must be done by nonprofit private organizations has been amended to remove any mention of the type of organization which must conduct the evaluation.

**Withholding and reallocating Title III funds.**—The former section 604(d) provided that, whenever the Commissioner approved an application to a tribal organization under Title VI, the Commissioner was required to withhold from the Title III allotment of the State an amount attributable to the older Indians to be served under the approved Title VI grant who were also

counted for the purpose of determining the State's allotment under Title III. The Commissioner was required to reallocate the sums withheld in accordance with the provisions of section 304(b). The 1981 amendments repealed section 604(d).

**3. Development of proposed Titles III and VI regulations.**—These proposed rules revise the current Title III and Title VI regulations, published March 31, 1980, and July 18, 1980, respectively, and incorporate appropriate provisions necessary to implement the 1981 Amendments to the Older Americans Act. Since the proposed rules supplement rather than repeat the Act, they should be reviewed in conjunction with the appropriate sections of the Act. Where applicable, we have referenced the appropriate section of the Act in these regulations.

In conjunction with the Administration's effort to reduce regulatory burden and to provide States and area agencies with greater flexibility to respond to the needs of their respective populations, the Department established several rulemaking principles to be applied in the development of regulations.

These principles are as follows:

- Consistency with Congressional intent;
- Non-duplication of clearly established statutory provisions;
- Elimination of regulatory provisions which do not serve a compelling Federal interest;
- Maximum flexibility to State, local and tribal governments;
- Elimination of fraud, abuse, waste and inefficiency; and
- Cost containment.

These principles provided the structural framework used by the Administration on Aging in developing the proposed rules to implement the 1981 Amendments to the Act.

The application of these principles to the current Title III and Title VI regulations resulted in the reduction of the combined Titles III and VI regulations from 134 sections to 42 sections for a total of 82 sections removed. Of the 82 sections removed, 62 were removed because they substantially repeat the statute and 30 were removed to provide States and Indian tribes with greater flexibility in the development and operation of Older Americans Act programs. Thirty sections under Title III and twelve sections under Title VI were maintained or revised either to provide flexibility or protect a compelling Federal interest. The result is a significantly abbreviated set of proposed rules which give States

and tribal organizations broad authority and responsibility for administering programs under the OAA. Through the comment process we hope to identify any additional statutory provisions that should be addressed either in final regulations or future program guidance.

Because these proposed regulations involve extensive redesignation, revisions and deletions, we have based the format of the preamble on the 1978 regulations. State and local administrators, practitioners and others working with the field of aging are, through experience, familiar with the old format. The following table shows the transition from the old regulation to the proposed rules. It outlines whether a subsection has been removed, revised, or redesignated.

REDESIGNATION TABLE.—TITLE III—45 CFR  
PART 1321

Current section	Proposed action	New section
Subpart A	No change	
1321.1	Revised	
1321.2	do	
1321.5	do	
Subpart B	Removed	
1321.15	Revised	1321.17.
1321.19	do	1321.18.
Subpart C	Redesignated	Subpart B.
1321.21	Removed	
1321.23	Revised	1321.A.
1321.25	do	1321.B.
1321.27	do	1321.11.
1321.29	do	
1321.31	Revised	1321.13.
1321.33	Removed	
1321.35	Revised	1321.15.
1321.37	Removed	
Subpart D	Redesignated	Subpart C.
1321.41	Removed	
1321.43	do	
1321.45	do	
1321.47	do	
1321.49	Revised	1321.24.
1321.51	Removed	
1321.53	Revised	1321.27.
1321.55	do	1321.29.
1321.57	do	1321.31.
1321.59	do	1321.33.
Subpart E	Removed	
Subpart F	do	
1321.85	Redesignated	1321.25.
Subpart G	Removed	
Subpart H	Redesignated	Subpart D.
1321.101	do	1321.35.
1321.103	Removed	
1321.105	Revised	1321.26.
1321.107	Removed	
1321.109	Revised	1321.37.
1321.111	do	1321.39.
1321.113	Removed	
1321.115	do	
1321.121	do	
1321.123	Revised	1321.28.
1321.125	Removed	
1321.129	do	
1321.131	do	
1321.133	do	
1321.135	do	
1321.137	do	
1321.141	do	
1321.143	do	
1321.145	do	
1321.147	do	
1321.151	Revised	1321.43.
1321.161	Removed	
1321.171	do	
Subpart I	do	
1321.191	Redesignated	1321.23.
1321.207	do	1321.21.
Subpart J	do	Subpart E.
1321.231	Revised	1321.45.



Item II: Title XIX of the Social Security Act

State legislation is required for the State plan to meet the standards that apply to the provision of laboratory services under this section, the State will not be considered to be out of compliance until January 1 of the year after the close of the first regular session of the State legislature that begins after the date of enactment.

WAIVER TO PROVIDE HOME AND COMMUNITY-BASED SERVICES FOR CERTAIN INDIVIDUALS (Section 2176)

Current Law: Federal matching is only available under Medicaid for "medical assistance", that is, for services which are primarily medical in nature.

Modification: The Secretary may by waiver allow a State to include under its plan approved home- or community-based services, except for room and board, to individuals who, without these services, would require care in a SNF or ICF which would be paid for under the State Plan. States may include case management services, homemaker/home health aide services and personal care services, adult day health, habilitation services, respite care, and other services requested by the State which the Secretary approves. Such services must be provided pursuant to a written plan of care.

In order to receive a waiver, States must provide assurances that:

- 1) necessary safeguards have been taken pertaining to beneficiaries' health and welfare and to financial accountability for funds expended on these services;
- 2) they will provide for an evaluation of the need for such services with respect to those entitled to SNF or ICF care;
- 3) individuals determined likely to require SNF or ICF care are informed of these alternative services;
- 4) the estimated average per capita expenditure for all services provided individuals under this waiver would not exceed what would have been spent for those persons without the waiver; and
- 5) they will provide information annually to the Secretary on the impact of the waiver.

In connection with waivers under this section, the Secretary also may grant waivers of the requirements that services be provided Statewide and that services for comparable groups must be the same in amount, duration, and scope. Waivers will be initially granted for a three-year period, and may be extended for additional three-year periods, upon State request, unless the Secretary determines that the State's assurances have not been met.

Effective Date: 90 days after the date of enactment.

TIME LIMITATION FOR ACTION ON REQUESTS FOR PLAN AMENDMENTS AND WAIVERS (Section 2177)

Current Law: State Medicaid Plans, plan amendments, and waivers must be approved by the Secretary of HHS; however, no time limit is required for Secretarial action.

Modification: This provision sets a time limit of 90 days for the Secretary to act on requests for proposed Medicaid Plans, plan amendments, and waivers. A request shall be deemed granted unless the Secretary, within 90 days

DEPARTMENT OF HEALTH AND  
HUMAN SERVICES

## Office of the Secretary

45 CFR Parts 16, 74, and 96

## Block Grant Programs

AGENCY: Office of the Secretary, HHS.

ACTION: Final rules.

**SUMMARY:** These rules implement seven block grant programs established by the Omnibus Budget Reconciliation Act of 1981 (Pub. L. 97-35). The block grants replace a large number of programs now administered by the Federal Government, transfer primary responsibility for their administration to the States, and confer substantial discretion on the States as to use of the block grant funds.

**DATES:** These rules are effective July 6, 1982.

**FOR FURTHER INFORMATION CONTACT:**

The following individuals can provide additional information on the block grants indicated:

- Community services:** Sandra Lichty, Director, Office of State and Project Assistance, Office of Community Services, 1200 19th Street, N.W., Washington, D.C. 20506, (202) 254-5590.
- Preventive health and health services:** For technical assistance: Tom G. Ortiz, Assistant to the Director for Field Activities, Centers for Disease Control, 1600 Clifton Road, N.E., Atlanta, Georgia 30333, (404) 329-3850. For fiscal and grants management assistance: Leo A. Sanders, Chief, Grants Management Branch, Centers for Disease Control, 255 E. Paces Ferry Road, N.W., Room 107A, Atlanta, Georgia 30305, (404) 262-6576.
- Alcohol and drug abuse and mental health services:** Richard A. Millstein, Associate Administrator for Program Planning and Coordination, Alcohol, Drug Abuse and Mental Health Administration, 5600 Fishers Lane, Room 13-C-05, Rockville, Maryland 20857, (301) 443-4564.
- Maternal and child health services and primary care:** James Corrigan, Associate Director, Bureau of Community Health Services, 5600 Fishers Lane, Room 7-05, Rockville, Maryland 20857, (301) 443-2380.
- Social services:** Michio Suzuki, Deputy Director, Office of Program Coordination and Review, Office of Human Development Services, 200 Independence Avenue, S.W., Room 306E, Washington, D.C. 20201, (202) 245-7027.
- Low-income home energy assistance:** Norman Thompson, Director, Office of

Energy Assistance, Tranpoint Building, 2100 2nd Street SW., Washington, D.C. 20201, (202) 245-2051.

**SUPPLEMENTARY INFORMATION:** The Omnibus Budget Reconciliation Act of 1981 (Pub. L. 97-35) ("the Act") established seven block grant programs to be administered by the Secretary of Health and Human Services:

(1) The community services block grant was established by sections 671-683 of the Act, 42 U.S.C. 9901-12, and replaced the following programs that were administered by the Community Services Administration under the Economic Opportunity Act of 1964:

Community Action/Local Initiatives  
Senior Opportunities and Services  
Community Food and Nutrition

(2) Section 901 of the Act amended the Public Health Service Act by adding a new Title XIX, which contains three block grants. The preventive health and health services block grant established by section 901, 42 U.S.C. 300w-300w-8, replaces the following categorical grant programs:

Rodent Control  
Fluoridation  
High Blood Pressure  
Health Incentive  
Home Health Services and Training  
Emergency Medical Services  
Risk Reduction/Health Education  
Rape Crisis

(3) The second block grant established by section 901 is the alcohol and drug abuse and mental health services block grant, 42 U.S.C. 300x-300x-9, which replaces the following programs:

Alcoholism State Formula Grants  
Alcohol Abuse and Alcoholism  
Project Grants and Contracts  
Special Grants for Uniform  
Alcoholism Intoxication and  
Treatment Act  
Drug Abuse State Formula Grants  
Drug Abuse Project Grants and  
Contracts  
Mental Health Services

(4) The third block grant established by section 901 is the primary care block grant, 42 U.S.C. 300y-300y-10, which replaced the following programs:

Community Health Centers  
Primary Care Research and  
Demonstrations

(5) Section 2192 of the Act amended Title V of the Social Security Act, 42 U.S.C. 701-09, to establish a maternal and child health services block grant. This block grant replaces the following programs:

Maternal and Child Health  
Crippled Children's Services  
SSI Disabled Children

Hemophilia  
Sudden Infant Death Syndrome  
Lead-Based Paint Poisoning  
Prevention

Genetic Diseases  
Adolescent Pregnancy

(6) Section 2352 of the Act amended Title XX of the Social Security Act, 42 U.S.C. 1397-1397f, to establish a social services block grant.

(7) A low-income home energy assistance program is authorized by sections 2601-2611 of the Act, 42 U.S.C. 8621-29, to replace the Home Energy Assistance Act of 1980.

The Secretary has determined that the Department should implement the block grant programs in a manner that is fully consistent with the congressional intent to enlarge the States' ability to control use of the funds involved. Accordingly, to the extent possible, we will not burden the States' administration of the programs with definitions of permissible and prohibited activities, procedural rules, paperwork and recordkeeping requirements, or other regulatory provisions. The States will, for the most part, be subject only to the statutory requirements, and the Department will carry out its functions with due regard for the limited nature of the role that Congress has assigned to us.

Interim final regulations to implement the block grants were published in the Federal Register on October 1, 1981 (46 FR 48782), and a 60-day comment period was provided. Based on our evaluation of the comments received and our initial implementation of the block grants, the regulations, revised as appropriate, are now being made final. The provisions of the regulations are discussed below, together with the comments that were received.

**Transition to State Operation***Timing of Transition*

States became eligible to receive funds under six of the seven block grants beginning October 1, 1981. The exception is the primary care block grant, which does not become effective until October 1, 1982.

Of the six block grants that became operative in fiscal year 1982, four are subject to transition provisions that permit a State to initiate operation under the block grants on October 1, 1981, or at the beginning of any subsequent quarter (January 1, April 1, or July 1, 1982). The four block grant programs subject to these transition provisions are community services, preventive health and health services, alcohol and drug abuse and mental health services, and maternal and child







**Each grantee will be required to submit a Final Statement specifically relating to the use of Jobs Bill funds**

**Each activity assisted with Jobs Bill funds must be an eligible use of CDBG funds and must meet one of the three broad national objectives: benefit low- and moderate income persons, aid in the prevention or elimination of slums or blight, or meet other community development needs having a particular urgency**

**Other applicable laws, including Civil Rights laws, environmental review, labor standards, etc. must be followed in carrying out Jobs Bill activities**

**Submission Requirements**

**Each grantee will have to follow all applicable pre-submission requirements before submitting its Final Statement for Jobs Bill funds**

**Pending more detailed instructions, grantees should be advised to begin the citizen participation process and develop a Proposed Statement for publication**

**Special Jobs Bill Provisions**

**Up to 50% of Jobs Bill funds may be used for eligible public service activities; grantees will be required to include in their Final Statement the amount of Jobs Bill funds expected to be used for public services (see also attached chart on other public service funds in Jobs Bill)**

**Quarterly reports will be required on the use of Jobs Bill funds**

**To the extent practicable, Jobs Bill funds should be used in areas where unemployment is highest and has been for the longest period of time and should be used to maximize new employment opportunities for persons who have been unemployed for 15 of the past 26 weeks**

**For Further Information**

**CDBG Entitlement - Charles Krelman (FTS) 755 - 5977**

**CDBG States/Small Cities - Ann Wiedl (FTS) 755 - 6322**

**CDBG Indians - Marcia Brown (FTS) 755 - 6092**

**Prepared by:**

**Assistant Secretary for Community Planning and Development  
Office of Block Grant Assistance  
April 1983**

JOBS BILL FUNDS FOR PUBLIC SERVICES

The Jobs Bill includes significant funding for public services under other Federal programs. Grantees should be aware of these resources when considering the use of CDBG funds for public services.

<u>Program</u>	<u>Jobs Bill Funds</u>
Employment and Training	\$ 50 million
Health Services (disadvantaged and unemployed)	70 million
Health Services (disadvantaged children and mothers)	105 million
Alcohol, Drug Abuse and Mental Health	30 million
Social Services Block Grant	225 million
Community Services Block Grant	25 million
Distribution of Agricultural Commodities	75 million
Supplemental Food for Women, Infants and Children (WIC)	100 million
Food Distribution and Emergency Shelters	50 million
<u>TOTAL</u>	<u>\$ 730 million</u>



APPENDIX G

LIST OF FORMAL PAPERS PRESENTED AT THE CONFERENCE





## APPENDIX G

### LIST OF FORMAL PAPERS PRESENTED AT THE CONFERENCE

#### GENERAL SESSIONS

##### Rural America and Public Transportation: Trends and Outlooks

Edmund F. Jansen, Jr., "Rural America and Public Transportation: Trends and Outlook", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

Edward Good, "Basics in Establishing a Reliable Cost-Effective Fully Integrated Transportation System", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

##### State DOT Perspectives on Rural Transit Performance

Joseph L. Daversa, "Pennsylvania's Performance Incentive System for the Rural Public Transportation Assistance Program", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

Robert T. Goble, "Pennsylvania's Performance Evaluation Guide: Its General Purpose, Development and Use," Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

##### Productivity and Performance

Ann Palmer, "Developing Performance Audits for Transit Systems" Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

Jon E. Burkhardt, "Why Use Which Performance Measures for What Reasons?", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

#### WORKSHOPS

##### Vehicles

George L. Smith, "UMTA Section 16(b)(2) Vehicle Rehabilitation, Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

Richard Garrity, "Safety and Design Considerations in Wheelchair Lift/Van Conversion Specifications", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

Personnel Productivity

Terry Young, "Driver Selection in the Rural Transit Industry", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

Linda Wilson, "Performance Goals and Personnel Management", Prepared for presentation at the Sixth National Conference and Workshops on Rural Public Transportation in Gorham, Maine, August 1983.

## RURAL AMERICA AND PUBLIC TRANSPORTATION, TRENDS AND OUTLOOK\*

Edmund F. Jansen Jr., Professor of Resource Economics  
University of New Hampshire

The purpose of this paper is to provide an overview of the rural sector of the United States and to examine some of the problems related to rural public transportation. Recent changes in rural population will be outlined. The implications of energy scarcity and price increases will be discussed. Then, the environmental impacts of the rural transportation system and other rural transportation issues will be considered. Finally, rural transportation outlook issues are briefly discussed.

### Rural Population Change:

Population change has a major influence on the need and demand for rural transportation services. About 25 percent of the 226.5 million people in the United States in 1980 lived in rural areas. The proportion of total population living in rural areas declined every decade since the first U. S. census was conducted in 1790. (Figure 1 and Figure 2). While the relative size of the rural population has declined, the total population living in rural areas has increased each decade except during the 1950-1970 period when rural population declined by 913,684. However, a big turnaround in population trends occurred between 1970 and 1980 when rural population increased by 5,929,516 or 11.1 percent (Figure 3). Calvin L. Beale, U.S.D.A., and many others have written extensively about this population turnaround. The nonmetropolitan population (57,115,182) grew even faster than the rural population between 1970-1980, growing by 7.5 million or 15.1 percent.<sup>1</sup>

Approximately 82 percent of the 3,137 counties in the United States experienced population increase between 1970 and 1980 (Table 1). Coastal and mountain areas tended to gain population while many counties located in the central part of the country had population declines. Large clusters of rural counties with population decline remain in the Northeast, the Midwest, and the Great Plains (Figure 4). Most people who move to rural areas are attracted by either employment opportunities or by a quality living environment. Sofranko & Williams reported that the population turnaround is a function of the diminished attractiveness of urban areas

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\*Talk presented to the Sixth National Conference and Workshops on Rural Public Transportation. University of Southern Maine, Gorham, Maine. August 17, 1983

Table 1. Number of Counties by Percent Change in Population: 1970 and 1980

Regions	Number of Counties	Counties with Increase	Counties with no Change	Counties with Decrease	Percent with Decline
U.S.	3,137	2,558	19	560	17.9
Northeast	217	171	--	46	21.2
New England	67	58	--	9	13.4
Middle Atlantic	150	113	--	37	24.7
North Central	1,055	735	--	320	30.3
South	1,425	1,284	3	138	9.7
West	440	368	16	56	12.7

Source: U.S. Bureau of Census, Characteristics of the Population: Number of Inhabitants

and the increased attractiveness of rural areas.<sup>2</sup> This turnaround is more rooted in environmental factors than in employment (Sofranko). Environmental and site characteristics or amenities have played an important role in attracting retired people to the Coastal Northeast, the Upper Great Lakes Region, the Appalachian Mountain Region, and the Ozarks. Likewise, recreation and climate considerations are important factors influencing migration to Florida and the Gulf Coast counties. Both employment and amenity factors appear to attract people to the Western Mountain states. In contrast, the declining counties in the Midwest and Plains states often lack the environmental and employment opportunities required to retain or attract population.

Rural areas have been very successful in attracting light manufacturing firms and service firms during the 1970s. The rate of growth of nonmetropolitan manufacturing exceeded that of urban areas between 1970 and 1980 (Figure 5). Technological development in communications and the development of the interstate highway system have made rural areas accessible and more attractive places for both workers and retired persons. Lower labor and land costs also attract industry to rural areas. While the new migrants often have higher levels of education and income, the overall level of income in rural areas still lags behind urban areas even though the gap is narrowing. Thus, rural areas often find it difficult to find adequate local financial resources to provide additional community services.

This brief overview of population suggests that rural counties are heterogenous with respect to population change. Declining areas are experiencing problems with maintaining an adequate tax base to support the existing transportation system infrastructure. On the other hand, rural

counties with rapidly growing populations must find new financial resources required to construct and operate additional public facilities and services.

### Rural Transportation and Energy Consideration:<sup>1</sup>

The rapid increase in petroleum energy prices during the Seventies raised serious concerns about the future of transportation in rural areas. The transportation sector accounted for only 20 percent of the total energy consumed in the United States in 1981 (Figure 6). However, transportation accounted for 58 percent of the petroleum consumed in the United States (Figure 7). Clearly, future changes in petroleum prices can be expected to have a significant impact in the transportation sector. The transportation sector must find an alternative energy source to replace petroleum during the next 25 years. When petroleum prices rise relative to other fuels, the automobile may have to turn to electric energy produced from coal, hydro and nuclear sources. The electronic generation sector consumed 25 percent of total energy used in the United States in 1981 but consumed only about 7 percent of the petroleum.

Concerns about rising petroleum prices have been temporarily reduced by the current supply and demand situation in the oil market. During the last three years, the real price of gasoline and other petroleum products has actually declined. The average retail price of gasoline rose from \$0.65 per gallon in 1978 to \$1.35 per gallon in 1981, and then declined to about \$1.20 in April 1983 (Figure 8). The price of gasoline expressed in 1967 dollars rose from \$.33 per gallon in 1978 to about \$.50 in 1980, remained nearly constant in 1981, and then declined to about \$.407 in April 1983. Taking into consideration the higher gasoline efficiency of new automobiles and trucks, it becomes apparent that the real cost of fuel used in the average family automobile has decreased considerably since 1980. Rural residents have been major beneficiaries of this temporary price decline.

While the automobile has been criticized as an inefficient mode of transportation, a comparison of person miles per gallon of fuel suggest that mass transit is less energy efficient for moving people than the private automobile under current occupancy use of mass transit. A fully loaded urban bus averages about 150 person miles per gallon. However, the daily operating average for urban buses is only 40 person miles per gallon of fuel (Figure 9). In contrast, the small car with four occupants averages about 100 person miles per gallon of fuel under city driving conditions. This average rises to about 180 person miles per gallon under rural driving conditions. This is better than the 140 person miles per gallon of fuel for a greyhound bus on the highway and far exceeds the 40 person miles per gallon average of Amtrak. The percent of vehicle capacity used is a critical factor affecting energy efficiency.<sup>2</sup> The energy

<sup>1</sup>The reader should note that this section compares existing mass transit statistics with potential auto statistics, thus using much more favorable assumptions for autos than for mass transit.

<sup>2</sup>See Table A.

efficiency of the small car carrying only the driver in the rural area drops to near to that of the urban bus and Amtrak.

Given the low density and the diverse origin and destination of trips in rural areas, the private auto is currently the most energy efficient mode of transportation available.<sup>1</sup> Significant energy conservation can be realized by promotions of car pools and other programs that increase the average number of riders per vehicle in rural areas. However, the other alternatives to the automobile are not very energy efficient per person mile. Furthermore, mass transit systems are labor intensive and have high labor costs per person mile. Thus, mass public transit is not cost-effective in nonmetropolitan areas. Higher energy prices might promote more car pools and reduce the number of miles driven, but no easy solutions for the rural transportation energy problem appear on the horizon.

#### Transportation - Environment and Aesthetic Impacts:

While the expansion of the transportation system is considered a positive factor related to rural economic development, it is also identified as a major source of environmental destruction in rural areas. The transportation system produces air and water pollution and noise which affects adjacent land users and contributes to acid rain precipitation that may affect people many miles away.

Automobile exhaust contaminates the air and contributes to health problems when the concentration of pollutants become too high. While the automobile is cited as a major polluter, the auto era has actually helped reduce some major pollution problems that existed in our cities 80 years ago. At the turn of the century, New York City workers had to remove an average of 40 dead horses from city streets each day.<sup>3</sup>

Turner stated that during the height of horse-drawn traffic, vast amounts of manure and urine were vented in the streets of U.S. cities. The stench was very powerful in hot weather. The dried residues of this manure formed germ carrying dusts that contributed to high rates of gastrointestinal and respiratory diseases.

The automobile seemed to provide a wonderful solution for these horse-related pollution problems. But now the waste by-products of the internal combustion engine are said to cause lung cancer, other respiratory illnesses and heart disease. Furthermore, automobile pollution has contributed to the deterioration of buildings and plant life. The so called "hot house effect" caused in part by the auto may alter our climate and cause lower rainfall and food production in the midwest and western agricultural areas of the United States.

Transportation has enhanced land by giving access to it for a variety of uses. On the other hand, the transportation system occupies large

<sup>1</sup>This assertion is not currently true according to today's average vehicle occupancy and fuel consumption statistics, which show mass transit to be more than three times as fuel efficient as autos on the average. In the future, it will be true only if you induce auto users to change their travel habits by (a) increasing their vehicle occupancy and (b) purchasing more fuel-efficient (and more expensive) vehicles, while, at the same time, the fuel efficiency and vehicle occupancy statistics for transit systems do not improve. (Ed.)

amounts of surface land that could be used for other purposes. Highways, bridges and parking lots are often criticized as eyesores that reduce the quality of the landscape.

Comprehensive planning is one method of controlling the undesirable impacts of the highway system on the rural environment, i.e. control of commercial strip development. However, rural communities often lack the professional personnel and resources required for an adequate planning process. Federal transportation planning funds have been mainly targeted for urban transportation planning activities.

The highway system also contributes to environmental deterioration due to drainage, erosion, sedimentation and flood plain problems. Farmers and rural home owners complain about crop and lawn damages due to off-site migration of salt or pesticides that were used on the highway right-of-ways. Alternative treatment methods and public education programs are needed to deal with these environmental issues.

#### Other Rural Transportation Issues:

The automobile is the predominate mode of transportation in non-metropolitan areas. Individuals who do not have access to a private automobile or cannot operate an automobile are put at a major disadvantage in terms of transportation. The transportation disadvantaged in rural areas include: the elderly, the handicapped and the poor. Physical impediments make it difficult or impossible for many elderly and handicapped people to operate an automobile. The initial purchase and operation of an auto is beyond the financial means of many low income persons in rural areas. Low income women with dependent children represent a significant proportion of the poor rural people that have transportation problems.

The transportation system in rural areas must enable the handicapped and poor to travel to social service offices; to education and training locations; to health and medical services; and to shopping and recreation. Trips for these purposes tend to be dispersed and the trip generation rates per household are low, thus usually considered an impossible market for public transportation. Such a market can probably be most efficiently served by some demand actuated transportation system.<sup>4</sup>

Rural areas have many of the same transportation problems that exist in urban areas. However, the sparse dispersed location of population and greater distances discourage the development of a mass transportation system in rural areas. Given the low density of trips and diverse destinations, the private automobile is expected to play a key role in any transportation system designed to meet the transportation needs of the rural population during the next 20 years in the United States.



The deficiencies in rural transportation systems that concern rural people have been listed as follows:

- "1) rail abandonments, threatened and real:
- 2) Inadequate highways, bridges, and trucking to take up the slack;
- 3) needs for improved transportation (highway, air, rail, and water) to promote economics development;
- 4) lack of public transportation to meet the needs of persons without private automobile transportation;
- 5) continuing highway, rail, and migrant labor bus safety hazards; and
- 6) seasonal traffic congestion in rural recreational areas."5

Rail abandonment has been partly responsible for a reduction of passenger and freight services in many rural areas. Farmers and farm organizations have expressed major concern about the impacts of these service reductions.

The decaying transportation infrastructure in many areas in the United States has received major press coverage. The capital requirements to reconstruct our roads and bridges exceed the capacity of existing local tax and revenue sources. In fact, improved gasoline efficiency has contributed to a reduction in gasoline tax revenues that are needed to finance the highway reconstruction. Federal efforts to shift more responsibility to state and local governments compound transportation problems in some rural areas. Clearly, financial support for rural roads and bridges is a major problem that demands more attention.

Who should pay for financing transportation improvements? Consumer organizations argue that truckers should pay a major proportion of the highway costs because trucks are responsible for a major proportion of highway wear and tear. On the other hand, independent truckers say that additional fuel taxes and licence fees will drive them out of business.

Road safety calls for elimination of traffic hazards. These hazards include poorly constructed roads and bridges, automobile design, and weather conditions, but the biggest safety problem is the drinking driver. This is a complex social problem that has few simple solutions in the short run.

### Rural Transportation Outlook:

The lack of alternatives to the private automobile is one of the major transportation problems that will continue in nonmetropolitan areas. Our exclusive dependence on the auto in nonmetropolitan areas inhibits the development of viable transportation alternatives for the person who lacks access or ability to operate an automobile - the poor, the young, elderly, and the handicapped. Thus, finding transportation for these groups presents a major challenge for nonmetropolitan areas. The proportion and average age of the elderly will probably increase in rural areas during the next decade.

Transportation funding is the basic problem underlying most transportation concerns. How will we finance the additional transportation services? Public or private sector funding? Should transportation regulations be retained to foster rural transportation service or reduced or eliminated? When public funds are used to subsidize transportation services, should the funds come from federal, state or local sources? Federal efforts to shift responsibility for social and human services to the state and local level, presents a major challenge to local governments which face increasing demands for education, protective services, waste disposal, and other programs.

Public transportation in nonmetropolitan areas has very high operating costs per passenger mile due to the low rider density and dispersed trip ends. For this reason, demand-responsive rather than fixed-route services are called for, especially since a majority of the potential users are elderly or handicapped. In general, when demand is less than 100 passengers per sq. mile per hour, flexible routes will provide superior service for the same total cost. The automobile is more cost effective and energy effective when trip densities are low and destinations are diffused. Although the auto is not an efficient user of scarce street space, congestion is not a major concern in most nonmetropolitan areas.

When energy prices begin to rise again, nonmetropolitan areas will be forced to improve energy efficiency by carpooling and other means of trip consolidation.

Nonmetropolitan areas may face even more loss of public transportation services as a result of deregulation of the transportation industry. More nonprofitable train and bus runs in sparsely populated rural areas may be eliminated. Many rural areas have already experienced a major curtailment in local passenger air service. It is much more difficult to go 130 miles by air from St. Louis, Missouri to my hometown of Quincy, Illinois than it is to go from Boston, Massachusetts to St. Louis, Missouri. The low volume of traffic on the Quincy run discourages convenient air service by commercial air lines that seek profits.

Deregulation of the trucking and railroad industry remains a major concern to agricultural firms in isolated rural communities. Farmers fear that the lack of competition will lead to higher rates that reduce the competition position of some agricultural commodities. Both the costs and benefits of deregulation require careful analysis.

The continued decline of population in some rural communities will increase the difficulty of financing and maintaining an adequate transportation infrastructure.

The public is aroused and concerned about highway safety, especially the problem of the drinking driver. Of course, this is a problem that goes far beyond the concerns of the transportation field.

Rural transportation planning requires more attention. Transportation goal setting, resource identification, determination of alternatives, and evaluation of costs and benefits receive little attention in many rural areas. Local governments often lack this planning capacity and federal agencies place their priority on transportation planning in standard metropolitan statistical areas.

The overlapping provision of transportation services by human service agencies must be coordinated and inefficient activities curtailed. Local governments cannot be expected to step in and replace all the Federal transportation activities, if funding for such services is shifted to local government. Transportation providers must recognize the tradeoffs between transportation and other services supplied by local government. Local governments already spend more per capita on transportation than urban areas. Rural residents are demanding that more priority be given to improving road and bridge maintenance. The local planner and government official must ask whether the marginal benefit to society of road maintenance is greater than buying a new community action van/bus to haul handicapped people to service providers.

Although it is difficult to predict the exact rural transportation concern of society ten years from now, we know that the aging population, declining petroleum resources, and changing technology will continue to present many challenges. Financial and economic consideration will continue to be major factors of concern to transportation policy makers.

The editors of this volume would like to acknowledge the cooperation of the Economic Research Service, U.S. Department of Agriculture in producing an updated map for use in Figure 4. The assistance provided by Dr. J. Norman Reid is especially noteworthy, as are the efforts of Eleanor Whitehead and Dave Weisblat in defining and actually producing the map.

### Footnotes

1. Nonmetropolitan population refers to population living outside Standard Metropolitan Statistical Areas.
2. Sofranko, page 50.
3. Turner, S. page 30.
4. See U.S. Department of Transportation. Natural Transportation Trends and Choices. "Small Urban and Rural Transportation." Pp 349-358.
5. Advisory Commission on Intergovernmental Relations. Toward More Balanced Transportation: New Intergovernmental Proposals. Page 35.

### References

1. Advisory Commission on Intergovernmental Relations. Toward More Balanced Transportation: New Intergovernmental Proposals. U.S. Government Printing Office, Washington, D.C. 1975.
2. Beale, C.L. The Revival of Population Growth in Nonmetropolitan America. 1975. USDA ERS-605.
3. Sofranko, A. & William, J.D. Rebirth of Rural America: Rural Migration in the Midwest. North Central Regional Center for Rural Development. Ames, Iowa. June, 1982.
4. Turner, S. "Auto Mobility" in Colliers Encyclopedia Yearbook for 1983. MacMillian Publishers. New York. 1982.
5. U.S. Bureau of the Census. Characteristics of the Population: Number of Inhabitants. PC80-1-A1. Washington, D.C. April 1983.
6. U.S. Bureau of the Census. Statistical Abstract of the United States: 1982-'83 (103rd edition) Washington, D.C. 1982.
7. U.S. Department of Transportation. National Transportation Trends and Choices. U.S. Government Printing Office, Washington, D.C. January 1977.

Table A

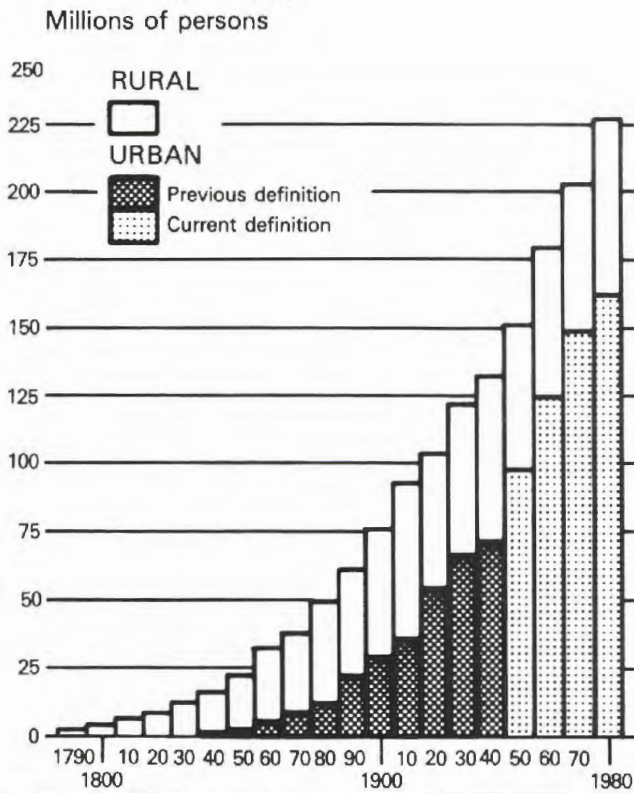
Passenger Miles per Gallon of Fuel as Related  
to Percent of Seats Occupied per Trip

Type of Vehicle	Miles Per Gallon	Percent of Seats Occupied per Trip			
		25%	50%	75%	100%
4 Passenger - Subcompact	45	45*	90	135	180
5 Passenger - Intermediate	25	25	63	94	125
5 Passenger - Full Size Car	15	15	38	56	75
Passenger Van (15 Passengers)	12**	45	90	135	180
Bus (24 Passengers)	10**	60	120	180	240
Bus (52 Passengers)	6**	78	156	234	312
Small Pickup Truck - Diesel (2 passengers)	35	N.A.	35	52	70

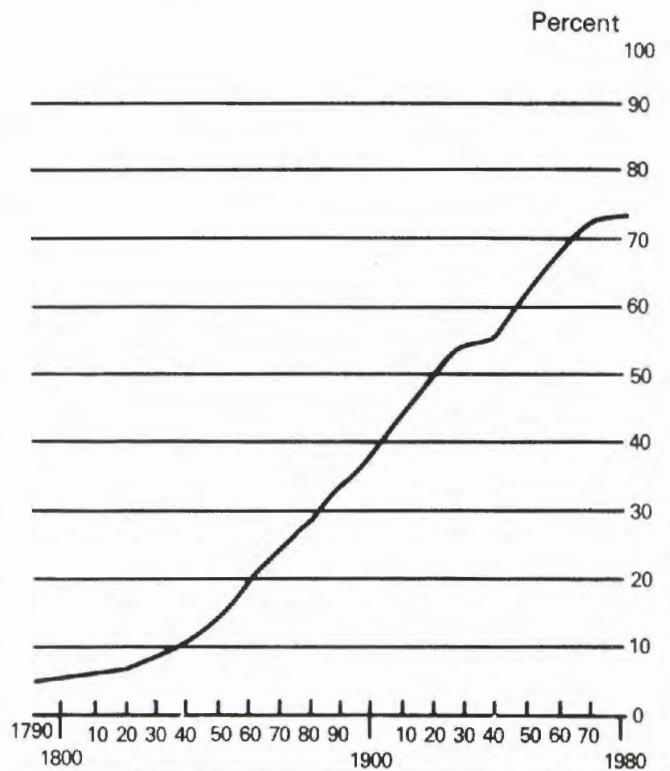
\*Passenger miles per gallon = miles per gallon X number of passengers.

\*\*Source: Motor pool figures for the University of New Hampshire.

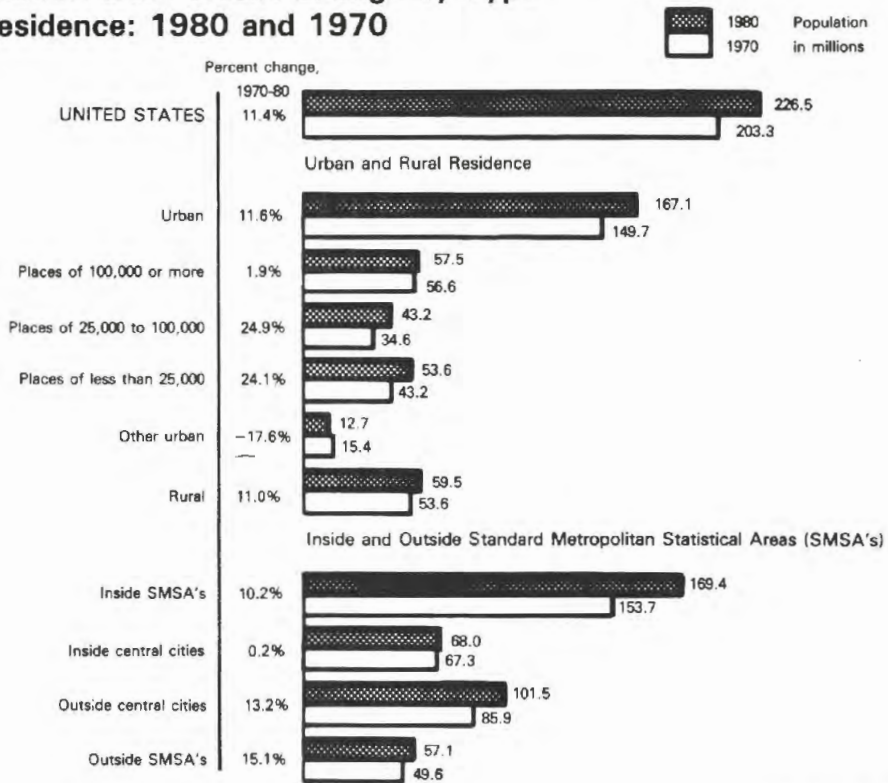
**FIGURE 1. Urban and Rural Population: 1790 to 1980**



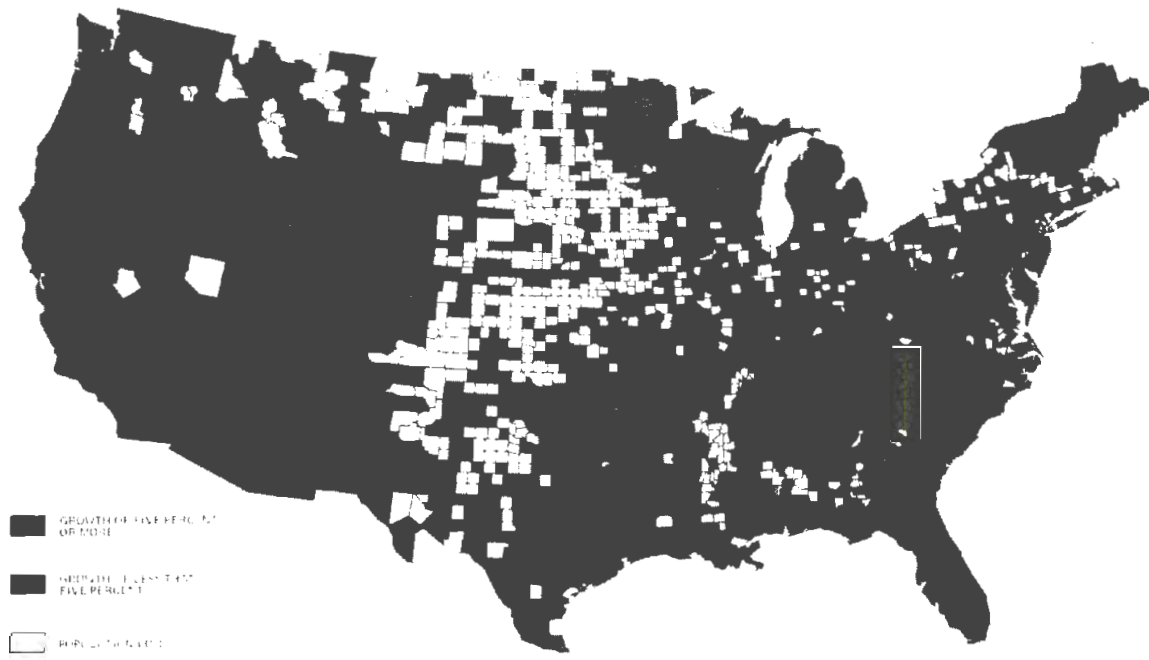
**FIGURE 2. Percent of Population Urban: 1790 to 1980**



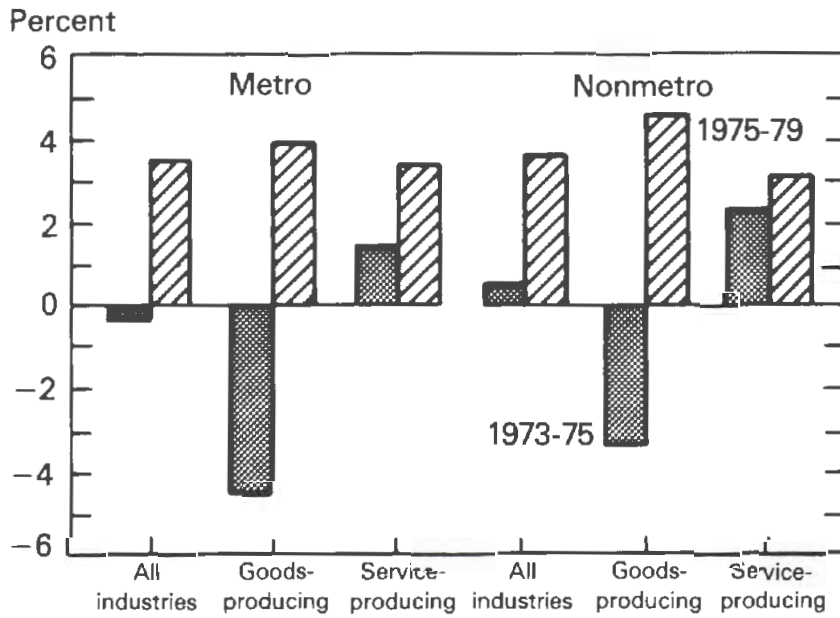
**FIGURE 3. Population and Percent Change by Type of Residence: 1980 and 1970**



**FIGURE 4. Percent Change in Total Population: By Counties 1970 to 1980**



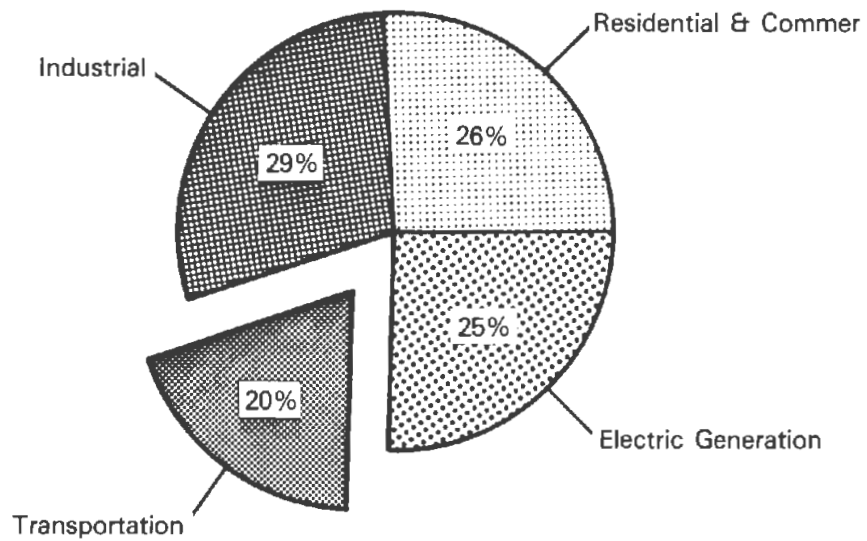
**FIGURE 5. Employment Change by Type of Industry**



Compound annual rate of change in nonfarm wage and salary employment.

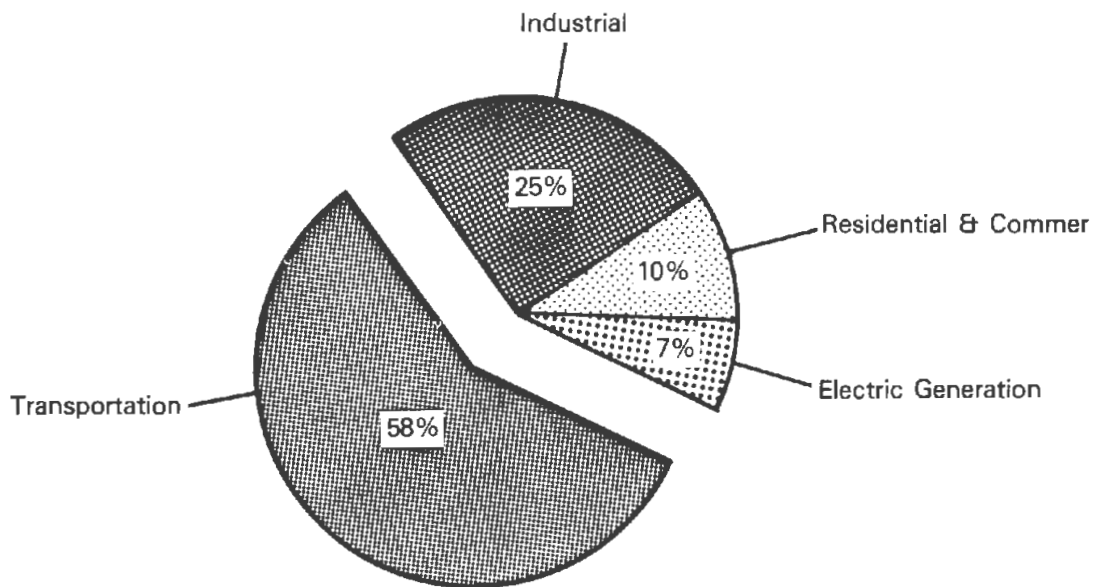
Source: Bureau of Economic Analysis; U.S. Department of Commerce.

**FIGURE 6. Energy Consumption by Sector in the United States: 1981\***



\*Source: U.S. Bureau of the Census. Statistical Abstracts of the United States: 1982-83. Table No. 976

**FIGURE 7. Petroleum Consumption by Sector in the United States: 1981\***



\*Source: U.S. Bureau of the Census. Statistical Abstracts of the United States: 1982-83. Table No. 976



FIGURE 8. Average Current and Real Price of Gasoline in U.S.

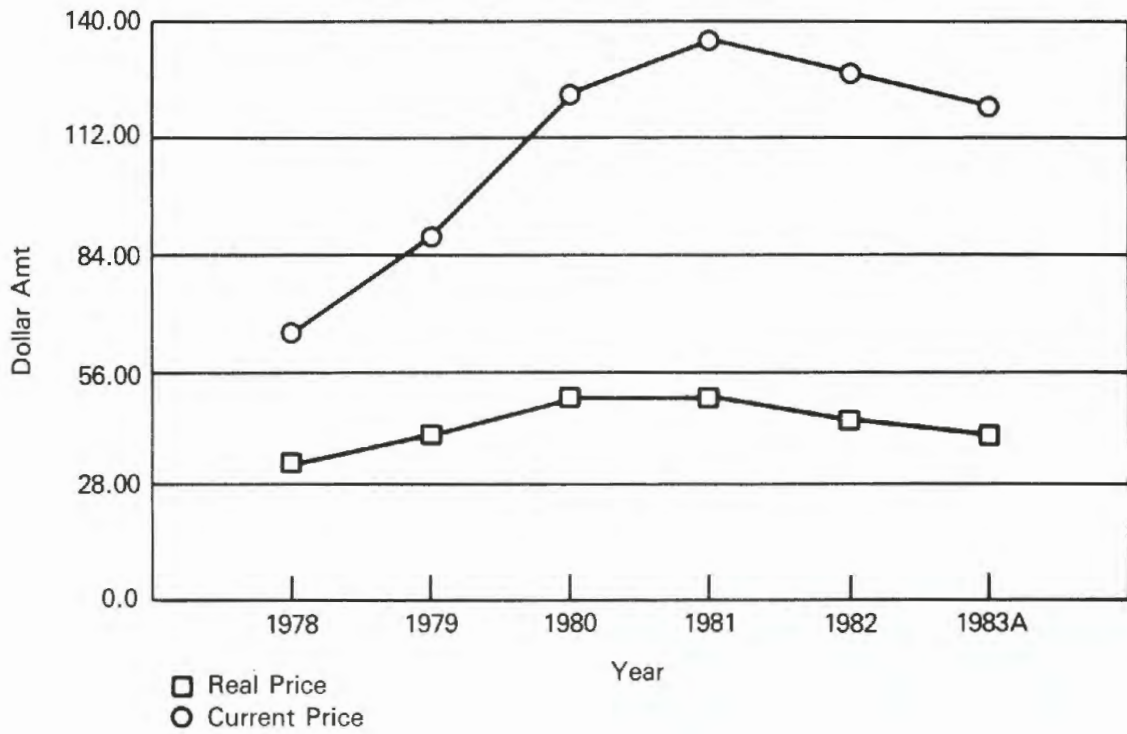
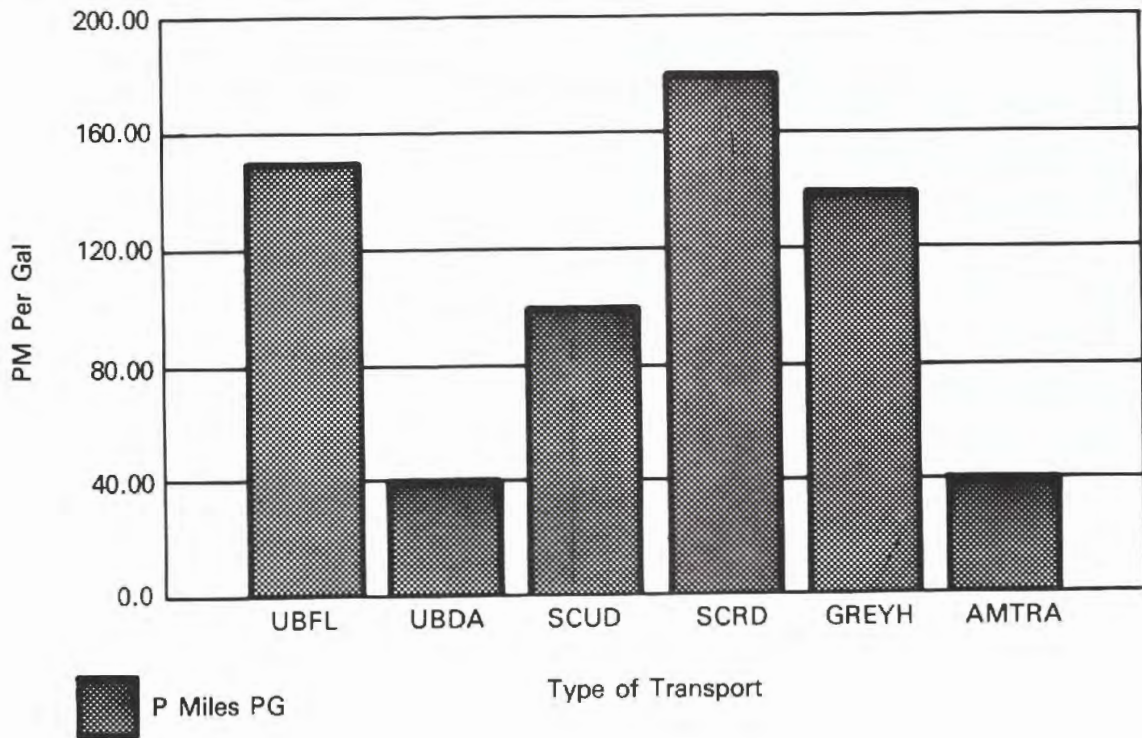


FIGURE 9. Person Miles Per Gallon by Type of Transport Mode



"Basics in Establishing a Reliable Cost-Effective  
Fully Integrated Transportation System"

By

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## PREFACE

The following presentation and summarization of facts has been collected to help and assist in the establishment of new transportation systems.

Outlined within this presentation are the various types of systems; fundamentals in setting up a system with the assistance of a planning commission; various types of services offered and types of charge systems used. I have also given a few examples of Standard Operating Procedures to be used by the brokerage type system and several policies which are used by the service providers.

The facts procedures and policies as presented do not in themselves reflect the present day concerns of LISTS, it's staff or Board of Directors. Although the LISTS system was developed in much the same manner as stated herein the system itself is constantly changing and being updated.

There are other alternatives in setting up a transportation system which may be more beneficial to each community and it's citizens. I certainly would wish that everyone using this presentation may get some useful information which may be helpful in establishing a transportation system in their area.

The important thing to remember is that to set up a well organized transportation system you should have the approval of both the city and county officials. This type of system can only get better and better as time goes on.

## "Getting Involved"

I have titled my presentation 'Getting Involved' for very obvious reasons ladies and gentlemen... that's exactly what it is. But it's a different type of involvement... it's total involvement. By this I mean it's not just writing a few letters and making a few telephone calls and letting it go at that.

The involvement in setting up a transportation system may take many many months and in some cases years to set up properly and get going in the operational stage. To give you a small example. I come from a small town of approximately 80,000... the surrounding suburbs and developments bring that figure up to about 200,000. We have very little problems with the economy... unemployment is only about 6%... we have plenty of business and industry opportunities. There are no political or racial problems to speak about and we have a very low crime rate. There are plenty of good schools, churches and very good hospitals and also lots to do for recreation. Now this may sound like a garden of eden... but let me assure you... even in our small rural community we still go by the book when it comes to dealing with the government and the so called red tape.

Setting up the transportation system in Lancaster County took approximately two years and four months from the first meeting until it became operational in October of 1977.

Now lets get down to the real facts of what I've come here to share with you.

The first involvement you must have is that with the local planning commission. Now... some of you may say... why would that be necessary? Let me again assure you it is very necessary to have that approval of the local government. Try setting up a

transportation system of your own without the involvement of the local officials and agencies and see how far you get. Even if you succeed it won't be long before another company in your area starts getting the contacts with the local government officials and implements his or her own transportation plans with their approval.

Could you picture for a few moments a transportation system in which the city and county officials say to all of it's citizens and social service agencies, "We are requesting that whenever possible you use the public transit system and when this is not feasible use the taxi and van services. We are not going to approve any requests for vehicles or funds unless you have investigated the feasibility of using the system, compare the costs and service... and even then not until the members of the system have given us written statements that they approve of the requests."

Could you imagine receiving all of that extra business and ridership? It would be like signing one big contract with the city fathers permitting you all the business. Could any of you imagine a system like this? One step further... Are any of you involved with or participate in a system like this? Well... I'm not either... never have been never will be.

The system that we have established in Lancaster County provides only about 85 to 90% of the total transportation needs of the human service agencies... but we can live with that.

Background: To enable you to effectively know what you are talking about and trying to get across to officials at certain meetings you will need to do a little research. You will have to locate and document some of the following:

1. The number of human service agencies which offer or

need transportation to get their clients to or from the various functions and locations. Some of the agencies in this category are; The Area Agencies on Aging, Community Action Programs, The United Cerebral Palsy, Department of Public Assistance, Easter Seals, Cancer Society. Day Care Centers, First Step Programs for children, vocational rehabilitation programs, nursing homes and many many more.

2. The number of vehicles now in use by each agency.

3. The transportation costs for each agency and the number of clients being served. (This will give you a pretty close cost per person).

3A Be sure when getting the costs that all costs are included such as: office workers wages, vehicle insurances, gas and oil, upkeep, tags, drivers wages and above all replacement costs (depreciation).

4. You will also need to know locations of the required transportation needs, the frequency of travel and in general the approximate number of one way trips by each individual or group of individuals.

If you are unable to get the necessary background information you need and I doubt that you will the format and idea may be enough to really get the interest of the planning commission. What they may suggest is a survey of the transportation needs of the community which all agencies should be asked to complete. That's the primary step in getting involved...the first step... getting the interest of your local planning commission.

#### Outline of Meetings & Subjects:

1. Planning Commission - Purpose: To establish a reliable cost-effective transportation system to serve the human service agencies, it's clients and the general public. To organize the transportation needs of all citizens and to save countless tax

payer dollars. The information you have gathered for your background information should give you enough to establish your own rates and compare them with the rates presently being used. This will provide you with the necessary documentation that you as private industry can provide the services being provided by the government agencies at a far lower cost.

2. The various meetings you may have for the next few months may include:

A. Individual meetings with the various individual human service agencies to get their interest into the system (this may involve ten to twenty more meetings).

B. More meetings with the planning commission to map out future meetings with the carrier providers and all other interested parties.

3. Three to five months into the program you should be ready for a general meeting of all interested parties including the planning commission, agency personnel, taxi and van service personnel, local transit authority and consumers.

The purpose of this meeting should be to plan your future concerns and ways to proceed. Some of the options which you may consider are: Establishing:

- A. A facility within an existing non-profit corporation to house the staff.
- B. A new corporation housed within a transit authority.
- C. A branch of the transit authority.
- D. A new non-profit corporation individual housed.

E. A non-profit corporation housed within a Taxi or Van Company.

In establishing any of the above there are a great many concerns which will have to be researched and developed, however the non-profit corporation type of a system will take quite a bit more time and effort.

Items and concerns which have to be researched and developed are:

A. Staff Funding. Locate and identify a possible funding source for the office and staff expenses. Possible sources which may be available from a State Act, Federal and State grants or local community development funds.

B. Company Policy or Non-Profit Charter. These are policies and By-Laws by which the Board of Directors (if you have one) and staff are obligated to operate.

C. Standard Operating Procedures. These are procedures by which the broker system will operate and may include items of concern such as those in the list of Standard Operating Procedures at the end of this presentation.

D. Operational Policies. These are policies by which the participating carriers may operate.

E. Sectors. The county may have to be divided into two or more sectors to fully provide the lowest possible cost and true integration of the transportation needs.

F. Staff. Choosing the staff to administer to the policies, paper work and brokering of the corporation. This also may include job descriptions for the staff.

G. Contracts. This may include the development of two or three different contracts. Example; One contract may be between the Corporation and the Agency and another may be between the Corporation and the carrier provider/s.



H. Driver Training Program. It may be necessary to develop a Sensitivity Driver Training Program to insure that the drivers are aware of the many problems they may encounter when transporting the elderly and handicapped.

I. Service Rates. Rates may have to be uniform throughout the entire service area or you may wish to use uniform rates only within the individual sectors.

J. Committees. It may be necessary to establish several standing committees which could include:

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1) Finance Committee                 | 4) Operations Committee          |
| 2) Personnel Committee               | 5) Nominating Committee          |
| 3) Evaluation and<br>Revue Committee | 6) Public Relations<br>Committee |

K. Tickets or Charges. It will be necessary to develop a ticket or charge system. The LISTS system mandates that all participating agencies have their out-reach case workers do the initial eligibility of each client and then provide the clients with a 6 months supply of tickets. The client then informs the service provider the day before the transportation is needed. When the ticket system is used it is not necessary for each client to call the staff at the broker corporation and then the corporation call the service provider. Tickets also provide an excellent documentation that the client was actually provided with the necessary transportation.

A very good way of establishing and monitoring all of the previous items of concern is to develop a task force and then assign certain committees to several of the concerns. When using a task force you should however elect a task force chair person to assign committees and items of concern. It could then be his or her duty to construct and implementation plan which in itself is a very useful tool.

PENNSYLVANIA'S PERFORMANCE INCENTIVE SYSTEM FOR THE  
RURAL PUBLIC TRANSPORTATION ASSISTANCE PROGRAM

Presented at The Sixth National Conference  
and Workshop on Rural Public Transportation

Gorham, Maine

by

Joseph L. Daversa

August 15, 1983



## INTRODUCTION

The role of the Pennsylvania Department of Transportation in transit system performance evaluations and performance standards was first formalized approximately ten years ago with the publication of the report Operating Guidelines and Standards for the Mass Transportation Assistance Program (1). During the late sixties and early seventies, Pennsylvania transit systems, and the funding agencies which they relied upon for continued support, experienced unprecedented escalation in operating deficits. This phenomenon, which certainly was not unique to Pennsylvania, was brought about by inflation-fueled expense increases coupled with the reluctance of most transit systems to raise fares to keep pace with increasing costs of operation. At the same time, many new publicly-owned (and subsidized) transit systems were formed out of failing private companies, thereby placing additional pressures on existing transit systems and funding agencies alike.

Realizing that State appropriations for public transportation could not keep pace with the increasing demand for operating aid, the Department embarked on an effort to restructure its operating assistance program to meet the basic funding needs of the transit systems, while encouraging individual systems to evaluate and analyze their operations with an eye towards improved efficiency and effectiveness. Throughout the balance of the 1970's, the Department developed and applied various grant determination methodologies designed to reward transit systems which exhibited improved performance as measured by both financial and non-financial indicators selected by the Department.

This effort, which was generally well received by the transit industry and the Pennsylvania General Assembly, set the framework for major legislative reform. The Pennsylvania Department of Transportation, the Pennsylvania Association of Municipal Transit Authorities (PAMTA), and the Fiscal Review Task Force of the State Transportation Advisory Committee cooperatively drafted, and the

Pennsylvania General Assembly approved, comprehensive reforms to the Commonwealth's public transportation legislation. The Pennsylvania Urban Mass Transit Assistance Law - Act 101 of 1980 - legally defines a formula methodology to be used by PaDOT in distributing urban transit operation assistance funding. The formula specifies that approximately 89% of available funds be distributed based on financial need, with the remaining 11% distributed to systems which demonstrate improved performance in any one or more of the following categories:

- increased ridership per vehicle hour
- increased revenue per vehicle hour
- "reasonable" growth in expense per vehicle hour
- revenue/cost ratio "slippage" of no more than 2% per year

Although the efforts described above, and the resulting legislation apply specifically to the State's urban transit assistance program, the experience gained through these efforts eventually had a significant influence on the manner in which the rural transit programs were established and administered.

#### PENNSYLVANIA'S RURAL TRANSIT ASSISTANCE PROGRAM

The "Pennsylvania Rural and Intercity Common Carrier Surface Transportation Assistance Act" - State Act 10 of 1976 provides the Commonwealth with comprehensive authorizations in the areas of rural public transportation technical and financial assistance. In Pennsylvania, state aid for rural and small urban transit systems is administered jointly with the Section 18 funds apportioned to the state. Since the program's inception, service to the general public has been emphasized as an important goal. Although coordination with and between social service transportation programs is also encouraged, each recipient of Section 18/Act 10 funds must demonstrate that all services are open to the general public and marketed as such.

The Department is currently funding twenty rural/small urban transit systems. A summary for the program for FY 82-83 is shown in TABLE 1.

TABLE 1  
PA RURAL TRANSIT PROGRAM SUMMARY  
1982-83

Number of Systems	20
Total Expense	\$ 5,881,000
Total Revenue	\$ 2,006,000 (34% of total expense)
Deficit	\$ 3,875,000
Funding	
Federal	\$ 2,246,000
State	1,129,000
Local	500,000

Rural Transit Grant Determination Methodology  
and Performance Bonus Program

The distribution of rural transit funding is generally determined according to demonstrated financial need (project deficits). However, a number of constraints related to eligibility of certain categories of expense, rate of growth in expenses, and cost recovery (revenue divided by cost) have been established in an attempt to constrain the growth in project deficits and to achieve equity throughout the program. The rate of growth in expense is constrained based on a transit industry cost index calculated for the entire state. Allowances are made for service expansion or extraordinary items on an individual basis. For ongoing projects, a cost recovery requirement of 30% is imposed, with first and second year projects being required to achieve 25% and 27.5% respectively. If a system does not generate sufficient revenue to meet the requirement, the revenue shortfall must be made up from local funding sources.

Historically, the state share has been calculated as two-thirds of the project deficit remaining after all project revenue and federal

funds have been applied (this deficit will be referred to as the state/local deficit). In 1982-83, the maximum state share was increased to up to 75% of the state/local deficit.

With the decision to increase the maximum State share of transit operating deficits under the rural transit operating assistance program, the Department evaluated the feasibility of awarding the additional funding on the basis of transit system performance as measured by various indicators. The evaluation considered (a) the Department's urban transit assistance performance bonus program, (b) data availability and reliability, (c) equity, and (d) administrative requirements. Based on this evaluation, the Department determined that the use of performance indicators to distribute the additional rural transit operating funding was feasible and in fact represented an equitable and cost-effective means of determining the distribution of additional funding, while at the same time encouraging improvements in the systems' efficiency and effectiveness.

It is important to note that no system will experience reduced funding as a result of the performance bonus system. Each system continues to be eligible for a basic state grant equal to two-thirds of the constrained state/local deficit. In addition, each system is eligible for bonus funding which could raise the state share from two-thirds to up to three-fourths of the state/local deficit. The significance of the additional bonus funding is highlighted when viewed from the perspective of maximizing the leverage value of local funds. A system which only qualifies for the basic grant can receive up to two dollars of state funding for each local dollar contributed to the project. In contrast, a system which qualifies for all available bonus funding can increase the state/local funding ratio to three to one: a 50% increase in the leverage factor.

An important feature of the new bonus program is that bonuses are not determined based upon peer group analysis or attainment of arbitrary performance standards. Rather, each system's performance is compared to its own performance in the preceeding year as a basis for determining whether bonus funding has been earned. This approach was chosen because of the diversity in operating conditions, ridership potential, organization/management, type of vehicles, system size and numerous other variables which preclude the derivation of universally applicable performance standards, and peer analysis.

### Performance Bonus Criteria

As noted earlier, the bonus criteria currently used for Pennsylvania's urban transit assistance program and the performance indicators contained in the Department's recently completed Rural Public Transportation Performance Evaluation Guide (2) were assessed for potential use as performance bonus criteria. In addition, numerous other indicators were considered. In selecting indicators from among those tested, emphasis was given to those that would not be difficult to measure, are universally recognized and acceptable measures of performance, and are highly indicative of the success of a system in meeting objectives of the program and individual systems. An attempt was also made to achieve a reasonable balance between financial and non-financial measures.

Computer analyses were made of a variety of the most commonly accepted indicators for which actual 1981 and 1982 data were available. Based on these analyses and the above considerations, the following four indicators were selected:

<u>Bonus Indicator</u>	<u>Objective</u>
total passengers/vehicle hour	maximize utilization of the services offered.
operating revenue/vehicle hour	maximize the financial viability and the degree to which a system is self-supporting.



Bonus Indicator

Objective

deficit/passenger

assure that users pay a fair share of costs and social costs are kept to an acceptable level.

accurate, on-time, and complete application

improve grants management and project administration

In applying the bonus system, the Department uses the two most recent years for which actual data are available. Extenuating circumstances such as extraordinary, one-time expenses or significant changes in service design are considered and appropriate adjustments made.

Definitions for the terms used in the bonuses are as follows:

Passengers - Total passengers including fare paying passengers, third-party contract ridership, and transferring passengers. Ridership generated through non-project services are not included.

Vehicle hours - Total vehicle hours including deadhead time.

Revenue - Total passenger revenue including farebox revenue, transit pass revenue, and third-party contract revenue.

Deficit - Total eligible project expense minus total project revenue.

Passengers per vehicle hour is sensitive to how effective the system has been in attracting riders from among the service area population; how effective management and sponsors have been in promoting and building the system; and whether the system has been careful to adjust service levels in relation to changes in demand.

Operating revenue per vehicle hour, is somewhat sensitive to the measures noted above but also provides an index of management's and the policy board's response to changing economic needs and decisions on fares.

Deficit per passenger, provides a measure of the system's dependency on public support. It is directly affected by local public policy and/or preferences regarding user fares versus public subsidization. For example, some localities may want to maintain relatively low fares and use extra local tax subsidies to make up the difference, while others may want to minimize deficits. Also, a substantial increase in operations without a commensurate ridership and operating revenue increase could drastically increase the deficit. Either way, it should be a conscious choice. Once the choice is made, any significant negative change in deficit per passenger is indicative of the need for some adjustment to operations, fare structure, and other factors (e.g. promotion, advertising) which affect a system's ability to attract riders.

One commonly used indicator of transit system performance, the cost recovery ratio, was not selected as one of the performance bonus factors. This was a conscious choice based primarily on the fact that the cost recovery requirement is applied during the calculation of the basic state grant, which comprises the majority of each system's state funding. Another reason for not selecting this measure was the diversity in the types of systems and their operating environments and the difficulty associated with establishing a "fair" standard for all projects.

Attainment of each bonus is evaluated individually and bonus funding is awarded according to the schedule in TABLE 2.

TABLE 2

PERFORMANCE BONUS WEIGHTS

<u>Indicator</u>	<u>Increase In State Share Of State/Local Deficit</u>
Passengers/vehicle hour	2 1/3%
Operating revenue/vehicle hour	2%
Deficit/passenger	2%
On-time, accurate, complete grant application	<u>2%</u>
Maximum Bonus	8 1/3%

While the Department's current urban bonus criteria (which are specified by law) place emphasis on cost and efficiency considerations, the indicators selected for the rural program are purposely less financially oriented in recognition of the fact that rural transit services typically have a stronger social orientation. This emphasis is appropriate since the environment for rural and small urban systems presents a greater challenge for attracting ridership than urbanized areas. In the case of the indicator related to grants management, the Department has routinely experienced delays in receiving complete and accurate grant applications from several projects, which hinders the ability to effectively administer the program.

Example Results of Applying the Bonus Criteria

To determine the impact of various performance bonuses on grants to rural transit systems, data for all 16 projects that received funding in both 1981 and 1982 were obtained from annual reports submitted by the systems. This is the same data that was used to analyze the merits of the other indicators that were tested before making the final selection of the four bonus factors.

Table 3 provides a summary of the bonus calculation results. The fourth criteria for grant submittal is excluded from the example since it is not practical to evaluate this item after the fact.

All 14 systems analyzed in Table 3 earned at least one bonus; four earned the maximum available and five earned two of three possible bonuses. The indicator achieved most frequently (12 of the 14 systems for which data was available) was operating revenue per vehicle hour. The other two indicators appear to be about the same in degree of attainment difficulty.

The bonus for accurate, on-time, and complete applications should be easily attainable by any system which makes a conscious effort to comply with application requirements.

TABLE 3  
SUMMARY OF BONUS CALCULATIONS -- 1981-1982

<u>SYSTEM</u>	<u>PASSENGER/ VEHICLE HOUR</u>	<u>OPERATING REVENUE/ VEHICLE HOUR</u>	<u>DEFICIT PASSENGER</u>	<u>TOTAL BONUS ITEMS</u>
Cambria	Yes	Yes	Yes	3
Carbon	Yes	Yes	No	2
Centre	Yes	Yes	No	2
Crawford	Yes	Yes	Yes	3
Cumberland	Yes	Yes	No	2
Lebanon	No	No	Yes	1
Warren	Yes	Yes	Yes	3
Westmoreland	No	Yes	No	1
ATA	*	*	Yes	*
Bucks	*	*	Yes	*
Indiana	No	Yes	Yes	2
DuBois	No	Yes	No	1
Sharon	No	No	Yes	1
Mid-County	Yes	Yes	Yes	3
Monroe	Yes	Yes	No	2
New Castle	No	Yes	No	1

\* Vehicle hours not available for both years.

NOTE: To qualify for the above bonuses, passengers/vehicle hour and revenue/vehicle hour had to have increased or stayed the same from 1981 to 1982; Deficit/passenger must have decreased or remained the same.

Using the above bonus values, Table 4 illustrates the increase in the State share of the state/local deficit for each system.

TABLE 4  
RESULTS OF HYPOTHETICAL PERFORMANCE BONUS CALCULATION

<u>SYSTEM</u>	<u>INCREASE IN STATE SHARE OF STATE/LOCAL DEFICIT (%)</u>
Cambria	6-1/3%
Carbon	4-1/3
Centre	4-1/3
Cumberland	4-1/3
Crawford	6-1/3
Lebanon	2
Warren	6-1/3
Westmoreland	2
Indiana	4
DuBois	2
Sharon	2
Mid-County	6-1/3
Monroe	4-1/3
New Castle	2

\* The Bonus Percentage figures do not include the two percent for an on-time, complete, and accurate grant application. Thus, the maximum any system can have in this table is 6-1/3%.

## SUMMARY AND CONCLUSIONS

Transit operating aid in Pennsylvania for approximately the past six years has been distributed, at least in part, on the basis of individual systems' attainment of certain "performance" standards established by the Department. The procedure has been used successfully in the urban transit assistance program and has recently been adapted to the rural transit program. The concept of encouraging improved performance is equally pertinent to both urban and rural transit systems. However, in establishing indicators of rural transit system performance, the non-traditional nature of many of the services and the diversity in operating environment and service design precludes the straightforward application of urban transit performance measures to rural programs. Also, care must be exercised in attempting to develop uniform standards of performance, based on aggregate data, for application to individual systems. In Pennsylvania, where there are approximately twenty transit systems participating in both the urban and rural transit assistance programs, it was determined that peer comparisons would not be meaningful. Therefore, incentive grant decisions are made based on a review of individual system performance trends. This method appears to achieve a higher degree of equity without compromising the incentive for system performance improvements.

The fact that the basic funding needs and commitments are not jeopardized by the conversion to a performance-based grant methodology is crucial to the success of the program. It would be counterproductive to penalize "weaker" systems by cutting their financial base to the point where services were terminated.

One of the major benefits of the program is that the Commonwealth's lawmakers, which must appropriate state transit aid annually (Pennsylvania transit systems have no dedicated source of transit funding), are much more receptive to requests for funding under the current system. They appear to be satisfied that the

methodology includes adequate incentives for efficiency and disincentives for flagrant waste of public funds. Their acceptance is evidenced by the dramatic growth in state transit funding over the past several years while other state appropriations have either been reduced or constrained to minimal increases.

The success of the program, in terms of improved efficiency and effectiveness in individual transit systems, is extremely difficult to measure. This is due to the fact that there have been numerous changes in other factors affecting transit systems during the period since the incentive grants program was established. Some obvious examples of these are the fluctuations in the price and availability of gasoline, threatened phase-out of federal operating assistance, and the actual cutbacks in federal operating aid experienced by many transit systems.

Overall, the program appears to be successful because of the generally positive trends observed in transit systems' cost, cost recovery and ridership. Also, the program has been successful in focusing attention on the importance of continuing evaluation of a transit system's ability to serve the demand for public transportation in as economical, but effective a manner as possible. Although encouragement of performance improvements is certainly a proper role for states which provide transit aid, it is by no means a substitute for in-house performance monitoring and performance evaluations by transit systems themselves. In this regard, the Pennsylvania Department of Transportation has published the Rural Public Transportation Performance Evaluation Guide (2) for rural systems, and the Transit System Performance Evaluation and Service Change Manual (3) which is oriented to small/medium-sized urban bus systems. These reports should be referred to for additional information on the Department's technical assistance efforts.

## BIBLIOGRAPHY

- (1) Operating Guidelines and Standards For The Mass Transportation Assistance Program, Commonwealth of Pennsylvania, Department of Transportation, 1973.
- (2) Rural Public Transportation Performance Evaluation Guide, Carter Goble Associates, Inc. and the Pennsylvania Department of Transportation, 1982.
- (3) Transit System Performance Evaluation and Service Change Manual, Simpson and Curtin, a Division of Booz, Allen & Hamilton, Inc. and the Pennsylvania Department of Transportation, February 1981.





**Pennsylvania's Performance Evaluation Guide:  
Its General Purpose, Development and Use**

prepared for presentation at

**The 6th National Conference On Rural Public Transportation:  
Workshop on State DOT Perspectives on Rural Transit Performance**

**Robert T. Goble**

**Carter-Goble Associates, Inc.  
August 1983**



## RURAL TRANSIT IN PENNSYLVANIA

Those who are familiar with the history of transit in the U.S. know that Pennsylvania has one of the longest and most extensive legacies in transit of any State. Before there was an UMTA Section 18 program, Pennsylvania had its own State financial assistance program for urban, rural, and intercity bus transit. Long before there was a need for major public involvement in transit finance, Pennsylvania had privately operated transit systems throughout its small urban, suburban, metropolitan and rural areas. In addition to having private taxi companies throughout its rural areas, Pennsylvania has about 180 private bus companies that operated fixed route, subscription, work trip and intercity services long before there was any federal or State financial assistance programs.

Emphasis on publicly-sponsored rural transportation began in 1972 through various funding programs of Pennsylvania DOT, the State Department of Agriculture, the Community Services Administration, and the Appalachian Regional Commission. This initial public support was primarily through operating subsidies for demand responsive systems in 23 counties and the Free Transit Program for reimbursing fare loss for senior citizens riding free on fixed route systems during off-peak.

By 1976, Act 10, the "Pennsylvania Rural and Intercity Common Carrier Surface Transportation Assistance Act" was passed and authorized PaDOT to provide operating and capital subsidies to rural public transportation systems. Consequently, many rural systems which had started with demonstration or short-term public financial assistance were now assured of

an annual source of operating assistance. Prior to Section 18, the State paid two-thirds of the annual operating deficit. When Section 18 came on-line, the non-local share of funding was thus increased and the local share reduced.

## **RURAL MANAGEMENT ASSISTANCE AND WHY THE GUIDE WAS DEVELOPED**

In 1978, PaDOT decided that a Statewide technical and managerial assistance program for rural and small urban systems was needed essentially for two reasons: 1) to help viable rural public systems improve their effectiveness and efficiency; and 2) to help other human service agency-oriented systems to transition into being true public systems if possible and where local leadership desired to do so. A total of 25 rural and small urban systems were included in the program of technical assistance.

The first two years of the assistance project were spent almost solely in providing one-on-one consulting assistance directly to the managers of rural and small urban systems. While the program was found useful and provided significant aid, especially to those systems attempting to transition into a full public service, something else also seemed to be needed. The performance and productivity of many systems that had been operative for some time continued to lag and show statistics that indicated that there was definitely room for improvement.

It appeared that many systems and probably most all of those that began with a human service agency orientation had been accustomed to giving primary emphasis to high level service and the highest quality of service but not nearly as much concern for economy, cost efficiency, and productivity. In short, the business and financial aspects of service provision had frequently taken a back seat to social objectives. I might add that this finding is by no means unique to Pennsylvania.

The previous year, PaDOT had developed a performance manual for large urban fixed route systems which was found to be useful. Also, for the State's large urban area funding assistance grant program, a bonus program had been in place whereby systems that met or exceeded certain performance criteria, extra State financial operating assistance, above the minimum level, would be awarded. PaDOT decided that these same general principals could be applied to rural and small urban systems, although obviously with different criteria and different types of expectations.

A written performance evaluation guide would not only leave the systems with a manual they could refer to and use repeatedly, but would also be useful in obtaining the State's bonus funding. The idea of a written guide and the bonus program went hand-in-hand with one providing incentive to use the other. PaDOT's bonus program reviewed by Joe Diversa was developed from the research and analysis done for preparing the indicators in the Performance Guide.

## PURPOSE AND PHILOSOPHY OF THE GUIDE

In 1981, PaDOT decided to develop the performance evaluation Guide as part of its continuing Rural Management Assistance Program. In keeping with PaDOT philosophy and position, the following objectives were established:

1. The Guide was to be developed for use by system managers to aid them in performing their own monitoring, evaluation and improvement of their systems;
2. It should be self-contained, readily usable, and not require instruction assistance;
3. It should use system data that is readily available and not require the collection of new or unusual data;
4. For systems that already do performance evaluation, it should enable a better organization of the evaluation and/or an expansion of its scope; and
5. It should be a "self-help" tool and not the imposition of State regulation.

While it was not formally set as an objective for the Guide, it became apparent during its development that it could also help local governing bodies to make decisions on transit and paratransit policy and future direction for a system.

## HOW THE GUIDE WAS DEVELOPED

In late 1981, the overall concept and outline for the Guide was developed collaboratively by PaDOT and Carter-Goble Associates. A literature search was made and other state DOT's who had done some work on performance evaluation were also contacted to learn of their experiences. Work done in California, Iowa, Indiana, Michigan, New York, and California was helpful. Some of these states also proved to be a good source of comparative performance data that was later incorporated as a reference appendix in the Guide.

At the time, however, no one had developed quite what PaDOT was after. Also, the Pennsylvania evaluation manual for large urban fixed route systems by Simpson & Curtin was just that. It was geared to urban conditions and the characteristics of fixed route operations only. The rural Guide had to be usable for rural conditions, small staffs, and non-fixed route as well as fixed route operations. This "wheel" had to be invented.

At the outset, it was decided to compute all possible and known quantitative indicators of cost efficiency, cost effectiveness, production efficiency, service quality, and safety. It was felt that all indicators used should be quantifiable and ideally capable of being expressed as a ratio for consistency and simplicity in computation. A total of 62 indicators were placed in the Guide from a universal collection of about 80 indicators. Initially, it was also decided that the Guide should offer numeric values for all indicators that were found to reflect the range from



low to high levels of performance and productivity based on large scale data collection and analysis of systems in Pennsylvania as well as other states.

Thirdly, it was decided that the Guide should also give the user specific alternatives for taking corrective actions when deficiencies or suspected low values were found. Corrective actions would be in the form of specific actions effecting operations, management or finance that could be implemented by the system manager.

Fourth, it was agreed that the Guide should be developed so as to allow both internal time series comparisons and goals achievement analysis plus external comparisons for those who wanted to do so. This latter type of comparison was to be approached very cautiously because of the variety of environmental factors and externalities that could easily make any two seemingly similar systems not comparable.

Fifth, it was acknowledged that definitions of data were critical and needed to be standardized especially if external comparisons were to be made. Consequently, much care was given to developing precise definitions for all data items that were otherwise not perfectly clear. Due to State funding policy, for example, it was necessary to define fare-paying passenger revenue and passenger revenue specifically as it applies in Pennsylvania due to policy for the use of certain State grant programs.

Finally, it was decided that a case study, giving an example of how the Guide could be applied should be included to further simplify its use.

It was felt that this case study would not only help attain the objective of enabling the Guide to be as easy to apply as possible, but also avoid the need for personal instruction.

A preliminary draft of the Guide was reviewed with system managers in a workshop in Harrisburg in early 1982. While it was generally well received, there was one part of the Guide that was not well received plus had been found very difficult to complete. This was the recommendation of low to high standard numeric values for selected indicators.

Not only did the research team find it almost impossible to settle on low to high values for several of the 18 indicators, but the idea itself proved to be unpopular with the system managers, and rightly so. Moreover, when stratification by small urban versus rural and fixed route versus demand response, flexible fixed route and route deviation was attempted the task became much more complicated. As a result of this research, it was the consultant's and PaDot's conclusion that until the "state of the art" of rural systems data standardization and collection is substantially improved, a large scale data effort such as the one attempted is not worthwhile.

A strong consensus emerged between all parties that rather than specifying ranges, a better approach would be to simply make systems indicators from Pennsylvania and other states' available in the appendix of the Guide for anyone who wanted to make their own external comparisons. Standards or norms would not be recommended. Also, it was decided that any

system manager wanting to make external comparisons would need to make their own data collection efforts to be sure that only data from comparable systems and operating environments is used. This was probably one of the most important lessons learned from developing the Guide.

We went back to the drawing board from this milestone meeting in Harrisburg and finalized the manual as it is today. The final version was presented to Pennsylvania's rural and small urban managers this past February in another workshop in Harrisburg. Shortly thereafter, PaDOT reproduced the Guide and distributed copies to all managers. It is in use today in Pennsylvania as well as other areas where managers have heard about it. Probably by this winter, PaDOT will have some indication of how widely the Guide has been used. USDOT's Technology Sharing Program plans to make copies available nationally this October.

## **HOW THE GUIDE IS ORGANIZED AND APPLIED**

As indicated earlier, the Guide was kept as simplistic and straight forward as possible. Following is a copy of the Table of Contents, which is the easiest way to summarize its content and sequential flow.

## **Chapter I - Introduction, Purpose and Procedures**

### Introduction and Purpose

#### Procedures

1. Establish Goals and Objectives
  - Transportation System Goals and Objectives
2. Select Functions to Evaluate and Indicators to Use
  - General Indicators
  - Supplemental Indicators
3. Collect Data and Tabulate Indicators
4. Analyze and Interpret Performance Indicators
5. Take Corrective Actions and Monitor

## **Chapter II - Evaluation Indicators, Interpretation and Corrective Actions**

### Introduction

#### Financial Performance

- Expense
- Revenue
- Subsidy

#### Non-Financial Performance

- Ridership
- Service Quality
- Level of Service
- Safety

## **Chapter III - Case Study**

### Introduction

#### Example Performance Evaluation: Example County Transit Authority

- Purpose
- System Overview
- ECTA Goals and Objectives
- Functions and Indicators to Evaluate
- Tabulation of Indicators
- Analysis and Interpretation
- Recommended Corrective Actions

## **Appendices**

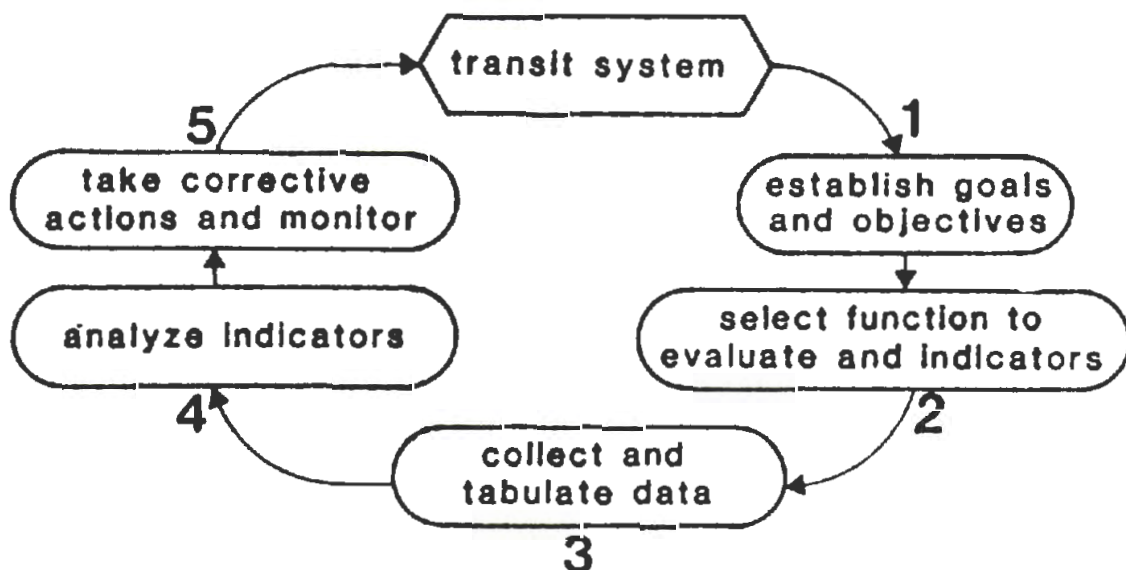
Appendix A - Glossary

Appendix B - Comparative Performance Data

As noted, Chapter I explains the intent of the Guide and the sequence of procedures that should be followed in conducting performance evaluations. Chapter II provides and explains the indicators available by: 1) functional category; 2) purpose and use; 3) data required and definitions; 4) interpretation of results; and 5) corrective actions available. Chapter III uses a hypothetical one-county transit system case study as an example of how to prepare an overall performance evaluation report. All definitions are given in the text at the first time they are used and repeated in Appendix A. Appendix B contains profiles and data for 17 Pennsylvania systems plus comparative data for similar systems in Indiana, Iowa, and Michigan. Again, this data is presented for use by managers at their discretion.

The Guide's sequential procedures as outlined in Chapter I consist of five major steps including: 1) establishing system goals and objectives; 2) selecting system functions to evaluate and the indicators to be used; 3) collecting data and calculating the indicators results; 4) analyzing and interpreting the performance indicators; and 5) taking corrective actions and monitoring the results. The following diagram summarizes the five steps in the performance evaluation process.

### PERFORMANCE EVALUATION STEPS



**Step 1 - Establish Goals and Objectives** proposes the basis of evaluation to be the use of adopted goals and objectives which become the benchmarks for comparisons of results each time an evaluation is conducted. Some goals and objectives that are not quantifiable are also recommended as being useful to expand the scope of the evaluation. Examples of quantifiable objectives are given under the categories of: financial, ridership, service quality, level of service and safety. Examples of non-quantified objectives are also given under the categories of: public relations and support, passenger amenities, personnel, and management. Since time series comparisons of a system's data was found to be a much sounder and safer form of evaluation, it is important that systems begin to establish benchmarks for their own productivity if they haven't before.

**Step 2 - Select Functions to Evaluate and Indicators to Use** requires a decision as to whether all aspects or only certain parts of the system should be evaluated and at what level of detail. To aid the user in this decision, each class of indicators starts out with a discussion of the "purpose and use" of the indicators. Financial indicators are divided into the three categories of expense, revenue, and subsidy and have the largest number of indicators compared to non-financial indicators which includes ridership, service quality, level of service, and safety. Generally, the financial indicators measure cost efficiency, cost effectiveness, and production efficiency whereas the non-financial indicators generally cover consumption effectiveness, service quality, and a few production efficiency measures.

The seven categories of indicators are subdivided into "general," "supplemental," and "other" indicators. As noted earlier, "general indicators" are those which have the broadest level of measurement and can be used for the most general time series comparisons or external comparisons. "Supplemental indicators" are recommended for use when more detailed analysis is needed. Unlike general indicators, they examine less than whole values such as revenue miles instead of total vehicle miles or administrative cost instead of total cost.

**Step 3 - Collect Data and Calculate Indicators** usually requires the application of readily available data and the calculation of ratios and in a few cases, just simple tabulations. All data elements required are defined except for unquestionable items. It is recommended that twelve month data be used for the most accurate evaluations.

Quarterly monitoring and reviews are also recommended but extreme care advised by the evaluator to be sure to understand and be able to account for significant financial, service or ridership fluctuations resulting from cash flow timing, unusual weather, major economic shifts, or other externalities that may only temporarily show unusually high or low trends. Regular monthly monitoring and quarterly analysis is felt to be important since it can help managers detect and keep on top of problems or negative trends and helps corrective actions to be taken before a problem becomes severe.

**Step 4 - Analyze and Interpret Performance Indicators** is the point in the process at which a determination needs to be made as to whether

performance is satisfactory or not. As already noted, the three methods of analysis are: 1) time series data comparisons (e.g., 1982 to 1983, first quarter 1982 to first quarter 1983, a three year trend, etc.); 2) goals achievement analysis; or 3) external comparison to data for other systems. When suspected low values occur for a "general" indicator, the next step should be to examine the results for selected "supplemental" indicators under the same category. This more detailed look can help pinpoint or give insight into the nature of a problem. For the expense indicators, there is also the 26 "other" indicators which can provide even further detail. As discussed earlier, caution is urged if external comparisons are made.

Step 5 - Take Corrective Actions and Monitor closes the evaluation cycle. This is the most challenging and creative part of the evaluation cycle at which point the manager must decide what, if any, corrective actions are needed, carry out the actions, monitor their results and make adjustments if needed. At the end of each functional category, a list of alternative corrective actions that will effect indicators in that category is provided to assist the user in deciding on a course of action.

## POTENTIAL VALUE OF THE GUIDE

The target market for this Guide is rural and small urban system managers. For those managers or systems that have never conducted a systematic performance evaluation, its benefits are clear. As noted earlier, it can also be useful to the more experienced managers as a source guide for better arranging and/or expanding the scope of



evaluations. In either case, it can help a manager make sure that all facets of a system are explained and that no stone is left unturned in striving for a system's self improvement. More optimistically, the Guide will hopefully improve the system's business management efficiency.

It also has potential benefit as an organizing tool for management information systems. While an entire MIS would not be based on the Guide, most of the needed system monitoring and evaluation output of management information systems could be structured from the Guide.

Finally, the Guide has potential for states interested in standardizing certain data collected statewide. It could be useful in advancing the "state of the art" in small system data standardization, spoken of earlier, that could make external system comparison much more practical on a large scale basis than it is now. Those of you who've tried to use UMTA's Section 15 National Annual Report for small systems know how far we have to go in that regard. To the extent that a state DOT urged or even required the use of some such tool, the quality and comparability of system data within that state would probably be improved.

Developing Performance Audits

for

Transit Systems

Prepared for:

The Sixth National Conference on  
Rural Transportation

Portland, Maine

Prepared by:

M. Ann Palmer  
South Carolina Governor's Office  
Division of Transportation

June, 1983



## Developing Performance Audits for Transit Systems

How can my transportation system improve in operations efficiency?

As a manager of a rural transportation property, how can I be sure I am selecting the most cost effective alternatives?

How can my system be compared to a system that has almost twice as many vehicles?

How can I measure my system's efficiency without hiring a professional analyst?

Do any of my present employees even have time to add an additional in-house evaluative responsibility?

Am I able to evaluate my system objectively?

How do I begin?

Operators of small rural transportation properties sometimes feel isolated when they begin to consider questions relating to their system's performance. In most cases, they operate on a bare bones budget with limited professional staff members. They probably understand the value of management information systems, but they usually cannot afford to hire a consultant to do the specialized work for them.

The Governor's Division of Transportation, the state administering agency for Section 18, had been hearing many of these same concerns from their South Carolina grantees. Similar questions were also being asked by the state administrators. Proper, accurate, consistent, and monthly data was not easily obtained from the transit systems.

In order to begin to answer these collective problems during <sup>the</sup> 1982-1983 funding period, the South Carolina Governor's Division of Transportation and the South Carolina Interagency Council on Public Transportation proposed a consultant contract entitled "Management Evaluation and Development Assistance." The purpose was envisioned to be two-fold: to make direct management and operations audits of the six Section 18 transportation entities and to provide technical assistance to these transit properties and other new systems that may evolve during the year.

The two state transportation offices developed a Scope of Study (Exhibit #1) which broadly outlined the activities to be accomplished, and the state procurement department carried out the established bid procedure. Out of the five

transit consulting firms that submitted proposals, the bid was awarded to ATE Management and Service Company, Inc.

After the bid award, ATE and the State worked together to develop a detailed contract scope (Exhibit #2). Considered in these discussions were the approach, the method, and the areas to be audited.

ATE presented a series of management performance audits they had developed for assessing the strengths and weaknesses of the various functional areas of public transportation systems. A series of audit guides were approved by the state for utilization by the ATE team in performing each agency analysis. It was decided that ATE would provide a data and technical analysis of six functional areas:

- General Administration
- Operations
- Maintenance
- Finance
- Specialized Transportation
- Marketing

All parties concurred that performance evaluations are best accomplished when actual results are compared to goals that are realistically established by management. These targets serve as reference points by which management decisions are made. The major quantitative technique (i.e. actual results) used by ATE in conducting performance audits is the PERFORMANCE INDICATOR.

Performance indicators are designed to provide a quick measure of various aspects of the transit system's health and welfare in a single number. Many performance indicators are ratios of input to output. The ratios are presented in percentages or fractions which are, therefore, not immediately sensitive to the scale of the operation.

The purpose of a performance indicator is purely diagnostic. The performance indicator does not answer questions; it presents questions that must be answered by way of a decision tree (Exhibit #3) or some other problem-solving technique. Performance indicators provide a set of measures by which policymakers and management may evaluate the efficiency of the transportation operations. In short, they are nutshell guides to performance.

#### Examples of PERFORMANCE INDICATORS

CATEGORY	INDICATORS
Service Quality: A measure of service as the public experiences it	Percent on Time Percent Missed Trips Miles/Accident Complaints/Thousand Miles
Service Productivity: A measure of service utilization by riders	Passengers/Hour Passengers/Mile Average Fare

CATEGORY	INDICATORS
Cost Effectiveness: A measure of the dollar cost of various components of the operation	Cost/Mile Cost/Passenger Subsidy/Passenger Farebox Recovery Percent
Maintenance Efficiency: A measure of the effectiveness of the utilization of maintenance procedures	Maintenance Labor Hours/ Thousand Miles Miles/Road Call Percent Maintenance Overtime Actual/Scheduled Inspections Miles
Organization Efficiency: A measure of the organization's ability to achieve its mission	Supervisory Ratio Mechanics Ratio Revenue Hours Per Employee Administrative Labor Ratio

For performance indicators to be valid and to be valuable, each must be specifically defined. To obtain data related to percent on-time service quality, the definition of "on-time" must be established. For example, the definition of on-time performance might be: no minutes early up to 5 minutes late (-0+5). Similarly, in measuring complaints per thousand miles, the term complaint could be defined as complaints logged at the terminal, logged by the drivers, and on-file complaint forms completed by customers. Furthermore, miles would be defined as revenue miles (Exhibit #4). Other performance indicators may be defined as listed below.

Percent on Time measures the percent of trips arriving at a specified time point zero minutes early and not more than five minutes late. This is an important measure from the public's point of view, since it is also a measure of the public's likelihood to miss an early bus or wait an unexpected length of time for a late bus.

Percent Missed Trips is a measure of the scheduled fixed-route trips not begun or not completed. This is also an important indicator from the public's point of view from the perspective of reliability of the overall service.

Per Miles/Accident is the number of platform miles (revenue miles plus deadhead miles) divided by the number of accidents occurring during the period. It is an important measure of the public perception of the system's safety and of driver training.

Per Complaints/1000 Miles is the number of complaints received divided by the number of revenue miles in thousands. This is also an important indicator of public perception of the quality of service.

Passengers Per Hour is the total number of passengers counted divided by the number of revenue hours in the period. As an effectiveness measure of system patronage per unit of produced service, this indicator is affected by the peak/off-peak ratio, hours of service, vehicle capacity, and average trip length. This



is a more appropriate measure for demand-responsive service.

Passengers Per Mile simply measures the same provision of service as passenger per hour except in terms of revenue miles rather than revenue hours. It will differ from Passengers Per Hour where elements of service vary significantly in average speed. This is a more appropriate measure for fixed route service.

Average Fare is the total revenue collected during the period divided by the total number of passengers counted during the period. It provides a period-to-period measure of change in ridership profile.

Cost<sup>Per</sup> Mile is the total operating cost for the period divided by total revenue miles for the period. As an efficiency measure of total inputs per unit of service provided (miles), this indicator is affected by a system's peak/off-peak ratio, hours of daily service, and labor utilization.

Cost Per Passenger is <sup>the</sup> total operating cost divided by the number of passengers counted during the period. This is an overall performance measure for the transit system, combining efficiency (total operating costs) with the system's effectiveness (passengers). It serves the function of bringing together these two aspects of performance evaluation into an integrated ratio. One significant limitation with this measure is that it ignores operating revenues. A system that charges extremely low fares, thereby attracting more passengers, looks very good in this measure even though its operating ratio may be very poor.

Subsidy Per Passenger is the total sum of all subsidies divided by the number of passengers during the period. For purposes of calculating the subsidy for each four-week period, it is approximately equal to the operating deficit for that period. Subsidy-per-passenger responds to the limitation in cost per passenger by incorporating farebox revenue or the lack of farebox revenue.

Farebox Recovery Percentage is farebox income as a percent of total operating costs. It measures the degree to which the cost of operations is supported by riders. In many cases, farebox recovery percentage is an operating standard imposed at the policy level.

Maintenance Hours Per Thousand Miles is the number of maintenance labor hours divided by thousands of revenue miles. It is a measure of the effectiveness of the utilization of maintenance labor as a resource.

Miles<sup>Per</sup> Road Call is the number of total miles divided by the number of road calls due to mechanical failure. While there may be road calls for other reasons, this indicator is designed to measure the effectiveness of the preventive maintenance program, so it is intended to measure only those road calls which are due to mechanical failure.

Percent Overtime is the measure of labor hours utilized at overtime rates and may indicate either an unusual maintenance problem or the need for additional maintenance staff.

Miles Per Actual<sup>Scheduled</sup> Inspections: Actual inspections are compiled by the maintenance department. Inspections are scheduled on a mileage basis. Scheduled inspections can be calculated by dividing the number of actual miles during the period by the

number of miles between inspections (e.g., 5,000). This indicator is a measure of the degree to which the preventive maintenance program is being executed.

Supervisory Ratio is the number of non-supervisory employees divided by the number of managers and supervisors. It is a measure of span of control and indicates if there are too many<sup>^</sup> too few supervisory and managerial personnel.  
Or

Mechanics Ratio is the number of vehicles divided by the number of mechanics. It is an indication of the mechanics' staffing level and shows whether the system has too many or too few mechanics.

Revenue Hours Per Employee is the total number of revenue service hours provided by the system annually divided by the total number of employees. Since revenue service hours is an indication of the amount of service for each employee in the system, it is an indication of organizational efficiency in personnel management.

Administrative Labor Ratio is the total general administrative labor (compiled in the Section 15 Report) divided by the sum of the operations, vehicle maintenance, and non-vehicle maintenance labor. Since operations, vehicle maintenance, and non-vehicle maintenance labor are considered to be direct costs and general administrative labor indirect, its ratio is an indication of whether the system has too many or too few administrative personnel. The index also indicates whether there is a disparity between direct and indirect salary rates if the number of general administrative personnel appears satisfactory. This indicator is best viewed over a period of time to assess whether the administrative labor portion of the system cost structure is increasing relative to the direct labor portion.

In addition to monthly performance indicators, the most benefit can perhaps be derived from tracking performance indicators over time. This system of trend analysis can be more locally valuable than comparing a system's indicators to industry standards one month at a time.

A trend analysis looks at the movement of the performance rather than at a snapshot of only one month of indicators. Rather than looking at one set of monthly numbers, the monthly indicators are viewed over a period of time.

Maintaining master charts with updated monthly indicators is a good way to keep trend analysis information (Exhibit #5). If a picture is said to be worth a thousand words, then a graph may be worth a thousand numbers. In a glance, one can see the overall statistical image. Detailed information is kept elsewhere in the transit information system.

Because numerous performance indicators have been developed and analyzed, top management and policymakers must decide which are required and appropriate for their particular situation (Exhibit #6). Which are meaningful and valuable? The State of South Carolina and the consultant agreed on the performance indicators that were to be used in the management audits.

During Phase I of the project, ATE made on-site visits to each of the transit properties. During these visits, the ATE team interviewed employees, observed



the system's operations, and obtained data from agency files.

The result of Phase I produced a written audit report on each system. The reports provided detailed observations of the six functional areas and specific recommendations for improvements. Distribution was limited; each report was made available to the State and to the individual property only. The transit properties were given the opportunity to comment and to request corrections prior to the final printing of each report.

During the Phase I (the audits) portion of the project, one area that required immediate attention was sited. The state chose to utilize some of the Phase II (technical assistance) portion of the contract to take prompt corrective action on this problem.

After the completion of Phase I, the State was left with the decision of how to make the most valuable use of the staff-hours remaining in Phase II of the contract. It was decided that an intensive group-training workshop would be held for four days.

During the four-day workshop, the consultants trained the group in the areas where common weaknesses were noted in all of the transit properties. In order to deal with problem areas unique to an individual property, the consultants made each lunch break and evening open for one-on-one meetings with the transit operators and their staff. It was during these one-on-one meetings where individually unique (and perhaps sensitive) problems were discussed candidly with the operators.

The contract staff-hours remaining in Phase II after the workshop were earmarked for four final short-term technical assistance activities. Two of these projects benefitted all of the properties (insurance coverage analysis and computer software development), the third concentrated on one property's proposed maintenance and office facility, and the remaining time was spent with the one new system that had begun during the year.

The Management Evaluation and Development project proved to be helpful to the state administering offices and to the Section 18 transit providers. Some benefits from the performance audits were immediate and many will be long term. All systems have the recommendations made for their particular systems with benchmark time frames for implementation. They know what kinds of data to maintain monthly to be useful in the analysis of their operation. The State has a new method for tracking trends of the systems. Special technical assistance was obtained for other efforts that were in-progress and that were interrelated. The Management Evaluation and Development project will bring benefits to the transportation programs in South Carolina for many years.

FROM: Request for Proposals to Provide Management Evaluation and Development Assistance

Section A  
Scope of Study  
Management Evaluation and Development Assistance  
1982-1983

HISTORY: During fiscal year 1981-1982 (July 1, 1981 through June 30, 1982), the State of South Carolina provided nearly \$509,000 in State and Federal (Section 18) operating assistance to five rural public transportation operations throughout the State. These operations altogether serve 14 or 30 percent of the State's 46 counties. For fiscal year 1982-1983, the number of operations receiving assistance has increased to six, and existing operations expanded into other counties which, conceivably, could be serving 16 or nearly 35 percent of the counties in the State. In addition, there are about two counties with the potential to initiate rural transit service within the next two years.

PURPOSE: The Division of Transportation in conjunction with the South Carolina Interagency Council proposes to establish and implement a Management Evaluation and Development Program which will make direct management and operations audits and provide technical assistance from a consultant available to new and existing rural and small transit operations. It is the intent of the State to eventually expand this service to other forms of transportation as additional funds become available.

ACTIVITIES: The responsibility of the consultant will be to develop a series of measurable management, operating, maintenance and financial related performance standards upon which the six Section 18 properties will be audited.

The specific activities which are to be audited include:

- A. Promoting the system, vehicle advertising, advertising techniques, and effective use of media.
- B. Determining vehicle requirements to meet demand in a service area.
- C. Review of operational plans, including scheduling, counting, and dispatching procedures.
- D. Evaluating fare structures, staffpower assignments, and training.
- E. Analysis of maintenance, operational and financial controls.
- F. Assisting in the development of intergrated and coordinated transportation services, including the evaluation of social agency transportation costs, service requirements, routing and scheduling options. Emphasis will be placed on itergrating client transportation into a public transportation system.
- G. Any other management and operation functions which effect the property's performance.

The results of the audits will be used by the properties and the State to take an objective look at the properties. The consultant will be required to provide technical assistance to make appropriate changes. These audits will be done property by property with the results available only to the property being audited and to the State.

FROM: ATE and State of South Carolina Contract

SCOPE OF SERVICE

The scope of services is divided into two phases:

Phase I - Conduct Management Evaluation and Functional Performance Audits

Phase II - Provide Technical Assistance for the Implementation of Audit Recommendations and Other Areas as Required

The allocation of labor by task for Phase I and Phase II at a minimum 348 and 488 hours, respectively, with a total of 80 hours scheduled for clerical labor for both Phases. All checklists, performance indicators, and data review lists must receive prior approval by the Division of Transportation (DOT) before utilization.

Phase I - Functional Management Performance Audits - Six functional areas are identified:

- General Administration Audits
- Operational Audits
- Maintenance Efficiency Audits
- Financial Audits
- Specialized Transportation Review
- Marketing Audit

For each of the six systems, the following tasks are to be performed. It should be noted that the Greenville Transit Authority is undergoing a major transition, therefore requiring the consultant to spend less than an equal share of time auditing the Greenville property. The first three systems to be audited shall be the Santee-Wateree, Pee Dee and Beaufort-Jasper Regional Transportation Authorities.

Task I - General Administration Audit

Representatives of the consultant will meet with the appropriate management and staff personnel to collect existing data and observe the policies, procedures, and practices of the system. Areas to be audited include:

- Supervision
- Personnel Policies
- Worker Utilization
- Training Programs
- Staff Size and Composition
- Labor Requirements
- Space and staff configuration of work space
- Compliance with Federal Regulations (A-102)
- Insurance Requirements

## SCOPE OF SERVICE (continued)

The consultant will collect and/or develop data for a group of performance indicators and compile this data for the current period and for previous years as data is available. The consultant will provide a list of data elements which were not available but are necessary to future audits and performance evaluations.

## Task II - Operational Audit

Representatives of the consultant will meet with the appropriate management and staff personnel to collect existing data and observe the policies, procedures, and practices of the system. Review checklist developed by the consultant will be used to examine the following:

- Use of the Private Sector
- Operational Data
  - Cost analysis per passenger mile
  - Data collected to comply with Section 18 reporting
- Routes and Schedules
  - Run cutting efficiency
  - Network adjustments
  - Ridership analysis
  - Service standards
  - Vehicle requirements (size, seat arrangement, design, fuel type, etc.)
- Dispatching
- Insurance Requirements

The consultant will collect and/or develop data for a group of performance indicators and compile this data for the current period and for previous years as data is available. The consultant will provide a list of data elements which were not available but are necessary to future audits and performance evaluations.

## Task III - Maintenance Efficiency Audit

Representatives of the consultant will collect data from management and staff personnel in the maintenance function. Existing procedures and practices will be reviewed and checklists, developed by the consultant, will be utilized to examine the following:

- Preventive Maintenance Programs
- Adequacy of Existing Facilities, Vehicles and Support Equipment
- Servicing Procedures
- Purchase vs Inhouse
- Inventory Control/Purchasing
- Maintenance Training
- Worker Utilization
- Effect of Maintenance on Profit

The consultant will also review existing performance indicators and---

SCOPE OF SERVICE (continued)

compile data for the current period and for previous years as data is available. The consultant will provide a list of data elements which were not available but are necessary to future audits and performance evaluations.

Task IV - Financial Audit

The consultant will collect data and provide an assessment of existing financial procedures in the following areas:

- Budgeting/financial planning
- Management reporting procedures
- Accounting practices
- Payroll procedures/wage comparability
- Cash flow management
- Internal controls
- Cash handling procedures
- Farebox handling procedures
- Audit pricing/A-102 Attachment P acceptable
- Contract procurement
- Data collected to comply with Section 15 reporting

The consultant will analyze the integration and use of existing performance indicators with the finance function. The consultant will also review the adequacy of existing fare policies and structures and identify and analyze impact of potential sources of revenue for the rural systems. The consultant will provide a list of data elements which were not available but are necessary to future audits and performance evaluations.

Task V - Specialized Transportation Review

The purpose of this task will be to assess the potential integration and/or coordination of existing specialized agency-provided transportation with the rural transportation network. The consultant will assess the agencies' clientele needs, existing service network and vehicle utilization to identify any service duplication or expansion opportunities. Additionally, the consultant will review contract negotiations, existing funding programs for these agencies, perform a revenue/expenditure analysis to target service costs and analyze existing performance indicators. Potential service innovations and "total transportation" opportunities will be analyzed for each rural area.

Task VI - Marketing Assessment

The consultant will analyze existing marketing/promotional strategies utilized by the rural operators. South Carolina has a marketing firm under contract to perform marketing assistance, therefore, the consultant should only take a brief look at the following areas:

- Image
- Adequacy of marketing plans

SCOPE OF SERVICE (continued)

- Public relations efforts
- Use of media
- Community-based efforts
- Printed materials (brochures, schedules, flyers)
- Advertising

The consultant will provide recommendations in developing "low-cost/no-cost" marketing efforts targeted for a grass-roots strategy emphasizing information dissemination and increasing public awareness and the need for rural transportation.

Task VII - Final Reports

The consultant will present prioritized findings and recommendations for each of the functional area audits in separate final reports for each system audited. Draft reports including those related to computer systems, will be submitted for review by the Division of Transportation and each rural operator. Following receipt of comments, the consultant will finalize the reports and in addition provide a summary report of the findings and recommendations for use by the State.

Product - Six final reports regarding functional audit recommendations. The consultant proposes to submit 20 copies of each system report, or a total of 120 copies. The state report should emphasize problems which are common among the majority of the systems. Twenty copies of the summary report will be delivered to the state.

Phase II - Technical Assistance for Implementation

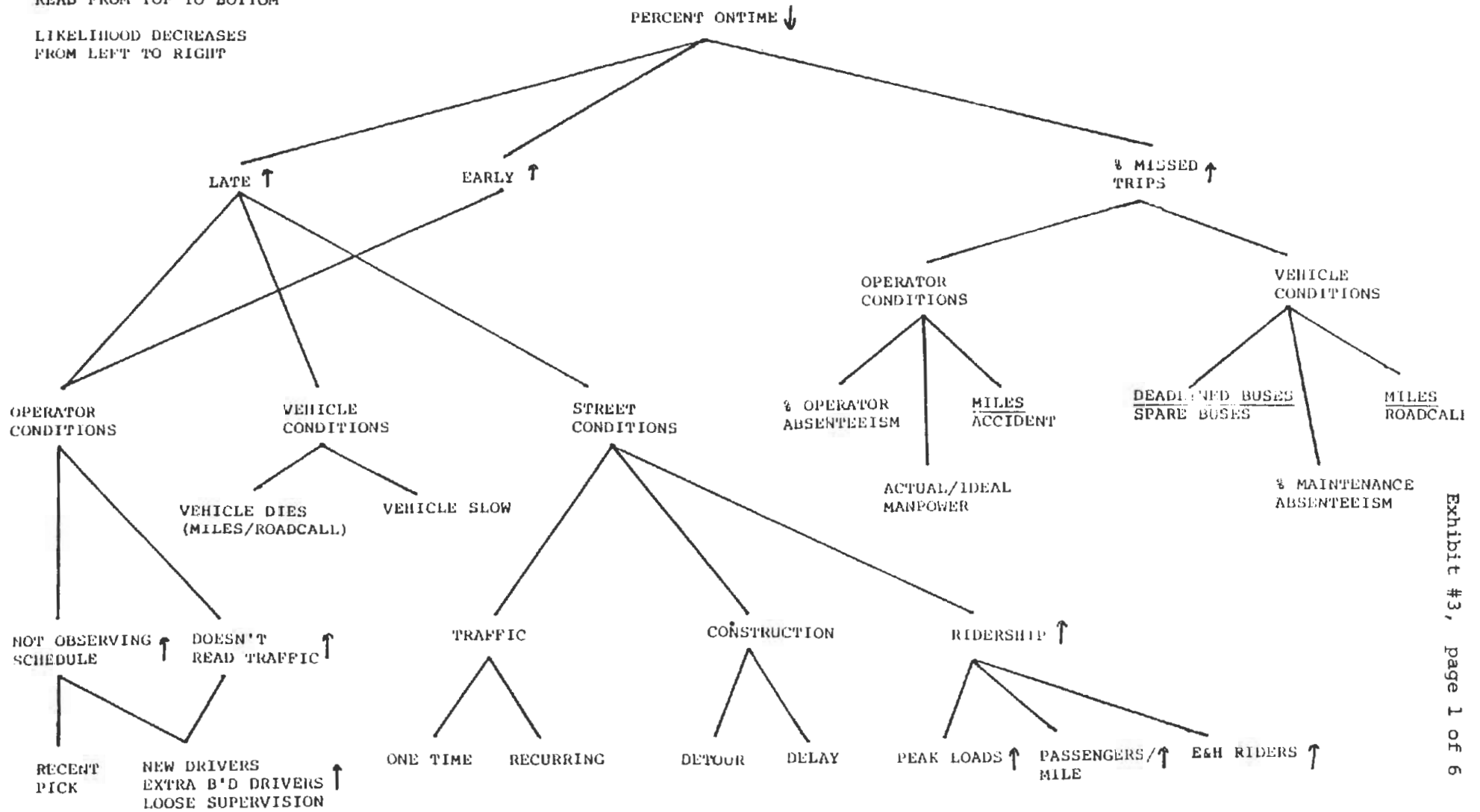
This phase will involve the provision of technical assistance in implementing the recommendations of the functional audits. Five (5) specific tasks are presented for technical assistance, however, it is recognized that these tasks may be reviewed or may differ depending upon the desires of the Division of Transportation and the specific needs of the rural operators. Therefore, additional areas of technical assistance which can be substituted and/or added, are included following specific task descriptions.

Technical assistance tasks may include:

- Training
- Develop Preventive Maintenance Schedules
- Financial Management Assistance
- Run Cutting/Scheduling
- Marketing Assistance
- Comprehensive Route and Schedule Analyses
- Market Research
- Facilities/Equipment Design
- Grant Assistance
- Planning Assistance
- Training Program Development

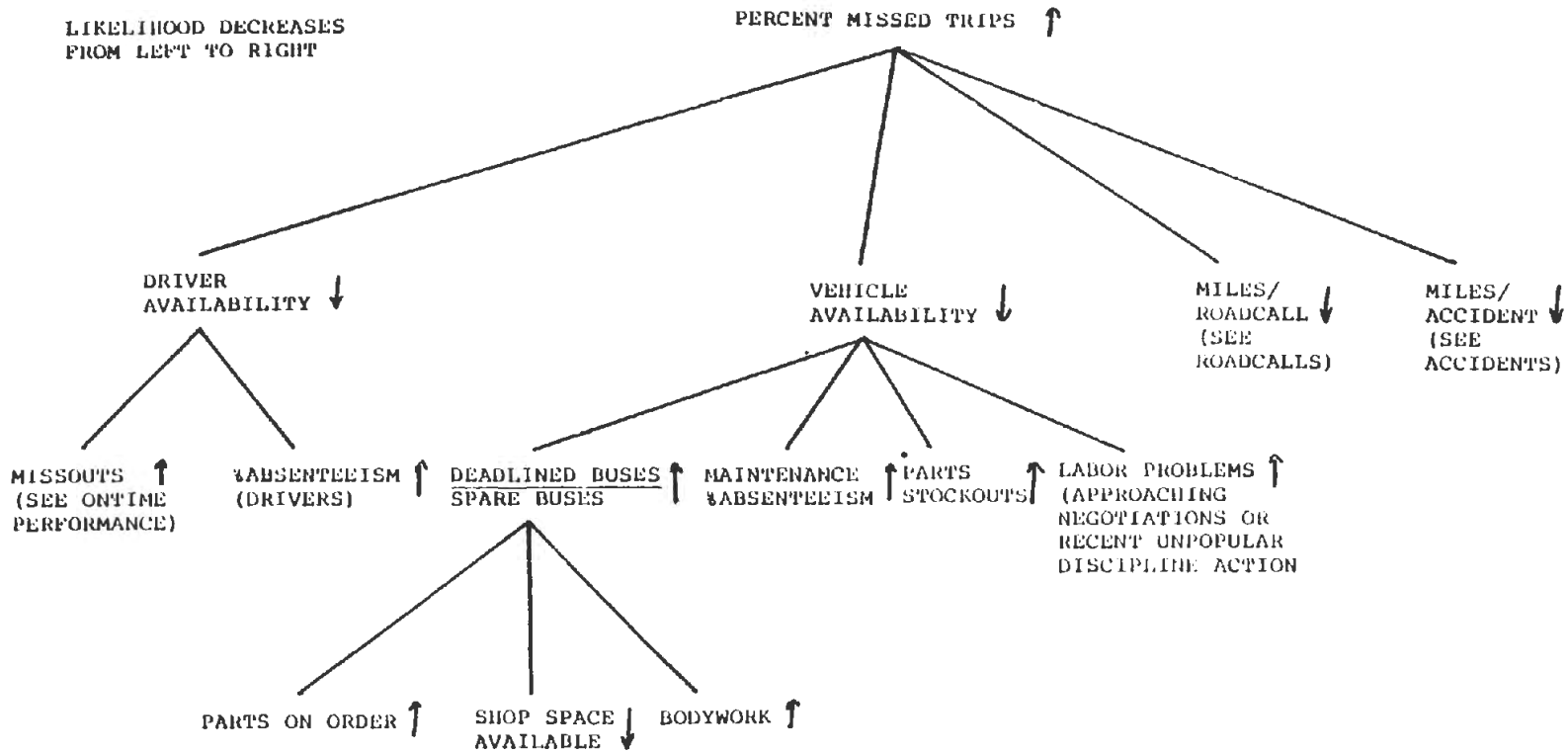
READ FROM TOP TO BOTTOM

LIKELIHOOD DECREASES  
FROM LEFT TO RIGHT



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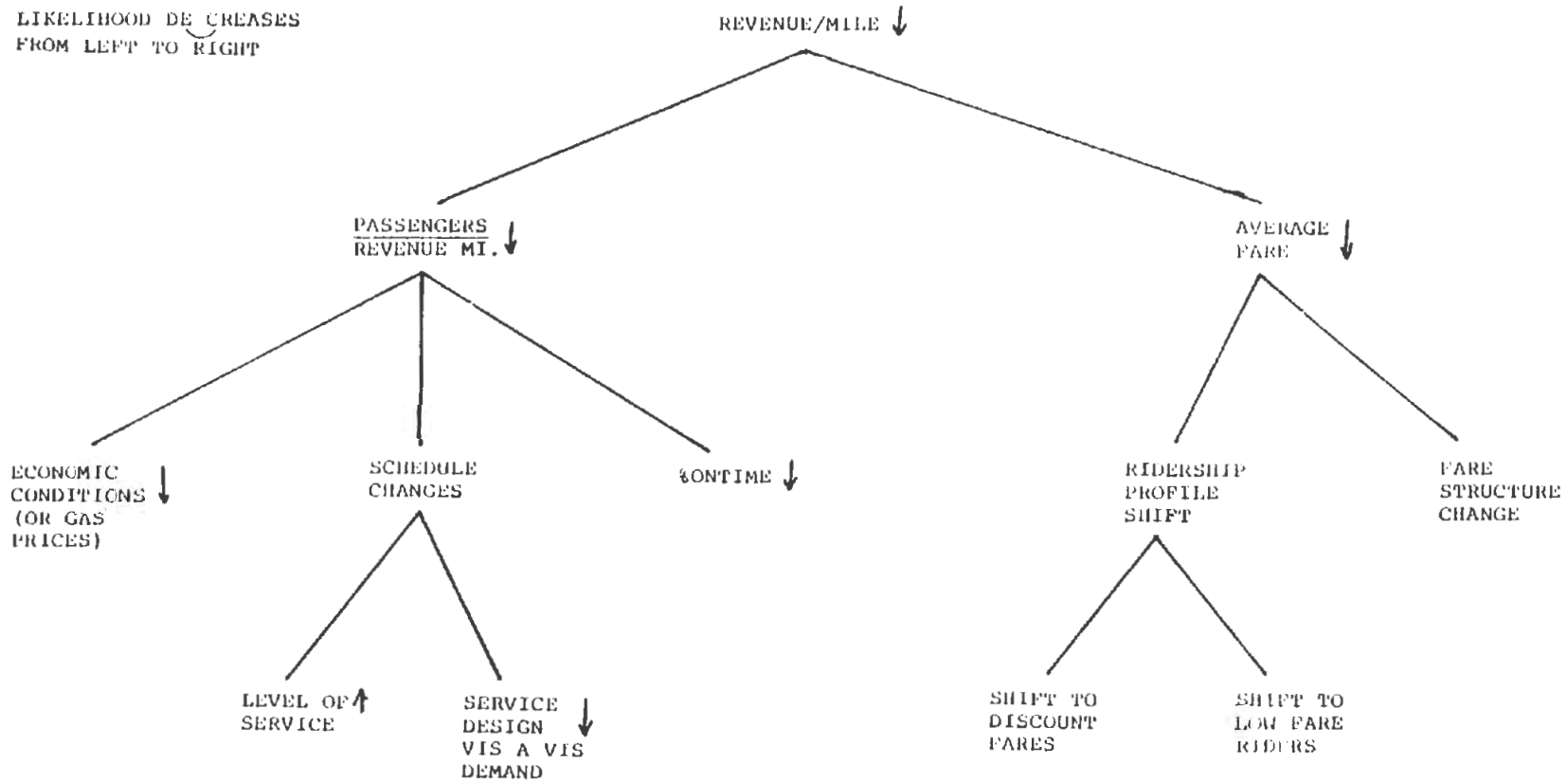
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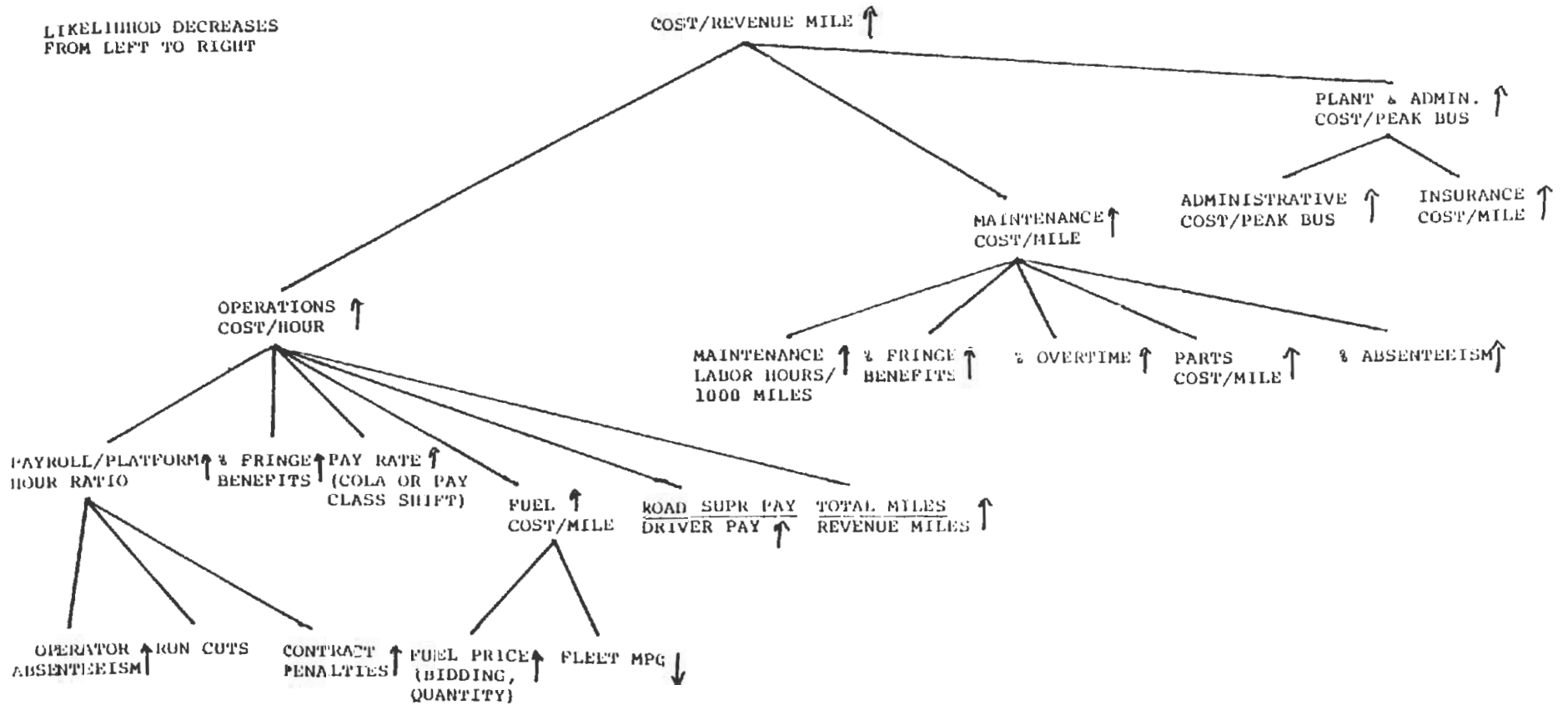
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LIKELIHOOD OF INCREASES  
FROM LEFT TO RIGHT



READ FROM TOP TO BOTTOM

LIKELIHOOD DECREASES  
FROM LEFT TO RIGHT



READ FROM TOP TO BOTTOM  
LIKELIHOOD DECREASES FROM  
LEFT TO RIGHT

MILES BETWEEN MECHANICAL ROADCALL  
(ADJUSTED FOR FLEET AGE)

PREVENTIVE  
MAINTENANCE

ACTUAL/SCHEDULED  
INSPECTIONS

SERVICE LINE  
(MILES BETWEEN  
ROADCALLS DUE TO  
SERVICE LINE  
ITEMS, e.g.  
FLUIDS, BRAKES)

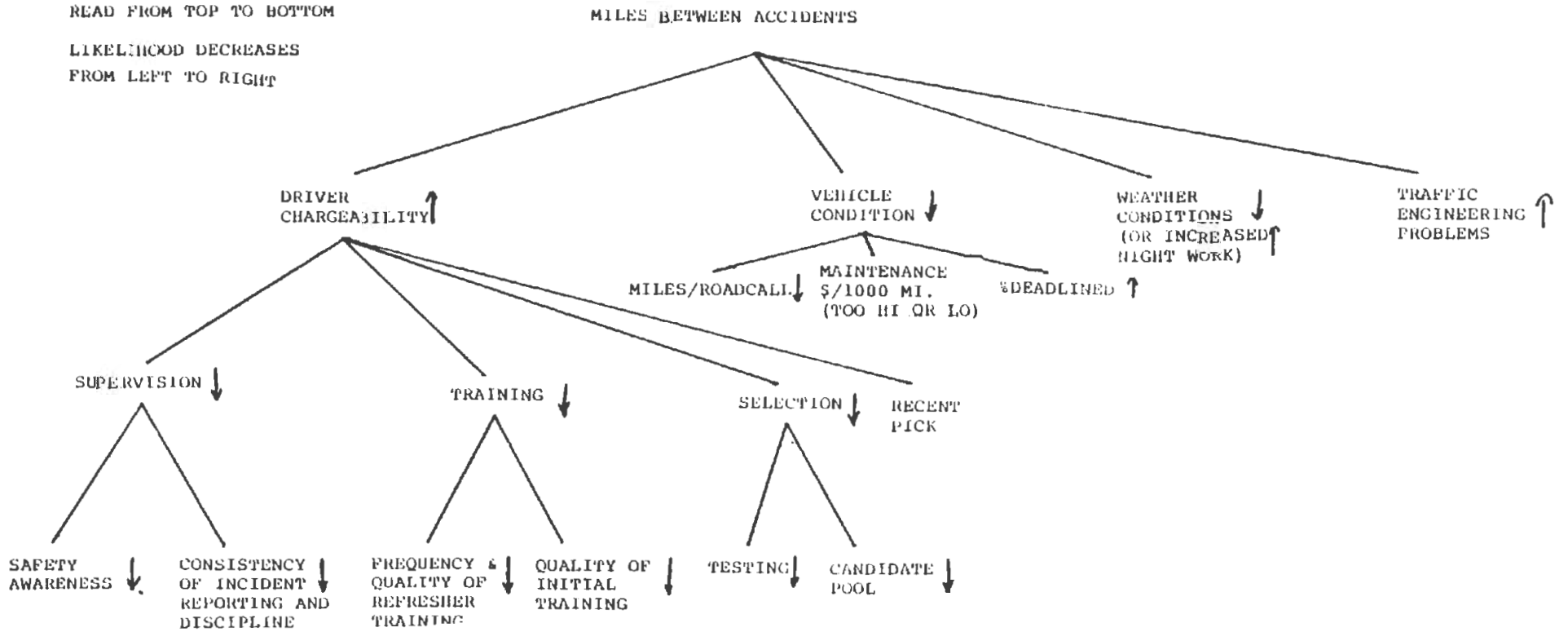
MAINTENANCE  
LABOR HOURS/  
1000 MILES

DEFERRED  
LABOR HRS/BUS

QTS. OIL  
1000 MI.

LABOR PROBLEM  
(APPROACHING  
NEGOTIATIONS  
OR RECENT  
UNPOPULAR  
DISCIPLINE  
ACTION)

READ FROM TOP TO BOTTOM  
 LIKELIHOOD DECREASES  
 FROM LEFT TO RIGHT



## ATE PERFORMANCE INDICATOR PROGRAM

### I. Data collection for particular product lines

Please take note--ATE is requesting cost, revenue, and other performance data for two categories of service only--"Transit" and "Demand-Responsive" services.

"Transit", for purposes of this report, shall mean fixed route (line) service open to the general public. Operating data from other transportation services (i.e. Charter, School, etc.) should not be included. If product line costs (Transit, Charter, etc.) are presently allocated on an annual basis only (for Section 5 purposes), use the same procedures used for annual allocation on a monthly basis for this report.

Include information about Demand-Responsive services only if those services are operated by the system. While all information may not be available, please provide as much information as possible.

### II. Performance Indicator Definitions

#### Personnel Indicators

Absences: Total number for each category of employee work assignment. Should include days off for illness, injury, and missed assignments.

Workdays: Total number for each category of employee work assignment. (Example: 10 employees @ 22 workdays each/month=220 workdays.)

Payhours: Total number of payroll hours for each category of employee work assignment. Should include straight and overtime hours.

Overtime hours: For purposes of this report, this figure shall include only unscheduled overtime hours.

#### Operating Statistics by Product Line

##### General Information

Transit: Fixed route service open to the general public.

Demand-Responsive: Paratransit service for elderly and/or handicapped persons, and in some systems the general public.

Total operating expenses: Sum of all vehicle operating, vehicle maintenance and general administrative expenses excluding depreciation, amortization, and other reconciling items for Transit and Demand-Responsive services only (do not include Charter or School expenses).

Operations, Maintenance, and Administrative Costs: Use Section 15 System of Accounts reporting requirements, portion of costs allocated to Transit and Demand-Responsive services only.

Total Operating Revenue: Revenue derived from Transit and Demand-Responsive operations only. Should include farebox, pass and ticket revenues, advertising revenues, etc. Does not include Charter revenues or any subsidies.

Total Passenger Revenue: Farebox, pass and ticket revenues.

Total Vehicle Miles: All miles run by passenger vehicles used in Transit and Demand-Responsive services. Mileage should be derived from odometer/hubameter readings.

Total Revenue Miles: All miles run by passenger vehicles used in transit and demand-responsive revenue service. Excludes miles traveled to and from storage facilities and other dead-head travel.

Total Revenue Hours: Total number of hours passenger vehicles are operated in passenger service for Transit and Demand-Responsive services. (Excludes hours traveled to and from storage facilities, other dead-head travel time, and hours spent in Charter, School, or other services).

Total Days Scheduled Service: Total number of weekdays and weekend days when Transit and Demand-Responsive services are offered during the month.

Total unlinked passenger trips: Trips taken by both initial-board (originating) and transfer (continuing) patrons for Transit and Demand-Responsive services. Each passenger is counted each time that person boards a vehicle regardless of the type of fare paid or transfer presented.

Average weekday ridership: Number of unlinked passenger trips for Transit and Demand-Responsive services taken on weekdays (Monday thru Friday), divided by the number of weekdays' service in the reporting period.

Average Saturday/Sunday ridership: Number of unlinked passenger trips for Transit and Demand-Responsive services taken on Saturdays/Sundays, divided by the number of Saturdays/Sundays service in the reporting period.

Total Vehicles Owned/Leased: Includes passenger vehicles in the system's active fleet only.

Maximum peak vehicle requirement: Greatest number of vehicles scheduled at one time during a-weekday for Transit and Demand-Responsive services. In the case of Demand-Responsive services there may be no difference between the number of peak/off peak vehicles, (as the same number of vehicles may be operated all day long.)

Base vehicle requirement: Number of vehicles required during the off-peak hours for Transit and Demand-Responsive services.

Saturday/Sunday vehicle requiremnt: Maximum number of vehicles required for Transit and Demand-Responsive services on Saturdays/Sundays.

Service Area Population: For Transit service--the number of people residing within  $\frac{1}{4}$  mile of a Transit Route (an industry standard). Your MPO may be able to provide an estimate for you. This figure should also appear on all grant applications

For Demand-Responsive services--the number should be the total number of persons eligible for this kind of service within the system's political jurisdiction.

#### Maintenance Department Information

Total vehicles with air-conditioning equipment: Include vehicles in active fleet only used for Transit and Demand-Responsive services.

Total vehicles with functioning AC units: Number of passenger vehicles measured on the last Wednesday of the month (or average weekly performance as measured on a given day for each week of the reporting period.)

Total roadcalls: Total number of mechanical breakdowns or mechanical problems which required a mechanic or service person to meet a passenger vehicle at a location other than the garage.

Total mechanically in-operable vehicles: All active fleet vehicles out-of-service due to maintenance problem(s) on the last Wednesday of the month (or average weekly performance as measured on a given day for each week of the reporting period.)

Total vehicle inspections: Formal inspections such as 3000/6000/24000-mile inspection.

Total vehicle inspections scheduled: Numbers of inspections required per month (or for a set number of miles) to meet the system's preventative maintenance program.

Total gallons diesel/gasoline fuel consumed: All fuel consumed by vehicles used for Transit and Demand-Responsive services.

#### Transportation Department Information

Total trips scheduled: For Transit service--number of scheduled departures (runs) from central dispatching facility during the month. For Demand-Responsive services--number of passenger pick-ups scheduled during the month.

Total trips missed: For transit service--number of trips (runs) scheduled for departure from central dispatching facility, but missed due to mechanical failure, operator failure to show, or dispatching mistake. (Does not include trips formally cancelled for which adequate public notice was given).

For Demand-Responsive service—trips missed shall mean the number of passenger trips missed by fault of the system. Pickups missed because of client no-show or late cancellation are not counted as trips missed.

Total trips on-time: This information may be derived from records kept by street supervisors or from special survey instrument. The definition for on-time performance shall be a "window" of (-0+5)--no minutes early, up to 5 minutes late, or better.

Total Vehicle accidents: All traffic accidents including collisions with pedestrians, collisions between transit system vehicles, collisions with other vehicles, collisions with fixed objects, collisions with other objects, non-collision accidents (vehicle overturns or runs off roadway). Equipment failure resulting in damage to the vehicle only is not a reportable accident. The number of traffic accidents is converted to rates per 1,000,000 vehicle miles on the Derived Statistics sheet.

Total Passenger accidents: Includes any incident resulting in the injury or death of a passenger. A passenger includes any person aboard, boarding, or alighting from a passenger vehicle other than the vehicle operator or other transit system employee actually performing job duties, regardless of whether or not the person has paid a fare. Any incident resulting in the injury or death of two or more passengers is reported as two or more accidents. If injuries result from a traffic accident, include the statistic under vehicle accidents, not passenger accidents. The number of passenger accidents is converted to rates per 1,000,000 (unlinked) passenger trips on the Derived Statistics sheet.

Total Customer Complaints: All complaints logged for the month pertaining to Transit and Demand-Responsive services.

### Derived Statistics Sheet

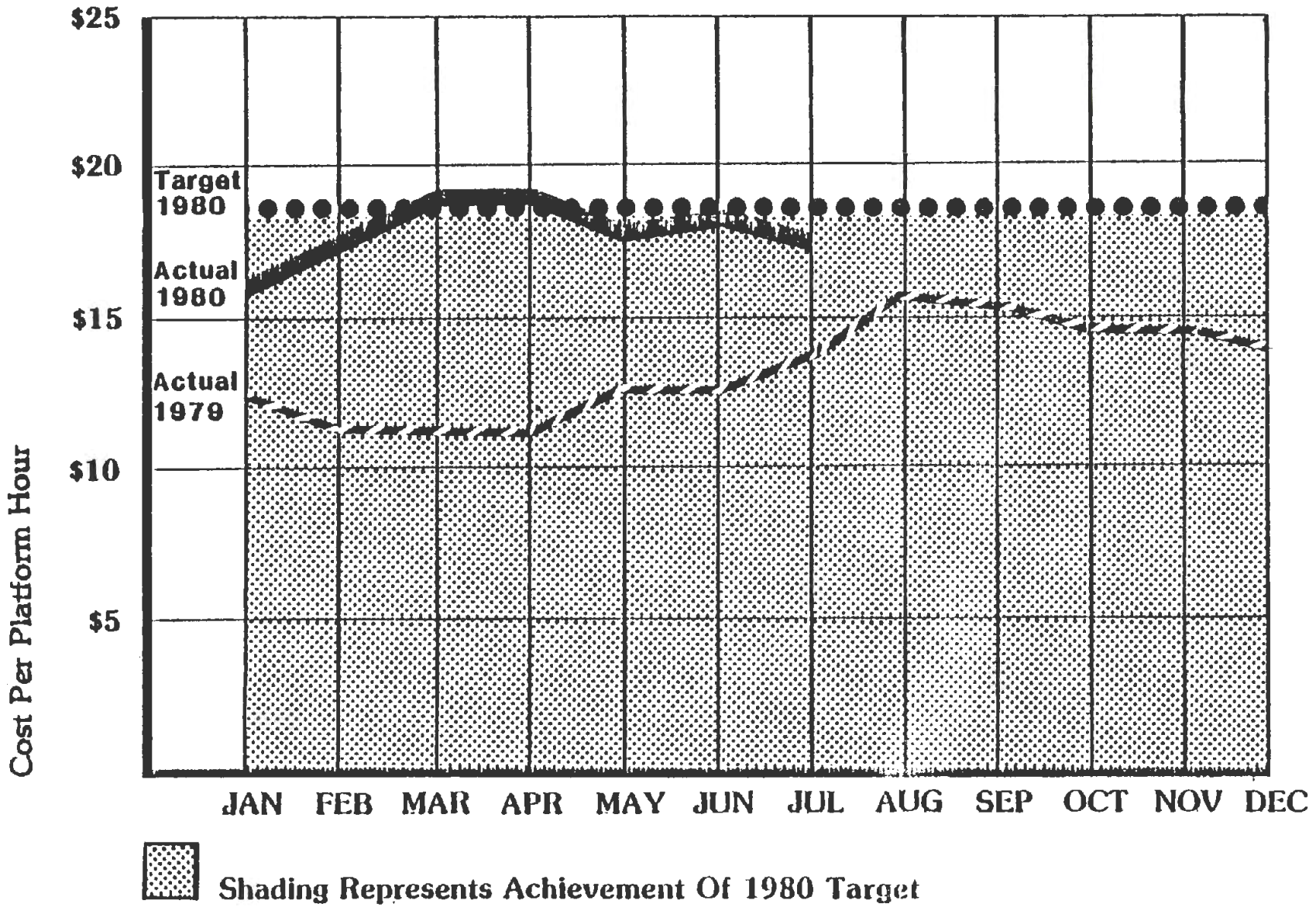
Basic Adult Fare: For systems with different basic adult fares for peak and off-peak hours, use basic peak adult fare for this report. For Demand-Responsive services—give basic fare for first zone.

Maintenance/Transportation Department: Indicators: Note—indicators included under maintenance or transportation departments are in many cases not exclusively indicative of maintenance or transportation department functions. For example: vehicle miles/gallon fuel consumed is affected by driving habits (a transportation function) as well as maintenance practices and vehicle characteristics; the number of trips missed/trips scheduled may be affected by mechanical malfunctions of equipment (a maintenance department function) as well as dispatching practices of the Transportation Department.

Personnel Indicators: All references to total vehicles mean the sum of Transit and Demand-Responsive vehicles, references to total revenue hours mean the sum of Transit and Demand-Responsive revenue hours.



**COST PER PLATFORM HOUR**



ATE MANAGEMENT AND SERVICE COMPANY, INC.  
 PERFORMANCE INDICATORS FOR THE MONTH OF \_\_\_\_\_, 198\_\_

SYSTEM: \_\_\_\_\_  
 CITY/STATE: \_\_\_\_\_

<u>PERSONNEL</u>		#employees	#absences	#workdays	#pay hrs.	#overtime hrs.
Maintenance Department Personnel	#mechanics #service persl #other persl	_____	_____	_____	_____	_____
Transportation Department Personnel	#Full-time Op. #Part-time Op. #Dispatchers #Other persl	_____	_____	_____	_____	_____
Administrative Personnel	#Clerical #Admin. #Other persl	_____	_____	_____	_____	_____
TOTALS		_____	_____	_____	_____	_____

TRANSIT—OPERATING STATISTICS BY PRODUCT LINE—DEMAND-RESPONSIVE

<u>General Information</u>		
\$ _____	Total Operating Expense	\$ _____
\$ _____	Operations Cost	\$ _____
\$ _____	Maintenance Cost	\$ _____
\$ _____	Administrative Cost	\$ _____
\$ _____	Total Operating Revenue	\$ _____
\$ _____	Total Passenger Revenue	\$ _____
_____	Total Vehicle Miles	_____
_____	Total Revenue Miles	_____
_____	Total Revenue Hours	_____
_____	Total Days scheduled service	_____
_____	Total unlinked passenger trips	_____
_____	Average weekday ridership	_____
_____	Average Saturday ridership	_____
_____	Average Sunday ridership	_____
_____	Total vehicles owned/leased	_____
_____	Maximum peak vehicle requirement	_____
_____	Base vehicle requirement	_____
_____	Saturday vehicle requirement	_____
_____	Sunday vehicle requirement	_____
_____	Service area population	_____
<u>Maintenance Dept. Information</u>		
_____	Total vehicles with AC equipment	_____
_____	Tot. veh. with functioning AC units	_____
_____	Total roadcalls	_____
_____	Tot. mechanically inoperable vehicles	_____
_____	Total vehicle inspections	_____
_____	Total vehicle inspections scheduled	_____
_____	Total gallons diesel fuel consumed	_____
_____	Total gallons gasoline consumed	_____
<u>Transportation Dept. Information</u>		
_____	Total trips (runs) scheduled	_____
_____	Total trips missed	_____
_____	Total trips on-time	_____
_____	Total vehicle accidents	_____
_____	Total passenger accidents	_____



DERIVED STATISTICS

SYSTEM: \_\_\_\_\_  
 CITY/STATE: \_\_\_\_\_

TRANSIT

Cost Indicators

DEMAND-RESPONSIVE

\$ _____	Total Operating Expense/revenue mile	\$ _____
\$ _____	Total Operating Expense/revenue hour	\$ _____
\$ _____	Tot. Oper. Exp./unlinked passenger trip	\$ _____
\$ _____	Operations Expense/revenue mile	\$ _____
\$ _____	Maintenance Expense/revenue hour	\$ _____
\$ _____	Admin. Expense/peak hour vehicles	\$ _____

Revenue Indicators

\$ _____	Tot. Oper. Revenue/revenue mile	\$ _____
\$ _____	Tot. Oper. Revenue/revenue hour	\$ _____
\$ _____	Passenger Revenue/unlinked pass. trip	\$ _____
_____ %	Tot. Operating Rev./Tot. Operating Exp.	_____ %
_____ %	Tot. Passenger Rev./Tot. Operating Exp.	_____ %
\$ -- / /	Basic Adult Fare—date set	\$ -- / /

Ridership Indicators

_____	Passenger Trips/revenue mile	_____
_____	Passenger trips/revenue hour	_____
_____	Ave. weekday ridership/serv. area pop.	_____

Maintenance Dept. Indicators

_____ %	#vehicles with functioning AC units/ total # vehicles with AC units	_____ %
_____ mpg	#revenue miles/roadcall	_____ mpg
_____ mpg	#vehicle miles/gallon diesel fuel	_____ mpg
_____	#vehicle miles/gallon gasoline	_____
_____	#vehicle miles/vehicle inspection	_____
_____	#vehicle inspections/insp. scheduled	_____
_____	Total # vehicles/# peak hour vehicles (spare ratio)	_____
_____ %	#mechanically inoperable vehicles/ total # vehicles	_____ %

Transportation Dept. Indicators

_____ %	#trips missed/trips scheduled	_____ %
_____ %	#trips on-time/#trips scheduled	_____ %
_____	#veh. accidents/1 million veh. miles	_____
_____	#passenger accidents/1 million passenger trips	_____
_____ mph	#customer complaints/1000 revenue hrs.	_____ mph
_____	#revenue miles/revenue hour	_____

Personnel Indicators

_____	Total number of employees/Total number vehicles	_____
_____	Total number of operators/Total number vehicles	_____
_____	Total number of mechanics/Total number vehicles	_____
_____	Total number of service people/Tot. # vehicles	_____
_____	Tot. # absenses/Total # assigned workdays	_____
_____	Total operator absenses/Total operator workdays	_____
_____	Total operator payroll hrs/Total revenue hours	_____
_____	Tot. Operator unscheduled overtime hrs/oper. payhrs	_____
_____	Tot. Mechanic unscheduled overtime hrs/Mech. payhrs	_____
_____	Tot. Servicing unscheduled overtime hrs/Serv. payhrs.	_____

WHY USE WHICH PERFORMANCE MEASURES  
FOR WHAT REASONS?

Jon E. Burkhardt

Prepared for Presentation at the  
Sixth National Conference and Workshops on  
Rural Public Transportation  
Gorham, Maine  
August 16, 1983



## WHY USE WHICH PERFORMANCE MEASURES FOR WHAT REASONS?

Performance measures are useful in determining if current policies and procedures are producing enough of the intended results. They show if changes are required to current practices, and, if so, in what directions.

Despite these programmatic possibilities, the history of the application of performance measures to transportation systems divides almost equally into the subtopics of a treatise entitled "the uses and abuses of data." There are several well-designed and intelligently used performance evaluation systems that currently assist transportation decision-makers at all levels on a variety of issues. But transportation managers are all too familiar with evaluation systems which asked for excessive amounts of data which were never analyzed by the program managers and which were either never returned to the system operators for their use or else were returned so late as to be out of date and useless.

To ensure that performance measures contribute to the overall operations of a transportation system, it is important to be specific about the objectives for their use and about the concerns of system operators about their use. The objectives of performance indicators include:

- 1) providing an accounting to all funding sources showing in detail how funds have been spent,
- 2) showing managers and directors how the needs of the target populations and service areas are being met or not met, including gaps in service, and identifying opportunities to make improvements in services,
- 3) controlling the costs of service, and
- 4) obtaining public support by promoting system accomplishments.

A careful specification of the objectives of the performance evaluation system will completely determine the types of data needed for the evaluations (and also at the same time indicate what kinds of data are not necessary).

The basis for evaluation and monitoring is completed by assessing the concerns and complaints of the system operators involved in performance evaluations that serve other agencies as well as their own. One important premise is that any evaluation system will indeed serve the local operator as well as others; if it does not, it should definitely be restructured. More common will be the

complaint, not that the system is not useful, but that it is not worth the effort involved. This kind of complaint can be tested to determine whether or not it is accurate and which part of the partnership needs a little more instruction. Another concern is that the data reporting can lead to increased involvement of state and Federal officials in local affairs. Given the current posture of the divestiture of Federal responsibilities and the push for the decentralization of governmental functions, concern about Federal involvement would appear to be a thing of the past. However, state agencies are now more frequently insisting that certain minimum standards be met by those systems wishing to receive state funds, and it appears that this kind of accountability will be increasing rather than decreasing in the future. Another concern is the threat of reduced funding or changes to allocation policies. Some states now specify the farebox recovery ratio that must be met to qualify for state funding, but the use of other performance indicators for funding allocation is not likely to see any significant usage in the near future. Finally, a big concern of many operators is that performance statistics will be used to misrepresent their accomplishments, particularly by comparing them to different kinds of properties whose statistics could not be expected to be similar. While it seems impossible to rid the world of misrepresenters, misrepresentation is often easier to accomplish in the absence of hard factual data rather than when facts exist, and it is also much easier to make a strong case that real progress is being made if strong factual evidence exists. Besides, the primary use of performance measures should be to track the performance of one particular system over time rather than to focus on the differences in performance between systems.

So there are some legitimate concerns about the potential misuse of performance measures, as well as some unfounded fears. Balancing both types of concerns against the objectives of the performance evaluation in an open forum of all affected parties should lead to basic agreement on the overall system.

#### SPECIFIC PERFORMANCE MEASURES

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 measure alone is a sufficiently global indicator of performance -- multiple measures are mandatory. A complete evaluation would include



assessments of efficiency -- how well a system uses its available labor and capital resources -- and effectiveness -- how well a system is meeting its goals and objectives. A complete evaluation would include at least the following factors:

- 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.
- Cost per vehicle mile: Total system costs divided by the total distance traveled by all vehicles in the system.
- Cost per vehicle hour: Total system costs divided by the sum, for all vehicles, of the number of hours that each vehicle is operated.
- Load factor: The sum of the distances for all trips by all passengers divided by the sum of the seat miles provided by all vehicles (seat miles are the product of the number of passenger seats times the miles the vehicle traveled).
- Operating ratio: Total system revenues divided by total system costs.
- Passengers per vehicle mile: The number of passenger trips divided by the number of vehicle miles provided by all vehicles.
- Passengers per vehicle hour: The number of passenger trips divided by the sum of the hours each vehicle is operated.
- 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 are efficiency measures; the last three measure effectiveness. Other indicators (examples include cost per passenger mile and deadhead factor) have been proposed for transit systems, and may be useful for some systems to compare their performance with respect to special situations or objectives (for example, the cost per passenger mile for elderly passengers). However, the eight shown 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 are 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.



Table 1 shows selected performance measures for previous rural transportation experiences, updated for inflation. Since these statistics represent demonstration projects instead of full-time Section 18 experiences, the performance measures for current S. 18 operations should show improvements over these statistics and in fact they do. The ranges shown are quite broad for most of the performance measures; the breadth indicates the diversity of systems and service areas in the sample and substantial ranges of experience and expertise. One would thus expect some narrowing of the differences as time goes on, although significant ranges will remain between the high and low ends of the scales.

#### SPECIFIC INDICATORS FOR SPECIFIC PURPOSES

Each of the indicators can be used to address specific questions. Conversely, any suggested indicator that does not address a specific question can be ignored. Since several indicators can be used to address more than one issue, it is probably most effective to focus on them, especially if there are severe constraints on time or analytical resources. Table 2 displays the indicators and their uses.

Information on unit costs (per trip, per mile, per passenger) can be used to account for expenditures, indicate opportunities for improvements, and control the costs of service. Load factors, which indicate the percent of capacity used, demonstrate how needs are being met, indicate opportunities for improvement, and help control costs. The so-called productivity measures -- passengers per mile, per hour, and per service area population -- indicate how needs are being met, what opportunities exist for improvements, which cost control strategies may be viable, and which factors to promote for public support. Passengers per month statistics can help show how needs are being met and obtain public support. The miles per vehicle per month can indicate if the vehicles see too little or too much use, thus indicating new services might be changed.

While these statistics are most often used on a system-wide basis, they are even more illuminating on a route-by-route basis. Used at this detailed level, the performance indicators shows which routes need to be modified and which do not.

Table 1

PROBABLE RANGES FOR OPERATING STATISTICS FOR  
RURAL TRANSPORTATION SYSTEMS<sup>1</sup>

	Low <sup>2</sup>	High <sup>3</sup>
<u>Efficiency measures</u>		
● cost <sup>4</sup> per passenger trip (one-way)	\$2.15	\$ 8.10
● cost <sup>4</sup> per vehicle mile	\$0.65	\$ 1.35
● cost <sup>4</sup> per vehicle hour	\$8.35	\$24.25
● load factor	6%	35%
● operating ratio (revenues operating and administrative costs)	0.25	1.0
<u>Effectiveness measures</u>		
● 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
<u>Other descriptors</u>		
● one-way passengers per month	1,000	8,000
● monthly vehicle miles per vehicle	2,000	7,000

<sup>1</sup>These figures are 1983 estimates based on tabulations by Ecosometrics, Incorporated for 107 operational Section 147 demonstration projects and on procedures outlined in Appendix E of Jon E. Burkhardt, Sue F. Knapp, and Mark J. Ramsdell, Evaluation of the Office of Human Development Services Transportation Demonstration Program, prepared by Ecosometrics, Incorporated for the Office of Human Development Services, U.S. Department of Health, Education, and Welfare, March, 1979.

<sup>2</sup>Only 20 percent of all systems referenced have lower values than this.

<sup>3</sup>Only 20 percent of all systems referenced have higher values than this (with the exception of the statistic for operating ratio).

<sup>4</sup>Operating, capital, and administrative costs included.

Table 2: MATRIX OF INDICATORS AND THEIR USES

INDICATORS	POTENTIAL USES				
	Accounting for Expenditures	Meeting Needs for Services	Opportunities for Improvement	Controlling Costs of Service	Obtaining Public Support
Cost per Trip	X		X	X	
Cost Per Mile	X		X	X	
Cost Per Hour	X		X	X	
Load Factor		X	X	X	
Revenues/Costs	X				X
Passengers per Mile			X	X	
Passengers per Hour			X	X	
Passengers per Service Population		X	X		X
Passengers per Month		X			X
Miles per Vehicle per Month			X		

It is also possible to add other indicators to provide more information for specific purposes. Documenting the level of public support (perhaps with the objective of raising it) can be done by focussing on subsidy levels -- total per passenger, per hour, etc. Quality and reliability can be measured by factors such as percent on time performance, number and type of complaints, number of accidents, accidents per mile, breakdowns per mile, and percent of down time. Targeting for special groups can be investigated with statistics for elderly and handicapped riders (or others), again on a per mile, per hour, or other basis. Capital planning can be accomplished through utilization and maintenance records and consideration of peak vs. base period ratios. Thus, performance indicators are useful for a wide range of decisions; it is important to specify what decisions are to be made to determine which indicators are most useful.

## RESULTS

The major reason for applying performance indicators is to determine how to make changes to current policies and procedures in order to increase efficiency and effectiveness. While much of the previous literature on performance measures has focussed on changes to operating procedures, changes to policies regarding service provision are equally important in achieving improvements. For example, policies to provide service to particularly remote and sparsely populated areas can significantly decrease what might otherwise be commendable performance. Thus, it is important to realize that it is not only the system manager but also the system's board of directors that may need to reconsider the performance consequences of decisions they have made.

Performance indicators are a key part of a rational examination of present conditions with an eye to improving them. Their intelligent application can lead to substantial improvements.

## BIBLIOGRAPHY

APTA Productivity and Efficiency Task Force, "Issue Paper: Transit Performance Indicators", Proceedings of the First National Conference on Transit Performance, Urban Mass Transportation Administration, Washington, D.C., 1977.

Jon E. Burkhardt, Sue F. Knapp, Hannah Worthington, and Peter Schauer, "Monitoring and Evaluation," Chapter 7 of Managing Public Transportation Programs for Nonurbanized Areas, Prepared for the Federal Highway Administration by Ecosometrics, Incorporated, April 1981.

"Measuring Transit System Productivity and Performance," ITE Journal, November 1982, pp. 24-27.

Rural Public Transportation Performance Evaluation Guide, Prepared for the Pennsylvania Department of Transportation by Carter-Goble Associates, Inc.

UMTA SECTION 16(b)(2)  
VEHICLE REHABILITATION

Presented by:

GEORGE L. SMITH  
Manager, Public Transportation Office

WASHINGTON STATE DEPARTMENT OF  
TRANSPORTATION

AUGUST 1983

Prepared by:

PARATRANSIT BRANCH  
PUBLIC TRANSPORTATION OFFICE



## Introduction

In 1973 the Federal Aid-Highways Act amended the Urban Mass Transportation Act of 1964, as amended, to create Section 16(b)(2). This section authorizes the allocation of two percent of the Urban Mass Transportation Administration's (UMTA) capital assistance spending authority to be used for grants to private nonprofit corporations who provide transportation services to the elderly or handicapped. It was not until 1975 that preliminary guidelines concerning the implementation of the program were released.

Since the first allocation in 1975, the amount of money available to the states has decreased, both in actual dollars and in buying power. Along with this decrease have come federal cuts in the amount available for other elderly and handicapped programs. In the last two years, the situation has become critical. In order to preserve the current service levels, a way to make more efficient use of available funds was needed.

At first blush, three significant options stand out: (1) new sources of revenue, (2) higher productivity, (3) shifting funds from capital to operations. The first is to be the most desirable, but with the economy in its current state and other demands for funding, these sources are becoming more difficult to find. The second is also difficult because these programs are dependent on many outside factors, such as medical appointment times and the service area covered. Higher productivity must be worked on constantly but is not an immediate source of funds. The third is the most available if a way could be found to continue service without having to replace equipment every 100,000 miles.

## History

In mid-1981, an inquiry was made to the Washington State Department of Transportation (WSDOT) by the Evergreen State Specialized Transportation Association (ESSTA), an association of elderly and handicapped transportation providers, to check if replacement engines and drive trains (transmissions, drive lines, and rearends) were an allowable expenditure under the 16(b)(2) program. ESSTA's reasoning seemed sound. Why spend \$14,000 to buy a new vehicle when a small portion of that amount could be used to rehabilitate an otherwise sound vehicle.



In late 1981, a decision was made by the Public Transportation Office of WSDOT to pursue ESSTA's question. An official request was made to the Region X office of UMTA. Upon request from WSDOT in January 1982, the regional office in Seattle contacted UMTA headquarters in Washington, D.C. regarding the possibility of purchasing replacement engines for eligible private nonprofit organizations under the UMTA Section 16(b)(2) Program. Part of the reasoning behind our request was the purpose of the program, which is to serve the transportation needs of the elderly and handicapped. If the approval was granted, the current vehicles would not need to be replaced and would be available for continued service, and the money saved could then be used to cover operating expenses.

On July 1, 1982, WSDOT submitted a new Section 16(b)(2) grant application to the UMTA Region X office. Included in that application were requests for 13 replacement engines and other key elements of the drive train. At that time, no decision had been made regarding our initial inquiry. The WSDOT and ESSTA had hoped that an application with replacement engines included would spur UMTA into making a decision.

During the time from our initial request to our application submittal, continuous communication between WSDOT and the UMTA regional office had been ongoing. The regional office had called the Washington, D.C. office every week trying to obtain some type of decision. A decision was needed to enable the requesting agencies time to finalize their match monies. If the decision went against our request, modifications would be needed for each applicant to change their needs to new equipment rather than the replacement equipment. Later in July, ESSTA and WSDOT both submitted letters to Arthur Teele, the UMTA administrator, requesting that a decision be made. At this point, a decision had to be made by mid-August in order to proceed with the approval of the 1982 grant request. When Mr. Teele received these letters, it was the first time he had heard of the request. Due to a communications problem, he had not yet seen the original request from Region X. This breakdown in communications caused a delay of approximately eight months in the approval process.

## UMTA Response

In August 1982, the WSDOT grant request was approved with a conditional approval given on the replacement equipment while awaiting final word from UMTA headquarters. Along with the approval, UMTA decided to do an engineering and economic analysis through their research branch located at Cambridge University in Boston. This analysis would be used to determine the feasibility and the conditions under which the rehabilitation of vehicles would be allowed.

In September 1982, a representative of the UMTA Transportation Systems Center (TSC) began on site visits. His first stop was the state of Washington. While there, he visited three of the service providers who had requested replacement equipment in their 1982 requests. All three of the providers inspected were located in the greater Seattle area. The representative was surprised to find that the vehicles, all 1974-77 models, were in excellent shape, including those with over 100,000 miles. While at each site, and while inspecting the vehicles, he checked the maintenance records of each vehicle and interviewed the program directors and WSDOT representative. After completing his stop in Seattle, he visited sites in Boston, Massachusetts and Portland, Maine. These visits were to check vehicle conditions in other parts of the country that have different terrains and climates.

In November 1982, a TSC draft report was sent to UMTA. This report included the recommendations of the analyst pertaining to vehicle rehabilitation. This draft was sent to Region X for comments, who, in turn, requested comments from WSDOT. Even though the original request was only for engines and drive trains, the guidelines included total rehabilitation of each vehicle. The guidelines were inclusive of all parts of the vehicle, including painting. Having no experience with actual use of the proposed guidelines, it was difficult to respond critically to them. Many points were brought out in the report, the most important being that rehabilitation is not intended to compensate for deferred or poor vehicle maintenance. Therefore, minimum guidelines were set. Only vehicles that are at least four years old or have 100,000 miles will be considered. In addition, a limit on expenditures per vehicle was set at 50 percent of the cost of purchasing an identical vehicle. The 50 percent cost will include the rehabilitation of accessibility equipment which will be treated as a part of the vehicle. After the

rehabilitation has been completed, the vehicle must remain in service for a minimum of three years.

Even after the guidelines were returned with comments, the decision was still delayed. It seemed that no one but the state of Washington was interested. As the delay continued, the vehicles that needed rehabilitation were becoming more mechanically at risk.

Finally, in February 1983, UMTA Region X approved a pilot project for one of the requesting agencies. This project was accomplished when the local program director went directly to the UMTA Region X administrator and pleaded his case. The transmission on one of his vehicles was beginning to fail, and the potential loss of the vehicle from service was a direct threat to his program's viability. Without the approval of UMTA, the program would either have to replace the transmission itself, for which no money was budgeted, or operate without the vehicle until approval was received. This program does not have extra vehicles to put on the road. Sometimes a vehicle can be borrowed to fill the void, but normally, service must be cut back. Even with written notification of the pilot project from UMTA, we were required to request a release on the money necessary to fund the work. Finally, after over a year, we were going to see if the program was going to work.

Our next step was setting up a schedule for the inspection of the vehicles to determine if they were, in fact, eligible under the proposed guidelines. Whoever inspected the vehicles could not have a relationship with either the WSDOT or the applicant. Also, the person who did the inspection became ineligible to perform the rehabilitation work later on. Since the authority was only for three vehicles, the charges for the inspection were low enough so competitive bidding was not required. In order to accomplish the inspection without having to take all three vehicles out of service, a decision was made to do the work on a Saturday and a mechanic was found who was willing to do the work. Because it was the first time, representatives from UMTA, WSDOT, and the requesting program were required to be on hand to watch the inspection. The proposed guidelines proved to be quite comprehensive. It took approximately eight hours to inspect the three vehicles using the guidelines. After the inspection, the three representatives were

requested to comment on the inspection procedure. All three agreed that the guidelines were requesting too much detail. For example, if the agencies were requesting replacement engines, why is it necessary to inspect the sparkplugs, thermostat, or coil? All the vehicles were eventually approved for rehabilitation. The following data were used to determine the feasibility of rehabilitation.

<u>Vehicle</u>	<u>Replacement Cost</u>	<u>Rehabilitation Cost</u>	<u>50 Percent Replacement</u>
1. 1976 Dodge 15 Passenger, Raised Roof & Door, Wheelchair Lift 132,358 Miles	\$14,155.62	\$6,347.83	\$7,077.81
2. 1976 Dodge 15 Passenger, Raised Roof & Door, Wheelchair Lift 128,805 Miles	\$14,155.62	\$5,232.91	\$7,077.81
3. 1977 Dodge 15 Passenger 116,406 Miles	\$10,805.62	\$4,853.88	\$5,402.81

The rehabilitation costs include the cost of an engine, transmission, rear end and all other miscellaneous costs. Since the agencies only requested engines and drive trains, we only budgeted enough to cover the major components.

In May, after a request from a second agency whose vehicles needed immediate replacement engines, the special condition was removed by the Region X office. The state was instructed to proceed with the outstanding projects, and the regional office anticipated the procedures outlined in the "Rehabilitation Guidelines for 16(b)(2) Vehicles" would become official when the new Section 16(b)(2) guidelines are issued.

### Summary

Even though the subject of vehicle rehabilitation of UMTA Section 16(b)(2) equipment was eventually approved, the process had some frustrating moments. The total process, from the initial request by the state to the decision by the UMTA Regional Office, took approximately one year. A large part of the delay

was at the Washington, D.C. level. This was caused, in part, by a lack of communications. The regional office concurred with our request, and they proved very helpful to our efforts.

The request was a learning experience for all of us. Everything from working with UMTA in making a major policy change to inspecting and rehabilitating the vehicles gave us new insights. We learned the inspection procedure needs to be refined, and it depends upon what rehabilitation is being requested. If total rehabilitation is wanted, then the procedure is fine, but if the engine and drive train is all that is requested, then modifications to the guidelines are needed. The inspection procedure needs to be looked at on a case-by-case basis. Since the state makes the final determination, this will be easier than having UMTA make the final decision.

At the present time, we have completed three rehabilitations. These included just the engine and drive trains. The director of the requesting agency is very happy with the work and says that the vehicles will easily last the required three years.

In the future, we will be seeing more and more requests for rehabilitations. With the economy leveling off, maintaining the current service levels is of major importance. With rehabilitation available, money that was once spent on vehicle replacement can now be spent on maintaining service levels. This is a small step given the resource problems we are facing, but it is in the right direction.

DRAFT GUIDELINES

REHABILITATION OF SECTION 16(b)(2) VEHICLES



REHABILITATION OF SECTION 16(b)(2)  
VEHICLESPURPOSE

The purpose of this technical memorandum is to provide technical assistance to UMTA Regional Offices by identifying conditions under which the rehabilitation of vans and small buses is a reasonable alternative to replacement.

BACKGROUND

Historically, UMTA has provided grant funds under Section 16(b)(2) for the capital costs of acquiring vans and small buses. These vehicles range from unmodified vans to extensively modified body on chassis buses up to about 30 feet in length. They are operated by private, not-for-profit service providers for elderly and handicapped (E&H) transportation. 16(b)(2) funds cannot be used to cover the cost of operating or maintaining these vehicles.

Generally, vehicles of this type are considered to be light duty with an accepted service life of three to five years or about 100K miles, at which time they would be replaced, presumably through another 16(b)(2) grant. Recently, however, UMTA has been receiving requests for grant funds to rehabilitate these vehicles instead of replacing them. These requests may be because the current economic climate makes it difficult for the operators to come up with the local 20% share, or it may simply be that more of these vehicles have reached the "replacement" age but are not in sufficiently poor condition to warrant disposal.

In any event, the issue of rehabilitating these vehicles has been raised and UMTA/URT has requested that an engineering and economic analysis be done to identify the conditions under which rehabilitation of these vehicles would be economically and technically feasible.



## SUMMARY

On-site visits were made to various service providers in different parts of the country for the purpose of inspecting the condition of candidate vehicles and to obtain maintenance data that might be useful in the evaluation. In addition, the issue was discussed with several speciality coach builders and rebuilders. As expected, the data needed to do a rigorous cost-benefit analysis is not available and will not be until there has been some actual experience with rehabilitated vehicles of this type. The key data element which is missing is the life expectancy of a rehabilitated vehicle. "Two to four years" was the most common estimate of life extension, depending on the extent of rehabilitation.

Although life expectancy is a critical, if somewhat nebulous, factor in deciding to rehabilitate, two observations can be unequivocally stated.

- o The notion that these "light duty" vehicles are "throw-aways" after 3 to 5 years/100K miles is an erroneous generalization. We have seen five year old vans (standard and modified) with over 100K miles whose overall conditions is excellent except for the drivetrain. Since drivetrain replacement costs for these vans can range from \$3000 to \$6000 whereas vehicle replacement ranges from \$10,000 to \$18,000, rehabilitation of these vehicles is worth further consideration.
- o The decision to rehabilitate a van/small bus can only be made on a case by case basis. We have also seen vans with 70K - 80K miles whose overall condition and structural integrity are so poor as to make rehabilitation impractical. A rational decision can only be made after a thorough evaluation of each vehicle's condition.

Accepting the fact that the decision to rehabilitate any particular vehicle is a value judgement based on evaluation of factors to be discussed later, it is recommended that the concept of rehabilitating 16(b)(2) type vehicles be considered, for the technical reasons discussed, as an acceptable alternative to replacement. Tentative vehicle selection guidelines are suggested in a subsequent section of this report. The suggested allowable rehabilitation

costs as a percentage of replacement cost are somewhat arbitrary, due to a lack of sufficient data, but are intended to be conservative. Vehicle selection guidelines can then be revised to reflect actual experience, particularly in the area of vehicle life extension.

## DISCUSSION

The initial request for grant funds to rehabilitate 16(b)(2) vehicles came from E&H service providers in the Seattle area through Washington State DOT. Three service providers were visited to inspect their candidate vehicles. The majority of the vehicles are standard vans, although about one half of these were equipped with lifts at the side or rear door. A few had raised roofs.

The candidate vans were 1974-77 vintage with well over 100K miles. The bodies and interiors were in exceptionally good condition, with very few dents and no rust. The specific grant request concerned only the drivetrain since the appearance of the vans was entirely satisfactory. There is little doubt that by repowering these vans the useful life would be extended by the life of the replacement drivetrain. However, it should be noted that Seattle has a benign environment. In addition, the vans, for the most part, were driven by retired people who did not display what has been referred to as a "taxicab mentality" driving style. The five year old vans seen in Seattle were quite unlike those seen in Boston. Clearly, each vehicle must be judged individually.

In an attempt to see the other end of the spectrum in terms of environment, E&H operators in Boston, MA and Portland, ME were visited. As anticipated, rust problems were more extensive as was the occurrence of front end problems. Presumably the front end problems are associated with the greater number of potholes created by winter frost heaves. Two vans with raised roofs were seen in Boston which had recently been scrapped because body deterioration (rust) and frame damage, coupled with the high mileage drivetrain wear made continued operation impossible and rehabilitation prohibitively expensive. Estimates approached 90% of replacement cost.

In Portland, a 22 foot body-on-chassis bus had recently been rehabilitated (using section 3 funds) at a cost of \$8000 which included extensive body

repair and interior replacement as well as an engine overhaul. The operator expects at least four more years of use in standby or backup service. Since the replacement cost of the vehicle exceeds \$25,000, the rehabilitation cost represented less than 1/3 the replacement cost.

In an attempt to tap the wisdom of the "private-for-profit" sector, several large private corporations were contacted who operated van pools for their employees. Presumably, their disposition of vehicles that were in need of replacement or rehabilitation would give an indication as to which approach they viewed as most cost effective. Unfortunately, none of these companies had reached the point of establishing policy guidelines for deciding to replace or rehabilitate.

Several coach builders and rebuilders were then contacted to find out their view of rehabilitation, i.e., did they buy, or take in trade, used 16(b)(2) type vehicles, and if so, what did they then do with them? All indicated that they did take in used vehicles, for the purpose of rehabilitaion and resale. There was general agreement however, that standard vans, with replacement costs near \$10,000, were not generally cost effective candidates for rehabilitation because replacing the drivetrain alone could cost almost \$5,000. Substantially modified larger vehicles (high roof, doors, lifts, etc.) are significantly more expensive to replace (\$20-50K) and, therefore, offer greater potential for rehabilitation. The stated goal is to end up with a vehicle which is difficult to tell from new, with an expected life near that of a new coach, which can profitably be sold for approximately one half replacement cost. Obviously, what needs to be documented is the actual number of years the vehicle life is extended.

The fact that 16(b)(2) type vehicles are being successfully rehabilitated and sold is prima facia evidence that there are circumstances under which rehabilitation can be economically preferable to replacement. Those circumstances can only be determined by an impartial inspection of the vehicle condition and structural integrity. A procedure for determining the feasibility of rehabilitating a vehicle is suggested in the next section. An Inspection Checklist is provided in the Appendix.

Since the majority of 16(b)(2) applications are assembled at the state level by the State DOT for submission to UMTA, it may be appropriate for rehabilitation requests to be similarly handled. The State DOT's representative should probably have the responsibility for implementing a suitable procedure for identifying vehicles for rehabilitation. As a practical matter, the selection of a vehicle for rehabilitation depends on a good assessment of its present condition. Since the grant submission and approval process can be lengthy, grant requests may have to be made on the basis of a vehicle's expected condition at time of grant award. An alternative would be to allocate funds for rehabilitation to a state or region with the vehicle selection process being done as the need arises. In the process which is suggested it is assumed that there is no substantial delay between the time that a vehicle is selected and rehabilitation commences.

#### VEHICLE SELECTION PROCESS

It should be understood that the selection of a vehicle for rehabilitation is somewhat of a subjective process that requires good judgement by the parties involved. Although a process for obtaining the necessary information to support a decision can be outlined in step by step fashion, the criteria for making the decision can only be suggested in the form of guidelines. As experience is gained and data on the actual vehicle lifetime extension through rehabilitation is obtained, the guidelines can be refined into formal criteria.

1. The initial request for evaluation of a candidate vehicle should be generated by the E&H service provider and sent to the State DOT Coordinator of the 16(b)(2) program. The request should probably contain information shown in Appendix A, which includes a description of the vehicle and the rehabilitation work believed necessary by the service provider, vehicle maintenance history, and estimates of the replacement and rehabilitation costs. The purpose of requiring this information is to ensure that the service provider has done some preliminary investigation and believes that the rehabilitation of said vehicle may be worth further evaluation.

2. Upon receipt of the initial request, the State DOT Representative should probably designate an impartial expert to perform the vehicle inspection and evaluation.
3. The inspector should be given a copy of the initial request and then arrange to meet with the service provider for the purpose of reviewing the detailed vehicle maintenance log and inspecting the vehicle. Appendix B is a checklist that can be used for this review. Although the principal purpose here is to thoroughly document the condition of the vehicle, it is also important to determine if there are any chronic problems with the vehicle which might be valuable as a weighting factor in making a decision in borderline cases.
4. After completing the detailed inspection of the vehicle, items that the inspector finds in need of repair or replacement should be discussed with the service provider (and mechanic if possible). The list should include all items of routine maintenance (tires, brakes, etc.) and not just the items that have been requested for rehabilitation. The inspector should determine the capability of the maintenance staff to perform any of the needed repairs in-house, if that is what is intended, since in-house costs may be substantially lower than commercial repair establishments.
5. The inspector should complete his evaluation by estimating the cost to repair or replace all items that have been identified, using customary local labor rates or in-house rates as appropriate. These costs should be grouped into two categories: rehabilitation costs and other maintenance costs. Rehabilitation costs will be used as the basis for determining grant funding, whereas total costs would be used for determining the desirability of undertaking the rehabilitation.
6. The inspector should report his findings to the State DOT 16(b)(2) coordinator, submitting the vehicle checklist/cost estimates.

7. Using the inspector's report, the State DOT coordinator could then make a determination as to whether the vehicle is suitable for rehabilitation. That determination should be made using the vehicle selection guidelines suggested in the next section of this report.
8. State DOT may seek UMTA approval for vehicle rehabilitation, using whatever procedures have been established for that purpose.
9. After approval by UMTA, the State DOT representative may furnish the service provider with sample work statements which can be modified as appropriate to detail the level of vehicle rehabilitation. The service provider could then obtain 3 estimates for the work to be done.
10. After completion of the vehicle rehabilitation, the State DOT representative should arrange for another vehicle inspection to assure that all work has been performed properly.

#### Vehicle Selection Guidelines

While the preceding section outlined a possible procedure for implementing 16(b)(2) vehicle rehabilitation, the criteria for actually making the decision on any particular vehicle were not included. Recommendations are provided in this section, although they should be construed as tentative guidelines which will be revised as data and experience in rehabilitated vehicles are gathered.

1. Vehicle rehabilitation is not intended to compensate for deferred or poor maintenance. Therefore, only those vehicles which are at least four years old or have accumulated 100K miles should be considered for rehabilitation. This eligibility requirement should prevent service providers from neglecting or abusing a vehicle in anticipation of grant funding to repair the vehicle. Furthermore, 4 years or 100K miles are readily achievable with reasonable care.
2. Until such time as there is sufficient data to know reliably how long the vehicle service life can be extended through rehabilitation, it would be prudent to limit total rehabilitation expenditures to 50% of the cost to

replace the identical vehicle. 50% is recommended since a 2 1/2 year life extension on a "5 year" vehicle appears realistic and achievable. In addition, the 50% figure will allow the repowering of the least expensive standard van (costing \$10,000). Vans of this type needing a new drive train as well as extensive structural, body or interior work will of course be eliminated from consideration.

3. Requests to rehabilitate only the body or interior without drivetrain work should not be considered since this situation is most likely to occur as a result of an accident, which should be an insurance issue.
4. Annual reports, as a condition of the grant, should include maintenance and repair costs, miles traveled, a description of the type of service for which the vehicle is used, and a statement by the service provider expressing his opinion of the vehicle's post rehabilitation reliability and performance. This data will be needed to refine eligibility criteria in the future.
5. Rehabilitated vehicles should not be eligible for replacement until at least three years after rehabilitation takes place. Three years is recommended since that exceeds the break even point for a rehabilitation costing 50% of replacement. The requirement may also help to assure that the vehicle receives adequate maintenance care.
6. Rehabilitation of accessibility equipment should simply be treated as part of the vehicle, falling within the 50% limitation.

No attempt has been made to apply the formulas and procedures of UMTA's final rule on Bus Rehabilitation Program Policy and Procedures (49 CFR, Part 640), January 29, 1981. Although such an attempt may be appropriate at some future date, those formulas are critically dependent on the number of years of life extension, for which data is presently lacking in the case of 16(b)(2) type vehicles.

## Conclusions

- o It is feasible to rehabilitate certain 16(b)(2) vehicles. If a suitable candidate vehicle can be identified using a procedure similar to that discussed in this report, UMTA may permit its rehabilitation to be an eligible expense under the 16(b)(2) program.
- o The suitability of any 16(b)(2) vehicle for rehabilitation must be determined by conducting a thorough examination of the vehicle body and mechanical system. Typical items for inspection are shown in Appendix B.
- o The State DOT should have the responsibility for determining the suitability of any particular vehicle for rehabilitation.
- o Rehabilitation costs should not exceed 50% of the cost to replace the vehicle.
- o Rehabilitated vehicles should not be eligible for replacement for at least 3 years.
- o Annual reports on maintenance and repair costs of rehabilitated vehicles should be provided to UMTA for use in establishing future criteria for rehabilitating vehicles.



APPENDIX A  
REQUEST FOR VEHICLE REHABILITATION

VEHICLE DESCRIPTION

Year

Make

Model

Vehicle ID

Mileage

Seating Capacity

Engine Size

Transmission

List of Accessory Equipment (PS, A/C, etc.)

List of Special Vehicle Equipment (Lifts, High Roof, etc.)

VEHICLE REPLACEMENT COST

(Obtain at least one estimate of the cost to replace the vehicle with a new one having the same equipment this vehicle will have after rehabilitation. State the source of the estimate).

PROPOSED REHABILITATION WORK

(Describe the repair/replacement work that is being proposed for this vehicle. Describe also the overall condition of the vehicle and any new equipment intended to be added).

VEHICLE MAINTENANCE

(Describe the daily and scheduled maintenance the vehicle has received or attach a copy of your established maintenance plan).

VEHICLE REPAIR

(Attach a copy of vehicle repair log for at least the last two years. The log should show the date, mileage, cost and description of repairs made to the vehicle).

APPENDIX B  
INSPECTION OF CANDIDATE VEHICLES

All deficient items in need of refurbishing should be noted so that the vehicle will be returned to a "first class" condition. Some of these items may well be taken care of outside the rebuilding contract by the customary maintenance shop. Such details noted by the inspector should be marked in addition to his review of all items listed in the attached checksheets.

Checklists attached are meant to be as inclusive as possible. A particular vehicle, however, may have specific items which are not in the list (e.g., tires, rims, logo's, wheelchair securements, etc.) which should be considered while the rehabilitation project is underway and while the vehicle is out of service. Such items should be "write-in's" on a page added to these lists.

A third category of features which should be considered during a rehabilitation program is the inclusion of items necessary for greater accessibility such as raising the roof, adding a lift and wheelchair accommodations. Such items, however, should be considered in the light of whether the expected life extension of the vehicle will make the added expense worthwhile--or possibly opting for a new vehicle with these items.

General Inspection Considerations

The inspector should be a person unrelated to the service provider or to the potential rebuilder. The inspector should also perform post rehabilitation inspections to determine that all work is as specified and is satisfactory as to workmanship and proper functional operation.

Inspection of the drivetrain should probably include a complete engine diagnostic, road test, and perhaps a spectral analysis of transmission fluid. Reviewing maintenance records will be helpful.

In performing the pre-rehabilitation inspection, structural integrity is obviously of paramount importance. The strength of the "backbone" of the vehicle must not be impaired. Some vehicles are based on a frame of

SAFETY AND DESIGN CONSIDERATIONS  
IN WHEELCHAIR LIFT/VAN CONVERSION SPECIFICATIONS

by

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Prepared for Presentation at the  
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on

Rural Public Transportation

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Safety and Design Considerations  
in Wheelchair Lift/Van Conversion Specifications

INTRODUCTION

In its role as administrative agency for Section 16(b)(2) funds in the State, the North Carolina Department of Transportation is responsible for all equipment procurement. In 1980, the Department imposed a moratorium on accessible van purchases. This action was prompted by complaints and concerns expressed by private, nonprofit organizations in the following areas:

- . lift reliability and dependability;
- . adequacy of wheelchair tie-down equipment; and
- . inadequate interior access for ambulatory or semi-ambulatory persons.

The North Carolina Department of Transportation undertook a study to revise its specifications, explore new technological advances in wheelchair lifts and securement devices, and provide improvements in safety design. This paper presents our analysis and consideration of design features for wheelchair lifts/van conversions. It should be noted that the Department's findings and subsequent revisions to our specifications for this type of equipment represent a response to our particular concerns and priorities of operators of specialized transit services in North Carolina - and should be modified as necessary to meet the needs of other operators.

Limitations and Constraints

Of foremost importance, two constraints must be recognized:

First, most vehicle conversions are performed on 15-passenger vans, a vehicle clearly not designed or built to accommodate the addition of a wheelchair lift or raised roof. Many key specification decisions must be

compromised based on these vehicle design limitations. Second, wheelchair-bound individuals comprise only a small percentage of the mobility-impaired population; design considerations for other than wheelchair-bound individuals should be considered.

## SPECIFICATION AND DESIGN CONSIDERATIONS

### Wheelchair Lift and Related Items

**Lift Type:** Electric, electro-hydraulic, and electro-mechanical lifts are common on the market. NCDOT uses both electro-hydraulic and electro-mechanical lifts, however, local project officials generally prefer the hydraulic type, classifying them as easier to repair in-house.

**Power Source:** Most lifts are designed to operate from the existing power source. Separate power sources for the lift can be specified. NCDOT utilizes the existing power source, specifying a minimum battery amperage of 85 amp/hr.

**Installation:** Correct installation is essential for proper function and use of the lift. Since an independent contractor, rather than the lift manufacturer, is likely to be doing the installation work, we recommend that the bidder provide (either with their bid or at the time of contract award) a copy of the manufacturer's installation instructions. This will allow the transit manager or his inspector to check for proper installation.

**Deployment Mode:** Lifts can be specified as either semi-automatic or fully automatic type. With a semi-automatic lift, the operator must

manually lower and raise the lift platform from the stowed to deployed positions. NCDOT specifies a semi-automatic lift on the basis of cost and reduced chance of operator sequencing error in lift control operations.

**Capacity:** Capacity ratings differ among lift manufacturers. Evaluate capacity needs on the basis of the weights of various wheelchairs (consider electric wheelchairs), the weight of the wheelchair passenger, and the weight of an attendant who may be riding on the platform. NCDOT plans on maximum capacity loads of 605 lbs.; the lifts we have purchased over the last two (2) years are 1000 lbs. capacity lifts.

**Manual Deployment:** All lifts should be specified with a manual means of deployment in the event of a power failure.

**Lift Platforms:** Platforms should be of open mesh metal construction. Size can vary; 44" X 30" seems to be somewhat standard in the industry. The platform should have side roll-off barriers, minimum 2". NCDOT also recommends a front loading/barrier plate of at least 3". We also suggest attendant handholds whether or not attendants will actually ride the lift. Conversations with wheelchair users indicates their preference to grab some railing or handhold during ascent and descent for stability.



Lift Controls: Lift controls should be sufficiently protected from the elements to avoid the chance of operator shock. With 15-passenger vans, we suggest the operator control the lift from a point outside the vehicle, therefore, the control cord should be long enough to allow for proper extension. We also suggest that controls require continuous force to operate.

### Safety

Increased wheelchair passenger safety was a major concern in the revision of the Department's specifications for lift equipped-vans. Primary concerns included reducing the risk of injury due to a collapsing chair in a crash situation and reducing the prospect of injury from secondary impacts (i.e., wheelchair passengers striking other objects inside the vehicle). Based partially on research conducted at the Transportation Research Institute, University of Michigan<sup>1</sup>, NCDOT recognized that three areas must be addressed in concert to achieve our safety aims: (a) the wheelchair orientation inside the vehicle; (b) the wheelchair tie-down mechanism; and (c) the wheelchair passenger restraint system. Each of these items is addressed below.

Wheelchair Orientation: Wheelchair passengers positioned in a forward facing position, when secured with adequate chair and occupant restraint devices, are less prone to injury than passengers in the side facing position in paratransit type vehicles. Schneider reports that the majority

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<sup>1</sup>The author wishes to acknowledge the assistance of Dr. Lawrence W. Schneider at the Transportation Research Institute for providing film of sled impact tests of various wheelchair securement and occupant restraint devices as well as other technical documentation.

of injury-producing impacts are frontal; it is advantageous for the wheelchair occupant to be facing in the direction of the impact, rather than facing at right angles to the impact.<sup>2</sup>

NCDOT has adopted the forward facing orientation for all lift-equipped vehicles. While producing the desired safety element, forward facing wheelchair positions and the space necessary to maneuver wheelchairs into the forward position results in significantly reduced seating capacity for ambulatory passengers.

Wheelchair Securement: A variety of wheelchair securement devices are available on the market, including wheel rim pins, T-bars, power pans, and strap (lap belt and chair straps) securement methods. Unfortunately, there are disadvantages with each method.

Of particular importance is that the securement device attach to the wheelchair frame rather than the wheels. Attention should be paid to securement hardware, as tests have shown that the attachment hardware has been susceptible to fracture or breakage, even under pressure from only mild crash forces.

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<sup>2</sup>Schneider, Lawrence J., "Protection for the Severly Disabled - A New Challenge in Occupant Restraint," Proceedings, International Symposium on Occupant Restraint, Toronto, Canada, June 1981.

Cargo-type strap belts have proven effective in minimizing chain movement in crash conditions. NCDOT utilizes this method of wheelchair securement, installing a belt and track system which attaches to the wheelchair at four (4) points on the wheelchair frame. The process for securing the chair is more time consuming than other methods and vehicle operators must make sure to attach the straps at the proper points on the wheelchair.

Passenger Restraints:

The passenger restraint system should be independent of the wheelchair securement system. NCDOT uses a three-point independent passenger restraint system providing both upper and lower torso belt protection. The belt locks by means of an automotive, quick release type lock. Similar systems have demonstrated effective passenger restraint in sled tests; however, this system provides no protection in the neck area.

Other Considerations

Raised Roofs:

Little or no research has been conducted on the safety of fiberglass in crash situations, although some reports from North Carolina suggests a possible safety problem.

NCDOT requires steel reinforcement bars between the exterior shell and interior liner.

Additionally, this frame is welded to the body side panels to more adequately secure the top to the vehicle.

Vehicle Floor:

For ease in maneuvering wheelchairs inside the vehicle, NCDOT installs a plywood floor with rubber, antiskid transit-type floor covering.



DRIVER SELECTION IN THE RURAL TRANSIT INDUSTRY:  
A RISK MANAGEMENT PERSPECTIVE

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DRIVER SELECTION IN THE RURAL TRANSIT INDUSTRY:  
A RISK MANAGEMENT PERSPECTIVE

Risk management has been defined as "the process of planning, organizing, directing and controlling the resources and activities of an organization to minimize the adverse affect of accidental losses on that organization and keep those losses to least possible costs." (Fred S. James Co., p. I-8) In the transit industry, risk management incorporates many procedures designed to reduce accidental death and injury, such as driver selection and training, vehicle maintenance, accident reviews, safety meetings, vehicle selection, and scheduling. Objectives of a comprehensive risk management program for public transportation may include (Davis, et. al., May 1980):

- \* to minimize financial losses of an accident;
- \* to minimize losses to passengers and employees--medical expenses, pain and suffering, property damages, lost wages, etc.;
- \* to minimize uncertainty;
- \* to avoid public criticism due to an accident caused by an improperly selected or trained employee, lack of emergency procedures, or poor vehicle maintenance;
- \* to avoid creation of a poor public image;
- \* to maximize the transit system's effectiveness by preventing disruption of service and interference with its ability to deliver transportation;
- \* in the long run, to earn lower insurance costs through the application of modifiers for a low-loss experience.

This paper concentrates on one aspect of risk management: driver selection. The transit operator or driver is the critical element in the success or failure of a transit operation and its risk management program; poorly selected drivers cause accidents. The study was developed to accomplish two purposes. First, a survey was designed to test the perception that significant deficiencies in risk management procedures, and specifically driver



selection processes, existed in the rural transit industry. For instance, the authors of the Social Service Insurance Dilemma described the risk management approach of some service providers:

...a director of an agency has a desperate need for client transportation, obtains a vehicle from a Section 16(b)2 program, convinces the city to include the vehicle under its blanket insurance policy, uses city gas and gets drivers anywhere possible, including teenagers who cannot find work, volunteers and retirees who want something to do. Without training or supervision, these drivers are told to pick-up clients. Contributing to the problem is the fact that many directors have no idea of what to look for in a good driver (Davis, et. al., 1979, p. 57).

Second, and most important, the objective of the research was to develop a useful tool or model for driver selection in the industry.

#### INDUSTRY SURVEY

The survey sample consisted of 85 recipients of UMTA Section 18 funding in the six states of the Southwest--Texas, Arkansas, Louisiana, Oklahoma, New Mexico, and Arizona. The list was generated by contacting state-level administrators with a request for the mailing addresses of all projects which had received Section 18 funding in their state.

On March 11, 1983, a cover memorandum and questionnaire were mailed to the 85 rural transit systems in the Southwest. A stamped and self-addressed envelope was enclosed to insure anonymity of responses. A total of 35 responses were returned, representing a 41.2% return rate. Follow-up contacts to non-responsive systems were not possible because of the anonymity of the responses.

## SURVEY RESULTS

### Demographic Characteristics

Fifty-eight percent of the reporting systems served a population area of less than 50,000 people. The fact that 42% served populations greater than 50,000 is not inconsistent with the Section 18 requirement for non-urbanized status. Rather, it is an indication that the projects extend over large rural areas (counties, parishes, etc.) with many communities, none of which exceed 50,000. Seventy-two percent of the projects operate 14 vehicles or less, indicating the small size of rural transit operations in comparison with urban transit.

There were 353 drivers represented in this study, both full and part-time. Responses ranged from 0 to 36 for full-time drivers per system, and from 0 to 21 for part-time drivers per system. The "average system"--as measured by the mean--employs approximately 10 to 11 drivers, including both full and part-time. The rural transit industry utilizes part-time drivers to meet the demands of the flexible paratransit services offered. Besides these requirements for flexible scheduling, other factors behind the use of part-time employees could be the hourly limitations of public training programs, limitations of funds, and low demand (reduced hours of operation).

Sixty-three percent of the drivers represented in the study were female. This is surprising in light of the predominance of male operators in the urban transit industry. For instance, a study by Jordan-DeLaurente and Associates of 97 urban transit systems in 1981 revealed that 88% of the bus drivers were male (sample of 58,949 drivers). The predominance of female drivers in rural transit may be a function of availability, wages, skills, or a variety of other factors.

Sixteen percent of reported drivers were younger than 24 years of age or

older than 65. For the older age group, there were significant differences for male and female drivers: 23% of the male drivers were 65+, while only 6% of the female drivers were in this category. Although no explanations for this result are apparent, they likely include a combination of social and physiological factors.

### Selection Ratio

The selection ratio is a measure of the number of job openings to the number of applicants. Using the mean, survey results indicate that reporting systems hire approximately 15-20% of their applicants. Conversely, for every position available, there are approximately 5-6 applicants.

It is suggested that one of the factors behind the low selection ratio is frequent use of public training agencies as a source of drivers in the rural transit industry. Public training programs have included the Comprehensive Employment and Training Act (CETA), the "Green Thumb" program (Department of Labor), the Senior Texans Employment Program (Department of Labor), and others. These programs offer a rural transit industry two significant advantages: a "free" driver (i.e., a driver whose wages are paid by someone else), and a ready source of "unrestricted federal" and local matching dollars required under the Section 18 program.

### Recruitment

Rural transit projects focused their recruitment on four principle efforts: media advertisements, public training programs, referrals from employees, and walk-in applicants. The largest systems (25+ vehicles) utilized employment agencies and media advertisements. Fifty-five percent of the total reporting systems and 66% of the systems with 4 vehicles or less utilize public training

programs as a source of applicants. In contrast, urban systems, according to the Jordan-DeLaurante study, do not utilize public training employees for driver positions (1981).

Only 12% of the respondents indicated that they had a formal personnel department to screen recruited applicants. Comments written on the affirmative responses provided some indication that the personnel departments were city or agency subunits rather than a specific department within the transit operation. The remaining systems identified a variety of individuals/groups responsible for screening applicants, including the transportation manager, the Executive Director, the Board of Directors, and local community screening committees.

### Selection Procedures

Rural transit projects were asked to list their selection procedures in the order in which they occur in the hiring process. All respondents indicated the use of a written application as the first step in the process. Ninety-six percent indicated that an interview followed the application. Following these two practices, the listings included motor vehicle record checks, physical exams, training programs, references, a probationary period, and other processes.

### Minimum Hiring Requirements

Minimum/Maximum Age Limits--Forty-eight percent of reporting systems had minimum age requirements while only 30% had maximum age requirements. Reported minimum age requirements were 18 years of age (3 respondents), 21 years (8 respondents), and 25 years (5 respondents). Maximum age requirements were 65 years of age for 4 respondents, and 45, 50, 55, 60, 69, and 80 years of age (one respondent each).

Motor Vehicle Record (MVR) Check--Eighty-two percent of the systems reported that they conducted an MVR check on applicants. Standards for rejecting or disqualifying an applicant based on the MVR were varied.

- \* No standards--depends on the number and nature of violations (10 respondents)
- \* DWI/Felony driving offense (8 respondents)
- \* No violations within the last three years (6 respondents)
- \* 3 or more moving violations within last three years (3 responses)
- \* Point system
- \* Insurance company clearance

Written Tests--Only three respondents reported administering a written test to driver applicants. The tests included a basic reading/writing quiz, a role playing test which included completion of forms, and a combination of the school bus driver examination and an in-house driver exam.

Driving Tests--Fifty-five percent of responding projects reported the use of an "on-the-road" driving test. However, of that number, only 22% score the test formally.

Driver Training--Surprisingly, only 39% of reporting systems required or provided formal driver training. Requirements varied.

- \* Defensive Driving Course (DDC) only (3 respondents)
- \* Unspecified on-the-job training (3 respondents)
- \* DDC and First Aid (2 respondents)
- \* DDC, First Aid, CPR, and Passenger Assistance Techniques
- \* 30 days of on-the-job training with experienced driver
- \* Apprenticeship on-the-road under supervision of senior operator
- \* Contract training with large metropolitan bus system
- \* Formal training by state police twice a year

Criminal History Investigation--Thirty-six percent of reporting systems

conduct a criminal history investigation of prospective drivers. Among these projects, standards for disqualifying or rejecting an applicant included the following responses.

- \* Felony or major misdemeanor (2 respondents)
- \* "Advice from a police department."
- \* "Conviction of a felony or character abuses which are not conducive to association with minors or dependent clients."
- \* "Anyone with a police record does not work for me. We have too many good people who need jobs."
- \* "Any felony which might reflect instability or endanger vehicle passengers."
- \* "Any convictions for driving or morals charges."
- \* "Ex-offenders qualify one for the target Job Tax Credit."

Licensing Requirements--All but 15% of the responding systems have licensing requirements: chauffer, limited chauffer, or school bus operators license.

Physical Examination--Thirty percent of the systems reported that no physical or medical examination was required of new drivers. Of the 70% with the requirement, 4 systems (17%) had someone other than the physician rule on the medical fitness of the prospective employee, such as the agency director. One respondent wrote, "Most applicants are known to employees or Board of Directors," apparently to indicate that physical examinations were not necessary.

### Selection Process Success

Objectives/Quantitative--Thirty-five percent of respondents reported use of written objectives or quantitative methods to measure success of the driver screening and selection process. Descriptive responses included the following items.

- \* Formal Subjective Evaluation Process (Monthly, Quarterly, or Annually)--(5 Responses)
- \* "Service and Accident Record vs. Miles Traveled."
- \* "Point System Applied to all Exams."
- \* "1. Passenger views the driver  
2. Ability to effectively manage passengers  
3. Ability to recruit and maintain higher number of passengers in their respective routes."
- \* "1. By the number of terminations per year other than transfers, retirement, resignation;  
2. Insurance rates, accidents."
- \* "Turn over rate of drivers; number of safe passenger miles driven; number of preventable accidents/passenger miles driven."
- \* "Passenger safety and property loss statistics; longevity of company drivers; passenger complaints; absence of any personal injury since began operations in 1978; low turnover rate among drivers; infrequency of disciplinary actions or dismissal."

Alternative Judgements--Of the twenty-two projects (66%) that reported no written objectives or quantitative methods for judging success, thirteen failed to provide any description of how they judged success or failure. Nine reporting projects provided descriptions of alternative methods of judging selection process success:

- \* Probationary Period ( 5 Responses)
- \* Passenger Surveys
- \* By participant comments
- \* "A comprehensive interview will eliminate in most instances a poor hit--it works for us."
- \* "I judge the success or failure of all drivers by making the first 3 runs with the drivers. After I decide if he is the one for the job."
- \* "Check the driver each day for performance."
- \* "We hand out a questionnaire to all our riders and ask them to return in a sealed envelope. We also utilize the comments for support for our programs."
- \* "People will ride the bus! It will get good reviews or else they won't and we will hear complaints."

- \* "Periodic interviews with passengers regarding drivers performance and 'bird-dogging' (observing driver without his or her knowledge)."

### Survey Summary

The typical rural public transportation system operates less than 14 vehicles with a work force of approximately 10 drivers. Most drivers are female, recruited through public training agencies, media advertisements, referrals from employees, and walk-ins. Because of the small size of the organizations, the manager is directly responsible for personnel selection as well as other management functions. Selection decisions are made subjectively, primarily on the basis of an application form and an interview. Minimum requirements on screening tools are used by some but not all managers in selection. Once selected, many drivers began transportation service delivery with little or no formal training. Finally, the manager judges the success or failure of the organization's selection of drivers on the basis of subjective evaluations of each driver's performance.

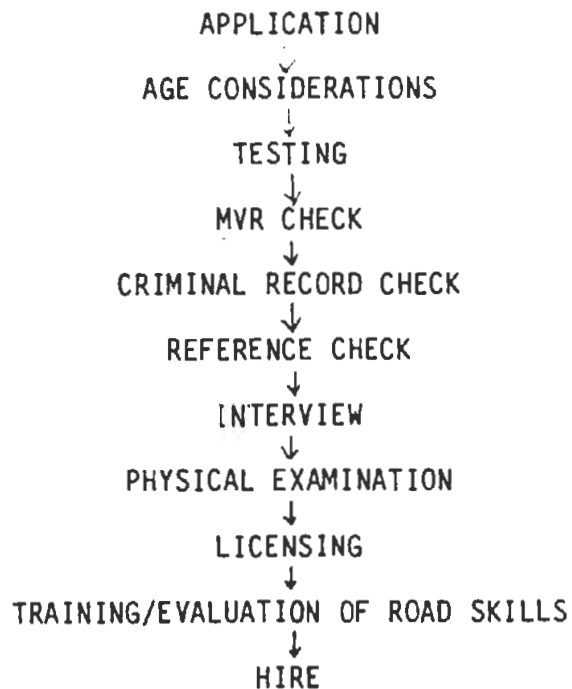
### A MODEL FOR DRIVER SELECTION

Driver selection is only one component of a good risk management program. In like manner, identifying the best applicant from a risk management perspective is only one objective of a good driver selection process. For instance, the organization must assure that equal employment opportunity objectives are met. Drivers must possess sufficient skills to keep trip logs and get along well with passengers. However, the model and recommendations which follow address risk management objectives only. In application of this model, a manager should incorporate additional predictors and requirements to address the organization's total objectives.



Selection procedures become relevant only when there are more applicants than positions to be filled. Rural transit managers should therefore develop recruitment processes to assure that an adequate pool of applicants are available. This is no easy task in a sparsely populated rural area. The total range of recruitment options should be considered. A change in compensation strategies or levels, when possible within legal or budgetary constraints, could make employment within the system more attractive. An enhanced reward structure and other progressive management techniques could also improve the applicant flow. Finally, an organization's ongoing marketing efforts could be directed to improving the system's image within the potential applicant pool.

The final model or framework for driver selection from a risk management perspective can be represented as follows:



### Application Blank

In various studies, the application blank has been proven as a valid predictor of future job performance. Underlying the validity is the assumption

that past or present behaviors are good indicators of future behaviors (Heneman, et. al., 1980). Studies have also shown that information provided on blanks are unlikely to be falsified, apparently because much of the information can be verified by the employer (Cascio, 1982).

To be of optimal value, the blank should include questions specifically related to the job. Recommended questions for the job of driver should include those items listed in the Federal Motor Carrier Safety Regulations (1981), including a listing of unexpired motor vehicle operators licenses, nature and extent of experience in operation of motor vehicles, a listing of motor vehicle violations and accidents, and current medications.

#### Age Considerations

The age of the applicant can be discerned immediately from the application blank. If the organization has established age requirements for the job, those applicants whose ages fall above or below the limits can be rejected.

The question of age requirements for transit or commercial drivers has seen much controversy. The Federal Motor Carrier Safety Regulations (1981) require that interstate commercial operators be at least 21 years of age. Additionally, a survey of the guidelines for selection used by the Student Transportation Departments revealed that many states have age requirements for school bus drivers (Kent, 1982). Yet, other states, transit systems, and other transportation providers have not established age limitations.

Some reluctance to establishing age limits can be attributed to the Age Discrimination in Employment Act of 1967 (ADEA). As amended in 1978, the ADEA prohibits employment practices that discriminate against people between the ages of 40 and 70. If a plaintiff establishes a case of age discrimination, an employer can justify the actions only "where age is a bona fide occupational

qualification (BFOQ) reasonable necessary to the normal operation of the particular business" or "where the differentiation is based on reasonable factors other than age." To establish the BFOQ condition, an employer must demonstrate that all or potentially all members of an age group are unable to perform the job safely and efficiently. Finally, the job must be proven as essential to the business.

The transportation industry has been successful in proving before the courts that age is a BFOQ of the driver job. In Hodgson v. Greyhound Lines, Inc. (499 F.2d.859, 7th Circuit, 1974), Greyhound defended the practice of refusing to hire anyone over 40 years of age by demonstrating that "the human body undergoes physical and sensory changes beginning around 35 and that these degenerative changes, caused by aging, have a detrimental impact on driving skills." The Court agreed with the standard, noting that "...Greyhound, entrusted with the lives and well-being of passengers, must continually strive to employ the most highly qualified persons available for the position of intercity bus driver for the paramount goal of a bus carrier is safety." A similar decision was reached two years later in Usery v. Tamiami Trail Tours, Inc. (531 F.2d.224, 5th Circuit, 1976). Finally, in A.D. Jackson v. Board of Public Education and Orphanage of Bibb County (1979), a school district's practice of mandatory bus driver retirement at age 65 was upheld by the District Court. The Court concluded that the age limit was a BFOQ because of the considerable risk of transporting school children.

The problems of the older driver are usually attributed to failing health and impaired sensory and motor capabilities. For instance, a study designed to investigate the variations in speed of performance and decision-making ability with age on a variety of tasks revealed that there were distinct deficiencies of performance and decision-making time among the older subjects (Kochar, 1979).

Several studies have shown that older drivers have greater difficulty reading highway signs at night and adjusting for oncoming headlight glare (Pulling, et. al.,1980; Carlson, 1973; Sivak, et. al.,1981; Sturgis and Osgood, 1982). By using both laboratory tests and highway driving experiments, Maurant and Maurant (1979) demonstrated that significant deficiencies in general driving performance were recorded by drivers between ages 60 and 70. Finally, a comprehensive analysis of the elderly's medical and physiological characteristics completed in 1970 asserted that vision, hearing, central nervous system, locomotor system, and cardiovascular system qualities degenerated with age and posed a serious handicap for older drivers (Libow, 1970).

Although age requirements in the rural transit industry have not been tested in the courts, managers must be sensitive to the inherent risks of older drivers. While some of the physiological deficiencies of the older drivers could be detected in a thorough physical examination, many problems attributed to the general degeneration of the physical systems may not be identified in the examination. The survey revealed that several projects have established age requirements for drivers. If age limits are not feasible in a particular project, the system must assure to the best of its ability that drivers are well screened and physically capable of performing the job safely. One suggestion would be to conduct job-related physicals for older drivers on an accelerated schedule.

### Testing

Courts have been reluctant to uphold employment tests where there is no clear evidence of a definitive relationship between test performance and job behavior. However, a general driving knowledge test could be developed to measure the knowledge of state laws regarding vehicle operation as well as the

ability to read road signs. Such a test could likely be upheld as a content valid test, a measurement procedure concerned with "whether or not it (the test) contains a fair sample of the universe of situations it is supposed to represent (Cascio, 1982)." An example of general knowledge test is provided by the State of Michigan in the Michigan Small Bus Program Management Handbook available through the DOT Technology Sharing Office. Finally, it is recommended that driving skills be evaluated during the training period rather than by a scored on-the-road test for all applicants.

#### Motor Vehicle Record (MVR) Check

An MVR report is available by contacting the appropriate records agency within the state. The record is simply a report on the driver's past performance: accident involvement, traffic violation convictions, and license status. The MVR is essential to verify license status. Assuming that past behavior provides an indication of future performance, the information also is necessary to screen high-risk drivers. Indeed, several studies have demonstrated that there is a strong positive relationship between the number of traffic convictions and accident involvement (O'Neill, 1968; Crancer, 1967; Banks, et.al., 1977).

To make use of the MVR in the selection procedure, standards must be established. A common rule-of-thumb in the insurance industry is three or more accidents and/or moving violations in the last two years for high-risk status. Any "driving while intoxicated" violation on the record should also be included in the disqualifying standards.

#### Criminal Record Check

With responsibility for the lives and safety of passengers and equipment

valued in thousands of dollars, drivers must be evaluated for previous criminal history. In most circumstances, criminal records may be obtained through the local law enforcement agency. There is some question as to the legality of requesting a personal record of criminal history from the state without approval of the applicant. Under such circumstances, a form should be prepared requesting permission from each applicant to investigate his/her criminal history record.

Studies indicate that criminals consistently have a much higher accident rate than those without a criminal record (McGuire, 1976). The basis for the positive relationship between criminal record and accident rate apparently consists of personality factors. At a minimum, standards should probably include felony involvement use of a motor vehicle, driving while intoxicated convictions, felony possession of narcotic drugs, and felony convictions of crimes against another person.

#### Reference Check

References from the applicants' former employers should be included in the selection process as a rough and quick screening tool to identify undesirable candidates for employment.

#### Interview

By this step in the process, the field should be narrowed to a few select candidates. A uniform employment interview should now be administered for these applicants.

The interview process has been subject to much criticism due to its subjectivity and misuse by employers. Interviews are subject to interviewer biases, contrast effects, negative informational emphasis, and other problems.

The unstructured nature of many interviews frequently results in quick decisions made on the basis of stereotypes.

Yet, an interview can perform two vital functions. First, it can fill gaps from incomplete, questionable, or key application blanks requiring further information. Second, the interview can be used to provide information on factors that can be observed only through face-to-face communication, such as poise, appearance, communication ability, and so on.

Interviews should be as structured as possible to provide a uniform assessment of all candidates. From a risk management viewpoint, an interview could provide more information regarding applicants' previous driving experience, as well as impressions of how well an applicant will fit into the organization and relate to passengers.

### Physical Examination

A physical examination should seek to describe the physical ability of the applicant to perform his/her tasks efficiently and safely, without injury to himself, passengers, or property, and without aggravation of pre-existing diseases or conditions. The standards outlined in the Federal Motor Carrier Safety Regulations (1981) are generally used in the urban transit industry and should be considered for use in the rural transit industry.

The examining physician should be required to certify the qualifications of the applicant, based upon a written description of minimum requirements and disqualifying conditions, and a detailed description of the job requirements. A transit manager should not assume the responsibility or liability of passing judgement on an applicant's physical qualifications. If possible, the organization should contract with one trusted physician for all physicals to insure uniformity of examinations.



### Licensing

Upon the basis of these selection tools, one individual for the driver position should be selected. At a minimum, the individual should obtain the appropriate license required by the state for rural public transportation drivers. The license requirement is usually based upon the type of equipment operated and/or the business status (private, public, commercial, etc.). Where the organization has a choice in requiring a limited chauffer's license or a standard chauffer's license, the unlimited status is recommended as an additional screening tool, given more stringent requirements for licensing.

### Training/Evaluation of Road Skills

The survey of rural transit selection practices identified proper training as a very significant weakness in the industry. Undoubtedly, the causes behind this weakness are many and varied: costs, organizational informality, lack of management orientation, the practice of hiring former passengers who "know" the operational procedures, and so on. Regardless of the causes, driver training should not be neglected. Training professionalizes the system's drivers, improves the risk management profile, and informs the driver of his/her mission, responsibilities, and methods of performing job functions. Finally, the minimum components of a good training program are not necessarily expensive.

A risk-management oriented training program should include the following components.

- \* Defensive Driving Course (DDC)--The National Safety Council's DDC is an eight-hour workshop, usually available from the local or state law enforcement agency. Cost is minimal: \$15-20 per participant. Studies have shown the DDC to be an effective tool in reducing accidents.
- \* First Aid Course--Passengers have pre-existing physical problems and are subject to injury within the vehicle. Thus, drivers should have some



basic skills in recognizing and dealing with medical emergencies. The local American Red Cross chapter will usually provide the training free of charge to the agency or individual.

- \* Behind-the-Wheel Training--It is essential that drivers "practice" under direction of a supervisor or qualified senior operator before transporting passengers alone. The organization should develop a defined instruction program rather than simply "riding around the block" with a new driver.
- \* Basic Vehicle Maintenance--Drivers must know when to report and how to recognize potential vehicle mechanical problems. In many rural transit operations, drivers must also be trained in the daily servicing and inspection of vehicles.
- \* Emergency Procedures--Drivers must know what to do in cases of accidents, non-collision passenger injury, on-the-road breakdowns, and other emergencies. Written procedures should be developed for such situations.
- \* Passenger Assistance Techniques (PAT)--The risks and dangers inherent in transporting handicapped passengers requires specialized training for lift/ramp equipped systems. PAT is available from the Transportation Management Associates of Ft. Worth, as well as other consulting firms.

Optional training components include CPR techniques and sensitivity or human relations training.

### Success Criteria

If the selection model is of value, benefits should be measurable. Criteria for measuring success of this model may be structured within two components: accident rate and accident severity. First, accident rate analysis attempts to measure the frequency of accident occurrences over a base unit of performance or production. Possible indicators include:

- \* Accidents per driver over a unit of time (average);
- \* Accidents per standard unit of miles--passenger or vehicle miles;
- \* Miles driven per accident;
- \* Accidents recorded by each driver.

The indicators may be analyzed in greater detail if needed, such as by accident type: collisions, fatalities, and non-collision accidents.

Secondly, an accident severity analysis should also be correlated to the driver selection processes. Severity indicators provide a measurement of the seriousness of the results of accidents, and could include:

- \* Dollar losses per accident/mile/work days or hours;
- \* Fatalities per accident/mile/work days or hours;
- \* Workdays lost per 1000 hours worked because of accidents;
- \* Total dollar losses per year; and
- \* Total fatalities per year.

Monetary loss analysis is usually available from the system's insurance carrier, although some agents are reluctant to release the information.

Driver turnover rate could be an additional indication of selection process success: studies have indicated that the turnover rate may be positively correlated with the accident rate. Finally, the subjective performance evaluation/supervisor ratings used in many systems may also be affected as the total safety record of the system improves.

The criteria of accident rate, accident severity, and turnover are undoubtedly impacted by numerous predictors; personnel selection is only one factor. However, the correlation between driver selection predictors and the above criteria is perceived as positive and significant. The conceptualization of this relationship will require that rural transit systems initiate and maintain accurate and detailed records of accidents and losses.

## CONCLUSION

The effective management of risk is one of the most critical tasks and responsibilities of a rural transit manager. The survey of Section 18 systems revealed significant weaknesses in one specific component of risk management:

driver selection. The basic features of the presented model, if adopted, would serve to improve the driver selection process in the rural transit industry.

## REFERENCES

- Banks, William W., et al. "The Relationship Between Previous Driving Record and Driver Culpability in Fatal Multiple-Vehicle Collisions." Accident Analysis and Prevention 9 (1977): 9-13.
- Carlson, William L. "Age, Exposure, and Alcohol Involvement in Night Crashes." Journal of Safety Research 5 (1973): 247-259.
- Cascio, Wayne F. Applied Psychology in Personnel Management. Reston, Virginia: Reston Publishing Co., 1982.
- Crancer, Alfred. "Involvement of the Problem Driver in Fatal Motor Vehicle Accidents--1966 Data." Traffic Quarterly 21 (1967): 601-610.
- Davis Jr., Frank W., and David A. Burkhalter. New Insurance Programs for Human Service Transportation Providers: Technical Advisory No. 1. Washington: Department of Health, Education and Welfare, 1979.
- Davis Jr., Frank W., and Tim Cleary. "Resolving the Human Service Insurance Dilemma" in Proceedings of the Fourth National Conference on Rural Public Transportation. Washington: Urban Mass Transportation Administration, 1979.
- Davis Jr., Frank W., et al. Driver Selection and Training for Human Service Agencies. Knoxville: The University of Tennessee Transportation Center, November 1980.
- Davis Jr., Frank W., et al. The Social Service Insurance Dilemma: Problems, Analysis, and Proposed Solutions. Washington: Department of Transportation--Research and Special Programs Administration, 1979.
- Davis Jr., Frank W., et al. Training Manual for Human Service Risk Managers. Knoxville: The University of Tennessee Transportation Center, May 1980.
- Davis Jr., Frank W., and Stephen LeMay. Administrator's Guidelines for Implementing Driver Selection and Training for Human Service Agencies. Knoxville: The University of Tennessee Transportation Center, n.d.
- Federal Motor Carrier Safety Regulations. Washington: Federal Highway Administration, 1981.
- Fred S. James and Company, Inc. of Virginia. The Insurance Situation of Public Transit Systems. Washington: Urban Mass Transportation Administration, 1978.
- Heneman, Herbert G., et. al. Personnel/Human Resource Management. Homewood, Illinois: Richard D. Irwin, 1980.
- Jordan-DeLaurenti and Associates. Review and Evaluation of the Use of Bus Operator Testing Procedures in the Personnel Selection Process. Washington: Urban Mass Transportation Administration, 1981.



- Kent, E. W. A Compilation of the Guidelines Used by Most of the Student Transportation Departments in the United States and Canada. National Safety Council, 1982.
- Kochar, Dev S., and Hatem M. Ali. "Age as a Factor in Combined Manual and Decision Tasks." Human Factors 21 (1979): 595-603.
- Libow, Leslie S. "Older People's Medical and Physiological Characteristics: Some Implications for Transportation" in Transportation and Aging: Selected Issues. Washington: Administration on Aging, 1970.
- McGuire, Frederick L. "Personality Factors in Highway Accidents." Human Factors 18 (1976): 433-442.
- Michigan Department of Transportation. Michigan Small Bus Program Management Handbook. Michigan: Bureau of Urban and Public Transportation, reprinted by USDOT, 1979.
- Mourant, Ronald R., and Ronald R. Mourant. "Driving Performance of the Elderly." Accident Analysis and Prevention 11 (1979): 247-253.
- O'Neill, Peggy Ann. "Relationship of Accident Involvement and Number of Citations: 1966 Data." Traffic Quarterly 22 (1968): 583-594.
- Pavilon, Michael. "Bi-State Takes DDC Route to Operator Improvement." Traffic Safety 75 (July 1975): 9, 36-37.
- Planek, Thomas W. "An Evaluation of the National Safety Council's Defensive Driving Course in Various States." Accident Analysis and Prevention 6 (1974): 271-297.
- Planek, Thomas W., William A. Mann, and Earl L. Wiener. Aging and Highway Safety: The Elderly in a Mobile Society. Chapell Hill: North Carolina Symposium on Highway Safety, 1972.
- Public School Transportation. Austin: Texas Education Agency, 1981.
- Pulling, Nathaniel H., et al. "Headlight Glare Resistance and Driver Age." Human Factors 22 (1980): 103-112.
- Sivak, Michael, et al. "Effect of Driver's Age on Nighttime Legibility of Highway Signs." Human Factors 23 (1981): 59-64.
- Sturgis, Samuel P., and Deborah J. Osgood. "Effects of Glare and Background Luminance on Visual Acuity and Contrast Sensitivity: Implications for Driver Night Vision Testing." Human Factors 24 (1982): 347-360.
- Wagner, Bruce C. Employee Selection Procedures: A Guide for Managers of Transit and Paratransit Agencies. Virginia Commonwealth University: Transportation Safety Training Center, 1981.



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MEMORANDUM

TO: Small Urban/Rural Transit Systems, Southwest

FROM: Terry A. Young, General Manager, Brazos Transit System TAY

DATE: March 7, 1983

SUBJECT: Survey .

The Brazos Transit System is conducting a survey of the recruitment, screening, and selection processes utilized by non-urbanized systems in hiring new drivers.

The purpose of this survey is two-fold. First, the results of the survey will enable our system to design a hiring process that reflects the best and current practices of the rural transit industry. Second, we would like to utilize the results to develop a study that contrasts the selection processes of the rural transit industry with those of the urban transit industry.

Please take a few minutes to complete the enclosed survey, and return it in the stamped envelope provided for you.

Please note: Do not identify your system on the survey. The addressed envelope has been provided so that neither we nor anyone else will be able to trace individual responses to the respondents. (The survey is being mailed to 85 systems in the Southwest.)

If possible, please return the questionnaire by April 4, 1983. Analyzed results should be available to all interested parties by May 15. If you have any questions or comments, please call.

Thank you for your cooperation!



## DRIVING SELECTION SURVEY

This form will attempt to record an accurate description of your selection process through a series of questions. As used here, the screening and selection process refers to the hiring practices you use to select from a pool of job applicants the best person for the job. The term "driver" is used throughout the survey as the title of the person who drives or operates your vehicles.

### DESCRIPTION OF YOUR TRANSIT SYSTEM

Answer the following questions by placing an "X" before the statement which best answers the question. Choose only one answer for each question.

1. The population of the combined service area served by your system is:

- 1,000,000 or More People
- 500,000 to 999,999 People
- 250,000 to 499,999 People
- 100,000 to 249,999 People
- 50,000 to 99,999 People
- Under 50,000 People

2. How many total vehicles does your system operate?

- 50 or More Vehicles
- 25 to 50 Vehicles
- 15 to 24 Vehicles
- 5 to 14 Vehicles
- 1 to 4 Vehicles

3. How many full-time drivers do you employ? Fill in the number here \_\_\_\_.

4. How many part-time drivers do you employ? Fill in the number here \_\_\_\_.

5. What is the total number male drivers (full and part-time) in your system within the following categories? Fill in the number next to the category.

- Black Males
- White Males
- Hispanic Males
- Native American Indian Males
- Oriental and Other Males

6. What is the total number female drivers (full and part-time) in your system within the following categories? Fill in the number next to the category.

- Black Females
- White Females
- Hispanic Females
- Native American Indian Females
- Oriental and Other Females

(over)



7. What is the total number of male drivers (full and part-time) in your system within the following categories? Fill in the number next to the category.

- \_\_\_\_\_ 18 to 25 Years of Age
- \_\_\_\_\_ 25 - 54 Years of Age
- \_\_\_\_\_ 55 - 65 Years of Age
- \_\_\_\_\_ More than 65 Years of Age

8. What is the total number of female drivers (full and part-time) in your system within the following categories? Fill in the number next to the category.

- \_\_\_\_\_ 18 to 25 Years of Age
- \_\_\_\_\_ 25 - 54 Years of Age
- \_\_\_\_\_ 55 - 65 Years of Age
- \_\_\_\_\_ More than 65 Years of Age

9. How many applications did you receive in the calendar year 1982 for the position of driver? (If records are not available, make an "educated guess"). Fill in the number here \_\_\_\_\_.

10. How many full-time drivers did you hire in the calendar year 1982. Fill in the number here \_\_\_\_\_.

11. How many part-time drivers did you hire in the calendar year 1982. Fill in the number here \_\_\_\_\_.

RECRUITMENT PROCEDURES FOR DRIVERS

1. In the following list, please place an "X" before the methods or sources used to recruit drivers for your system. You may check more than one item in the list; check all items that apply to recruiting drivers in your system.

Your transportation system uses for recruiting:

- Media advertisements (newspapers, radio and/or TV)
- Employment agencies (public or private)
- Public training programs (Green Thumb, STEP, CETA, etc.)
- Referrals from other employees
- Referrals from other transportation and/or social service organizations
- Vocational Rehabilitation Centers
- Educational Institutions
- Minority and Women's Organizations
- Walk-ins
- Other (Please Describe: \_\_\_\_\_)

2. How often do you take applications for drivers during the course of a year? (Check one)

- On a walk-in basis, at anytime
- Variable, only when a driver is needed
- Once a year
- More than once a year, at specified times

3. Do other agencies take applications and do screening of drivers for you?

- Yes
- No

4. Do you have a personnel department to screen and select drivers?

- Yes
- No

5. If answers to questions 3 and 4 were "No", please list the title of the individual(s) who screens and selects drivers.

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SELECTION PROCEDURES

1. In the following spaces, please write out the procedures you use in selecting/hiring drivers. Please list the procedures in the order in which they occur. Add more lines if necessary.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_
- g. \_\_\_\_\_
- h. \_\_\_\_\_

EXAMPLE: A sample answer to this question might be:

- a. Require written application
- b. Conduct interview
- c. Check previous employer references
- d. Require physical examination
- e. Conduct Defensive Driving Training

MINIMUM HIRING REQUIREMENTS

1. Do you have minimum or maximum age limits for prospective drivers?

- \_\_\_\_\_ Yes
- \_\_\_\_\_ No

If yes, please specify: minimum \_\_\_\_\_  
maximum \_\_\_\_\_

2. Do you conduct a motor vehicle record check on previous driving history?

- \_\_\_\_\_ Yes
- \_\_\_\_\_ No

If yes, please list standards for disqualifying or rejecting an applicant.

\_\_\_\_\_  
\_\_\_\_\_

3. Do you administer any written tests to driver applicants?

Yes  
 No

If yes, please list the tests you use.

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4. Do you administer an "on-the-road" driving test to driver applicants?

Yes  
 No

If yes, is there a formal scoring process for this driving test?

Yes  
 No

5. Do you require formalized driver training for prospective drivers (prior to assigning them to service).

Yes  
 No

If yes, please list or describe the required training.

---

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6. Do you conduct a criminal history investigation of prospective drivers?

Yes  
 No

If yes, please list standards for disqualifying or rejecting an applicant.

---

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7. Do you have minimum driver licensing requirements (i.e., Limited Chauffer, Chauffer, Commercial Operator, etc.).

Yes  
 No

If yes, please specify: \_\_\_\_\_

(over)

8. Do you require a physical/medical examination for prospective drivers?

Yes  
 No

9. If your answer to question #8 is yes, do you require the examining physician to certify the physical qualifications of the applicant to complete the specific job of driver?

Yes  
 No

10. If your answer to question #9 is no, please list the title of the individual who reviews and makes the decision regarding the physical qualifications of prospective drivers.

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11. Do you have any other minimum requirements driver applicants must meet before they may be hired?

Yes  
 No

If yes, please list or describe these requirements.

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### SELECTION PROCESS SUCCESS

1. Do you utilize any written objectives or quantitative methods to measure the success of your driver screening and selection process.

Yes  
 No

If yes, please list the written objective and/or quantitative measures used to judge success of the selection process.

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2. If you answered no to question #1, please describe how you judge the success or failure of your driver selection process.

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PERSONNEL PRODUCTIVITY  
PERFORMANCE GOALS AND PERSONNEL MANAGEMENT

Linda A. Wilson  
Executive Director

JAUNT, Incorporated

Prepared for Presentation at the  
Sixth National Conference and Workshops on  
Rural Public Transportation  
Gorham, Maine  
August 17, 1983



## PERSONNEL PRODUCTIVITY

### PERFORMANCE GOALS AND PERSONNEL MANAGEMENT

Linda A. Wilson, Executive Director  
JAUNT, Inc.

According to Theodore Caplow, author of Managing an Organization, "The evaluation of an individual's performance in an organization begins with initial training and continues to retirement." My own personnel philosophy tends to agree with this statement. From past experience, it has become my practice to follow these principles for personnel management:

1. Hire selectively.
2. Orient and train thoroughly, and ensure that training is an ongoing process.
3. Provide staff with adequate employee benefits, a salary system that ensures upward mobility, a pleasant working environment, and rewards for productive performance.
4. Carry out a goal-oriented evaluation system and ensure that evaluation is a continuous process.
5. Set improvement goals for truly unsatisfactory performers and eliminate these persons from the staff if goals cannot be met.

Management by objectives is a desirable philosophy, but difficult to implement when the majority of staff are in non-salaried or support categories. These persons really cannot set objectives themselves in terms of specific goals to meet the organization's plan of work. Their jobs are usually structured, clearly defined in job descriptions, and change little in task from day to day. In order to develop a goal oriented evaluation system, therefore, it was cost effective to develop performance goals based on job description tasks.



In developing evaluations tools, I went through the evolutionary process most managers probably experience. We initially used "canned" or prepared evaluation forms. Needless to say, these did not last long. From that stage we proceeded to a numerical system (the employee could hope to achieve a "perfect 10"!)

This system, also, was not useful. After pondering the issue, I realized that the problem I faced -- certainly not unique -- was that there was nothing in the evaluation process to clearly describe to the employee what was expected of his/her performance. Further, there were no specific accomplishments on which the evaluator could base decision. The evaluation was entirely judgemental on the part of the evaluator.

After much trial and error, we now use a system that is as specific as it could possibly be. The performance measures clearly state what specific behavior is being measured. The employee, who is given a copy of this evaluation at the time of employment, is told, in effect, "perform according to expected behavior and you can't go wrong". The employee realizes that, to achieve a reward (a merit pay increase), he/she must exceed expected behavior. An employee who consistently performs below expectations and fails to improve will soon be replaced. We are particularly pleased with our driver evaluation process. Behavior categories are weighted according to their significance which encourages top performance in those areas most essential to the safety and well-being of the passengers and our organization. (Weighted most heavily are: driving behavior, record keeping and attitude. Rated as second in significance are: care of vehicle, passenger relations and punctuality. Least significant in the hierarchy are: use of radio and personal appearance.)

As a result of this system we now have a consistently high-performing driving staff, excellent morale (the result of job security and "knowing where one stands"), a low accident rate, and a significantly low staff turnover. Robert G. Johnson, the author of the Appraisal Interview Guide, states that "Employers must recognize that employees have more than a right to know how they are doing. They have a very strong need to know, and meeting, or failing to meet, that need will probably have a direct effect on their performance." It has been my experience that this conclusion is entirely correct. I would recommend that any manager use performance goals to ensure top productivity and high company morale.

Jefferson Area United Transportation, Inc  
Driver Performance Evaluation  
Measurement Schedule

TASK 1: CARE OF VEHICLE

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Assures that van is kept clean inside and out.
- Inspects van daily as required and turns in inspection form promptly.
- Daily assures that first-aid kit and fire extinguisher are on the van and in good condition.
- Immediately reports any mechanical or body problems to maintenance supervisor.

UNSATISFACTORY:

- Allows van to remain dirty (i.e. bottles & trash in floor, overflowing ash trays).
- Fails to inspect van regularly or falsifies inspection sheets.
- Allows problems to go unattended, or allows oil and water levels to drop dangerously low.
- Fails to report injuries to vehicle body such as bumps or scratches.

TASK 2: DRIVING BEHAVIOR:

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Consistently practices defensive driving techniques and has taken defensive driving training course.
- Maintains a driving record free of violations, convictions and of accidents caused by the driver.
- Obeys traffic laws and exercises caution.
- Drives at posted speed limit or slower if condition indicates.
- Immediately reports any accident to the dispatcher and police department and follows all proper procedures.
- Devotes entire attention to operating the van.

UNSATISFACTORY/NEEDS IMPROVEMENT

- Does not exercise good judgement or caution.
- Drives recklessly; takes corners too sharply; exceeds the speed limit.
- Does not check to determine whether passengers are clear of van before taking off.
- Has not taken defensive driving course.
- Eats or drinks while van is in motion.
- Converses excessively with passengers and does not concentrate on driving.
- Has accidents causing damage or injury to life or property through carelessness or poor judgement.

TASK 3: RECORD KEEPING

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Keeps daily trip sheets accurately, neatly and legibly with all categories filled in as required.
- Double checks work for errors and turns in daily and on time.
- Reports to dispatcher any scheduled passengers who fail to ride.
- Keeps accurate account of cash and any passes or tickets; makes changes correctly; turns in money bags promptly.

UNSATISFACTORY/NEEDS IMPROVEMENT:

- Trip sheets are difficult to read and scratched - over; require correction or adjustment by dispatcher.
- Information on trip sheets is estimated rather than factual.
- Makes incorrect change or turns in bags with incorrect amounts of money or tickets.

TASK 4: PASSENGER RELATIONS/ASSISTANCE

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Has taken training in First Aid, C.P.R. and passenger assistance.
- Is courteous to all passengers, speaks politely and kindly.
- Assists all elderly or handicapped persons on and off vehicle and to the door or destination.
- Does not argue or disagree with passengers but reports any problems to the dispatcher. (Handles problems Tactfully.)
- Assists passengers with packages, bags, etc.

UNSATISFACTORY/NEEDS IMPROVEMENT:

- Does not take courses in First Aid, CPR and passenger assistance.
- Fails to assist passengers or carry parcels.
- Acts sullen, unfriendly or indifferent to passengers.
- Behaves in rude or rough manner, especially with children.
- Argues or disagrees with passengers.
- Refuses passengers permission to board (unless authorized to do so).
- Gives passengers incorrect information about schedules, fares or JAUNT policies.
- Forgets passengers or fails to pick up passengers.

TASK 5: ATTENDANCE AND PUNCTUALITY:

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Reports to work on time.
- Notifies Supervisor as far in advance as possible of absence from work.
- Keeps van on schedule unless mechanical problems, adverse weather, traffic conditions, or long waits for passengers interfere.
- Leaves van for essential purposes only.
- Keeps watch synchronized with clock in dispatching office.
- Notifies dispatcher by radio of any delays in schedules.

UNSATISFACTORY/NEEDS IMPROVEMENT:

- Does not show up for work, is consistently late, or fails to call in when sick or detained.
- Keeps behind schedule, is always late getting passengers to destination.
- Leaves van for non-essential personal business while passengers wait.

TASK 6: USE OF RADIO:

OUTSTANDING: Performs as follows consistently (all of the time).

SATISFACTORY: Performs as follows most of the time

- Answers radio when signaled.
- Keeps base informed of whereabouts.
- Monitors radio before use.
- Keeps conversations brief and job related.
- Uses proper language and is careful not to offend passengers.

UNSATISFACTORY/NEEDS IMPROVEMENT:

- Uses profanity or discusses personal business over radio.
- Fails to notify base of whereabouts.
- Leaves radio turned off or does not reply when signaled.
- Argues with dispatcher or other drivers over radio.
- Makes personal comments about passengers over radio.

TASK 7: ATTITUDE AND INITIATIVE:

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Displays positive attitude toward the job and its responsibilities, even under adverse conditions.
- Is cooperative and pleasant to other drivers and to dispatcher.
- Volunteers to assist when scheduling problems occur and willingly accepts additional job assignments during regular working hours - covers for other drivers.
- Accepts schedule changes without complaining.
- Assists with other jobs around the office on idle time.

UNSATISFACTORY:

- Has a consistently negative attitude.
- Speaks unfavorably about JAUNT or other staff outside work.
- Fails to maintain positive working relationship with other drivers or dispatchers.
- Grumbles and complains about job assignments or refuses to accept job assignments he or she doesn't like.

TASK 8: APPEARANCE AND BEHAVIOR:

OUTSTANDING: Performs as follows consistently (all of the time)

SATISFACTORY: Performs as follows most of the time

- Clothing or uniform is neat, clean, in good repair.
- Behavior both on the job and during breaks is courteous and professional.
- Presents an overall professional demeanor in appearance and behavior.
- Uses break time to relax and visit quietly with other staff. Does not interfere with work going on in the office.

UNSATISFACTORY:

- Dresses in a sloppy, unkept manner - clothes are unclean, torn or worn inappropriately. Wears shoes or accessories inappropriate to the job.
- Hangs around dispatcher during break, interfering with office activities.
- Uses vulgar language or is loud and boisterous.
- Is a catalyst to disagreements of others or is a general trouble maker.

Jefferson Area United Transportation, Inc  
Driver Performance Evaluation  
Score Sheet

Name \_\_\_\_\_ Current Range/Step \_\_\_\_\_

Period to be evaluated: From \_\_\_\_\_ 19 \_\_\_\_\_ to \_\_\_\_\_ 19 \_\_\_\_\_

EVALUATION

Directions: Please circle the number that most nearly indicates how this employee performs the task you are evaluating. Multiply that circled number by its weight no and put score in right-hand column.

TASK NO	UNSATISFACTORY (NEEDS IMPROVEMENT)		SATISFACTORY		OUTSTANDING		WEIGHT NUMBER	WEIGHTED SCORE
1	1	2	3	4	5	6	2	
2	1	2	3	4	5	6	3	
3	1	2	3	4	5	6	3	
4	1	2	3	4	5	6	2	
5	1	2	3	4	5	6	2	
6	1	2	3	4	5	6	1	
7	1	2	3	4	5	6	3	
8	1	2	3	4	5	6	1	

TOTAL SCORE \_\_\_\_\_

Scoring: (Check one)

OUTSTANDING: 75-102

SATISFACTORY: 41-74

UNSATISFACTORY: 40 or below



1. Please provide specific reasons or instances to support evaluations of unsatisfactory or outstanding: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. This employee needs to improve performance in the following areas:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Recommendation/Comment: (Check any that apply)

- This employee should be terminated
- This employee should be counseled for improved performance
- This employee's performance is satisfactory - no action
- This employee's performance is above average - merit increase recommended
- This employee is recommended for promotion if a position becomes available

SUPERVISOR'S SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_

This evaluation has been discussed with me.

EMPLOYEE'S SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_

LW/dm  
10-15-81 - copies:   employee                   Director  
                          supervisor                 Assistant Director  
                          personnel file

JAUNT, Inc.  
EMPLOYEE EVALUATION FOR SALARIED STAFF

Employee: \_\_\_\_\_

Job Title: \_\_\_\_\_

Period Covered by review: From \_\_\_\_\_ 19 \_\_\_\_ to \_\_\_\_\_ 19 \_\_\_\_

---

Note to reviewer: for each characteristic below, check the description which is most typical of the employee's regular performance.

---

I. GENERAL PERFORMANCE:

- A. Reliability - (Expected behavior: Punctual about work attendance, Dependable, Follows through on assignments, Meets deadlines, Absent from work infrequently, Plans and organizes time well, Efficient - completes work in a timely manner, Maintains all required records and reports)

This employee's performance: Exceeds Expectations \_\_\_\_ Meets Expectations \_\_\_\_  
Needs Improvement \_\_\_\_

- B. Attitude - (Expected behavior: Has a positive attitude toward the job and related functions, Functions as a team member, Promotes harmony, Cooperates with supervisors)

This employee's performance: Exceeds Expectations \_\_\_\_ Meets Expectations \_\_\_\_  
Needs Improvement \_\_\_\_

- C. Initiative (Expected behavior: Self starter - takes initiative, Gets results without constant urging, Works well under pressure, Seeks additional responsibility, adaptable to new ideas, flexible - accepts changes, Works over-time or beyond usual requirements when necessary to get the job done)

This employee's performance: Exceeds Expectations \_\_\_\_ Meets Expectations \_\_\_\_  
Needs Improvement \_\_\_\_

- D. Job skills - (Expected behavior: Understands and masters skills required for the job, Continues the learning process regularly, Attends training courses & conferences to expand field of knowledge, Accepts criticism and makes appropriate changes)

This employee's performance: Exceeds Expectations \_\_\_\_ Meets Expectations \_\_\_\_  
Needs Improvement \_\_\_\_

- E. Quality of Work - (Expected behavior: Thorough - work is complete and well done, Accurate - work seldom needs correction by others, Professional-work is a credit to the organization)

This employee's performance: Exceeds Expectations \_\_\_\_ Meets Expectations \_\_\_\_  
Needs Improvement \_\_\_\_



F. Judgement - (Expected behavior: Considers all available facts before taking action, Exhibits common sense, Actions are logical and consistent, Remains calm and behaves sensibly in stressful situations, Can be trusted with confidential information)

This employee's performance: Exceeds Expectations \_\_\_ Meets Expectations \_\_\_  
Needs Improvement \_\_\_

G. Personal fitness - (Expected behavior: Dresses properly for the job, Is neat and orderly in appearance, Maintains good personal hygiene)

This employee's performance: Exceeds Expectations \_\_\_ Meets Expectations \_\_\_  
Needs Improvement \_\_\_

Comments on general performance \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

II. SUPERVISORY ABILITY - (Only for persons in supervisory positions)

(Expected behavior: Exhibits leadership skills and accepts leadership responsibilities, Supervises for maximum results, Handles conflicts with minimum of friction, Develops good Team feeling among subordinates, Inspires respect and loyalty from subordinates, Maintains control and discipline, Remains fair and impartial toward all subordinates, Develops subordinates to their individual potential)

The employees's performance: Exceeds Expectations \_\_\_ Meets Expectations \_\_\_  
Needs Improvement \_\_\_

Comments on supervisory ability \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

III. SPECIFIC JOB OBJECTIVES

Below, list job objectives and on-going or specific tasks as defined in employee's job description. For each task check the status as defined on the right.

OBJECTIVES/TASK:	Exceeds Expectations	Meets Expectations	Needs Improvement
1.			
2.			
3.			
4.			
5.			
6.			

	Exceeds Expectations	Meets Expectations	Needs Improvement
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Comments on accomplishment of objectives \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

IV. OVERALL JOB PERFORMANCE: Exceeds Expectations \_\_\_\_ Meets Expectations \_\_\_\_  
Needs Improvement \_\_\_\_

Rating: Count the number of descriptions checked. Indicate as follows:

Total Checks: \_\_\_\_\_

Exceeds Expectation \_\_\_\_\_ CHECKS \_\_\_\_\_ % of TOTAL

Meets Expectation \_\_\_\_\_ CHECKS \_\_\_\_\_ % of TOTAL

Needs Improvement \_\_\_\_\_ CHECKS \_\_\_\_\_ % of TOTAL

(Note: for a merit increase, the employee should receive at least a 70% Exceeds Expectations score).

Recommendations:

- This employee should be terminated
- This employee should be counseled for improved performance
- This employee's performance is satisfactory-no action recommended
- This employee's performance is outstanding-merit increase recommended
- This employee is recommended for promotion if a position is available



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