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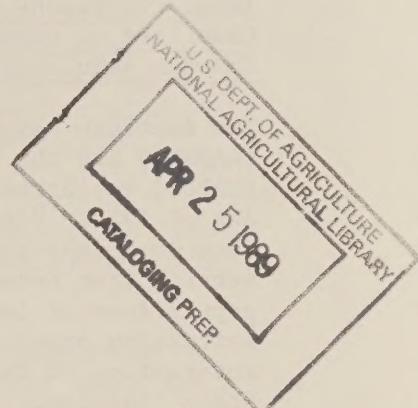
ANNOTATED BIBLIOGRAPHY

on

RURAL INTERCITY PASSENGER TRANSPORTATION

by

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BACKGROUND

The reports summarized in the Annotated Bibliography were reviewed in preparation for a series of three regional symposia held in December 1987 through May 1988 focusing on rural intercity passenger transportation. To compile the Bibliography, every State transportation or highway department throughout the country was contacted for recent State-level studies on rural passenger transportation. Those reports provided by the States are included in the Bibliography.

The symposia, jointly sponsored by the United Bus Owners of America, the U.S. Department of Transportation's Urban Mass Transportation Administration and the U.S. Department of Agriculture's Office of Transportation, were held to identify the issues and gather comments from rural transportation providers and users throughout the country. The North Central Regional Symposium was held in Des Moines, Iowa, on December 7-9, 1987; the Eastern in Annapolis, Maryland, on April 20-22, 1988; and the Western in San Francisco, California, on May 18-20, 1988.

The documents summarized are categorized as being national or State in focus, as was done for each regional symposium. The annotated bibliographies provided symposia participants with background information on the studies conducted and reports written during the 1980's, with emphasis given to those completed since passage of the Bus Regulatory Reform Act of 1982. The bibliographies prepared for each symposium have been combined for use at the National Conference for Reconnecting Rural America held in Omaha, Nebraska, on August 22-24, 1988.

NATIONAL LEVEL

American Association of State Highway and Transportation Officials. Testimony to the Subcommittee on Surface Transportation, Senate Committee on Commerce, Science and Transportation Relating to Oversight of the Bus Regulatory Reform Act of 1982. November 1983.

Idem. Testimony to the Subcommittee on Surface Transportation, Senate Committee on Commerce, Science and Transportation Relating to Oversight of the Bus Regulatory Reform Act of 1982. November 1984.

The American Association of State Highway and Transportation Officials (AASHTO) and the National Association of Regulatory Utility Commissioners (NARUC) collected information on the impact of the Bus Deregulation Reform Act of 1982. Data for the 1983 testimony was gathered from 40 States. These data show that the majority of the 480 communities losing intercity bus service from November 1982 to 1983 were small, rural communities with populations of less than 5,000. Some States responded to deregulation by initiating organizational changes, developing legislation, providing information to the public, monitoring changes in bus service and providing State assistance to maintain bus service. The 1984 update identified 1,379 communities throughout the United States losing all intercity bus service since November 1982. The update found 464 communities gaining new service or receiving replacement service.

Fravel, Frederic D., Jon E. Burkhardt and R. Eric Menzer. Planning Techniques for Intercity Transportation Services. Prepared for U.S. Department of Transportation, Office of the Secretary (Technology and Planning Assistance), July 1987.

Changes in rural economic activities and development patterns in combination with federal regulatory reform of intercity transportation modes have contributed to shifts in rural transportation requirements. To ensure that transportation is available to those who need it, State and local officials are turning to partnership activities with the private sector. The authors state that planning is critical to maximize the public-private transportation partnership. The manual outlines planning procedures for developing public-private involvement in rural intercity transportation. An overview of the planning process is described, with techniques presented to estimate costs and demands for intercity services. Cost-benefit techniques are applied to intercity services and methods to evaluate modal alternatives are outlined.

Fravel, Frederic D., R. Eric Menzer, Herbert Weinblatt and Jon E. Burkhardt. Innovative Funding for Intercity Modes: A Casebook of State, Local and Private Approaches. Prepared for U.S. Department of Transportation, Office of the Secretary (Technology and Planning Assistance), July 1987.

Each component of the intercity passenger transportation industry has experienced structural changes within the last 15 years. Freight and passenger railroad, intercity bus and regional airline service are adjusting to a changed economic and regulatory environment. Concerned about loss of

service, State and local governments are initiating private-public partnerships to maintain intercity transportation services. The casebook outlines actions that can be taken by public officials interested in maintaining or improving intercity transportation. Focusing on the process that leads to a successful public-private partnership, the casebook describes how public officials can develop an understanding and awareness of the private intercity modes in their locale, and how they can stimulate community support for continued service. Public officials can participate in developing joint services and in providing technical assistance and financial assistance. Non-Federal funding sources for intercity transportation are described, including user funding, cost reduction and State and local funding.

Greene, Michael J. Coordinating Rural Transit: Stretching State Resources for Better Service. Lexington, Kentucky: The Council of State Governments, 1987.

As Federal funding for rural transportation shrinks, States are turning to coordination of available resources to assure that rural transit needs are met. Forty-one States have some type of rural transportation coordination mechanism, including inter-agency task forces, interagency committees and mandatory programs. The report summarizes State coordination programs, and identifies major Federal, State and local impediments to coordination. Coordination programs in Iowa and Florida are described in detail. The Council of State Government's Rural Public Transportation Symposium recommendations on goals and strategies for coordination are listed. The report concludes with an extensive, current bibliography on rural public transportation.

"ICC Assesses Bus Regular Route Entry and Exit," ICC News, September 8, 1986.

An assessment of entry and exit in the regular route segment of the intercity bus industry was conducted in response to a request from Senator Larry Pressler of South Dakota in 1986. The study results were based on data developed from Russell's Motor Coach Guide. Since enactment of the Bus Regulatory Reform Act of 1982, 896 communities have gained regular route service while 3,763 communities have totally lost bus service. The majority of the communities losing services, namely 3,006, had populations less than 10,000. An additional 751 locations still retaining service have experienced a reduction of carriers.

Interstate Commerce Commission. The Intercity Bus Industry, by Office of Transportation Analysis. January 1984.

This staff study reports on the status of the bus industry and the initial impact of regulatory reform in the year after enactment of the Bus Regulatory Reform Act of 1982 (BRRA). Included in the study is a brief history and statistical overview of the intercity bus industry. Comparisons are made between bus passengers and other intercity travelers. The bus firms' conduct prior to the BRRA on decisions with respect to exit, entry and expansion, and

pricing policy are discussed along with how those decisions have all been heavily influenced by the regulatory process. Early evidence is presented concerning the impact of the BRRA on entry, exit, fares, and service levels. This study, issued as information, has not been adopted by the Interstate Commerce Commission.

Interstate Commerce Commission and U.S. Department of Transportation. The Intercity Bus Terminal Study. December, 1984.

This study was mandated by the "Bus Regulatory Reform Act of 1982," P.L. 97-261, Section 26. An examination was conducted of the ownership, location, and adequacy of bus facilities and their capacity to provide passenger service in accordance with the national transportation policy. Intercity bus companies and managers of intercity bus facilities were surveyed to develop statistical data for the study, and to learn about current policies and situations affecting the use of intercity bus terminals and stations. The analysis centers on the question of whether or not current ownership patterns of terminals constitute an economic barrier that would prevent entry by new competitors unable to obtain access to terminals controlled by existing carriers. In addition to the main body of the report, appendices are attached which include: copies of the survey questionnaires; description of the survey plans; case studies involving carrier access to bus facilities; and profiles of publicly-owned terminals.

Management Analysis Center, Inc. Deregulation of the Intercity Bus Industry. Prepared for Greyhound, Lines, Inc., 1981.

Sponsored by Greyhound Lines, Inc. to study the issues surrounding deregulation, this report discusses the nature of the passenger transportation industry, the concept of deregulation and options for deregulation of the intercity bus industry. The study examines the economies of all passenger transportation modes, indicating that the financial performance of carriers had deteriorated from 1970 to 1979 while share of ridership declined. Deregulation of airlines and subsidies to passenger rail lines had reduced the advantages of the lower fares previously offered only by intercity bus. The study characterizes the industry as one with low fixed costs and no large economies of scale, a situation which presents no significant economic barriers to entry. Small carriers are effective, profitable competitors with large carriers. Public interest objectives in assuring rural passenger access to transportation are discussed, with the report emphasizing the public policy need to consider transportation as an intermodal system rather than by separate mode. The report concludes by recommending a comprehensive approach to deregulation which includes free entry and exit, Federal preemption of state authority over the bus industry and a reasonable basis for measuring the effects of deregulation and determining public interest. Written in 1981, the report described the operating environment of the intercity bus industry in light of deregulation of air and rail and was used in the subsequent debate over bus deregulation. Many of the report recommendations were incorporated into the Bus Regulatory Reform Act of 1982.

Motor Carrier Ratemaking Study Commission. A Report to the President and the Congress of the United States: Part One - Collective Ratemaking in the Bus Industry: The Need for Antitrust Immunity; Part Two - Implementation of the Bus Regulatory Reform Act of 1982: The Impact on Older Americans and the Effect on Intrastate Bus Services. Washington, D.C.: May 15, 1984.

Completed in 1984 to assess the impact of deregulation one year later, the report is divided into two major sections. The first section examines the intercity bus industry, describing in some detail how the bus industry collectively determines fares and the impact of collective ratemaking on the fare structure and the fare level. The second section evaluates the impact of the Bus Regulatory Reform Act (BRRA) on the general population and its specific effect on senior citizens. Intercity bus riders tend to be lower income, female and elderly, with bus trips primarily taken for social and recreational purposes. After reviewing the programs available to fund alternative transportation for communities losing bus service, the report concludes that implementation of the BRRA benefits the vast majority of bus riders. Those groups losing access to intercity passenger transportation have transportation available to them through specialized Federal programs. Conceding that a one year period is too early to determine overall impact, the Commission recommended the U.S. Department of Transportation institute an on-going review of the impact of the Reform Act on the elderly and those living in small and rural communities.

Oster, Clinton V., Jr. and C. Kurt Zorn. The Impacts of Regulatory Reform on Intercity Bus Service. Prepared for U.S. Department of Transportation, Office of the Secretary (University Research), September 1984.

A major concern in easing regulatory restrictions has been the fear that residents in smaller communities might no longer receive adequate scheduled service if bus companies focused their efforts on more dense markets between larger cities or on charter service. The concern was particularly acute regarding elderly and low income residents in these communities. This study examines the changes in scheduled intercity bus service both before and after passage of the Bus Regulatory Reform Act of 1982 for twelve States: AZ, CA, FL, IN, MA, MI, MN, ND, OK, OR, SC, and SD. Service for each community in each of these States was examined for the years 1975, 1979, 1982, 1983, and 1984. The research measured and analyzed changes in service to the more than 3,900 communities over the 1975 to 1984 period. These service changes were characterized in terms of the types of service, carriers providing the service, the frequency of service, and the demographic characteristics of the communities being served.

STATE LEVEL

North Central Region

Hansen, Eric R., Edward A. Beimborn, et.al. The Benefits of Intercity Bus Service. Prepared for Wisconsin Department of Transportation, October 1986.

The study objective was to identify the benefits of intercity bus service. Using a survey of former bus ticket agents who served in communities losing bus service, the report determines the availability of alternative intercity passenger transportation. A Wisconsin Department of Transportation survey of intercity bus passengers provides a profile of the typical intercity passenger. Separate analysis of the rural sample indicates that the share of rural passengers dependent on the intercity bus may be 5 to 10 percent higher than in urban areas. Bus freight service is compared to alternate modes of package delivery. The report develops a statistical model to estimate user benefits for use in selecting routes for public support. Appendices provide several useful supplements, including a review of literature on intercity bus service and an annotated bibliography.

Michigan Department of Transportation. Michigan Intercity Bus Study: A Comparison of 1985 and 1977 User and Ticket Surveys. December 1985.

The purpose of the study was to increase the Michigan Department of Transportation's ability to assist in the preservation and/or provision of needed intercity bus service to Michigan residents and visitors. The study is a comparison of the 1985 and 1977 on-board user and ticket surveys. This includes the questionnaire and procedures used, the survey data obtained, and the major findings identified. Service levels, tripmaking patterns, and fare structures for the two years are described for intercity modes (bus, rail, air, and automobile) to better understand the results of the 1985 and 1977 comparative analysis. The impact of the 1982 deregulation legislation is identified to the extent possible.

Wisconsin Department of Transportation. The 1986 Wisconsin Intercity Bus Passenger: A Profile of Trips, Socioeconomic Characteristics and Transportation Alternatives, by Division of Planning and Budget. February 1987.

The Wisconsin Department of Transportation undertook a survey of intercity bus passengers to evaluate whether any State action was needed. A sample of bus stops was drawn to represent the small, medium and large community passenger and type of trip taken according to community size. The study looked at a variety of factors, including the demographic characteristics of riders, car ownership, possession of a drivers license and reason for using bus transportation. The typical rider was female, a student, aged 20-24, coming from a 2-car household and travelling about 80 miles. The report compares Wisconsin data to intercity bus studies in other States. The study provides a model for use in designing intercity passenger ridership surveys.

Eastern Region

Allen, Gary R., Eugene D. Arnold, Jr. and Lester A. Hoel. Intercity Bus Service in Virginia. Virginia Highway and Transportation Research Council, August 1981.

Completed in 1981 before the Bus Regulatory Reform Act of 1982, this study examined information on the status of the intercity bus industry to determine the likely impacts of various State policy options. National data on the industry are reviewed along with State level routes and ridership levels. The study concludes that regulatory reform at the State level in conjunction with reform at the national level was the most effective way to ensure both carrier viability and long term regular route service. State subsidies are not recommended, but the report concludes the State should provide carriers with assistance in marketing and promotion, develop park and ride lots and coordinate carrier schedules with social service agencies.

An Analysis and Action Strategy for Select Surface Passenger Transportation Services in Maine. Hallowell, Maine: Maine Tomorrow, December 1986.

The study focuses on the demand response and local area transit services which receive nearly all public funds available in Maine for public bus transportation. The report recommends the State develop a comprehensive surface passenger transportation policy, and follows up that recommendation with specific operational and financial suggestions for both the State and individual transit operators. The State strongly is urged to encourage coordination of services and to assume responsibility for technical assistance to transit operators. Providers are encouraged to utilize current management techniques, including the use of computer technology, preventive maintenance of vehicles, driver training and education and the use of marketing to increase ridership.

Carter Goble Associates, Inc. Vermont Statewide Transit Needs Study: Phase I - Transportation Disadvantaged Needs Analysis and Study Design. Prepared for Vermont Agency of Transportation, March 1987.

The State of Vermont is currently involved in conducting a statewide needs analysis and transportation plan. As one component of that analysis, this report examines transportation provided by public transit systems and human service agencies. The needs of transportation disadvantaged individuals are evaluated and recommendations developed for meeting those needs through regional or substate planning areas. The study develops recommendations for meeting transit need, and outlines the staffing and budget requirements necessary to plan a statewide transit system. The report contains detailed breakdowns of disadvantaged population by town and ranks towns by overall needs status, a methodology that could be utilized by transportation planners. It also includes questionnaires to be administered to public transit providers as well as private carriers.

Ernst & Whinney, SG Associates, Inc. A Public Transportation Improvement Plan. Prepared for West Virginia Department of Finance & Administration, Public Transportation Division, 1986.

Idem. A Public Transportation Improvement Plan: Executive Summary. Prepared for West Virginia Department of Finance & Administration, Public Transportation Division, 1986.

The Plan contains a comprehensive review of transit service provided in West Virginia and outlines recommendations to increase the efficiency and effectiveness of public transportation. The review includes a county by county inventory of public transportation services provided by transit authorities and social service agencies. Each county is evaluated in terms of how well those services meet transit needs. Transit operator performance is evaluated to identify how service can be improved. The study indicates that approximately two-thirds of the transit operators need to improve their performance in recordkeeping/performance monitoring and levels of service and half of the operators need to improve coordination and revenue collection. In view of decreases in Federal funding, the report recommends the State provide increased funding to maintain existing transit. The Plan concludes by outlining the areas in which the Public Transportation Division should provide technical assistance to operators. High priority areas include performance monitoring, communication (information/clearinghouse), coordination, insurance purchase and marketing.

Lebeaux, Pamela M. "Wheelchair Access to Intercity Bus Service: The Massachusetts Experience." Boston, Massachusetts: Executive Office of Transportation and Construction, January 1987.

The paper discusses the Massachusetts capital assistance program for the State's intercity bus carriers, with particular emphasis on the State commitment to introduce wheelchair lift technology into private transit operations. Concern about the ability of private carriers to remain financially viable, in combination with the increasingly important role of private carriers in the State's congested urban corridors led to the establishment of a capital assistance program. Under the program, carriers lease vehicles from the State for seven years at a nominal rate. Six of the coaches purchased by the State from Motor Coach Industries for lease to the intercity bus industry have prototype wheelchair lifts. Preliminary data on use of the lift-equipped buses indicate that with operator training and marketing, carriers can accommodate handicapped user needs.

Miller, James H. and Robert Goble. Pennsylvania Intercity Bus Study. Prepared for Pennsylvania Department of Transportation, Bureau of Public Transit and Goods Movement Systems; and The Pennsylvania State University, The Pennsylvania Transportation Institute, April 1984.

Initiated to develop a sound data base for state policy formulation, the intercity bus study includes an overview of the intercity bus industry nationwide before examining the Pennsylvania intercity bus system. The number of intercity carriers had increased by more than 50 percent over the past decade, with most of the new entrants being charter operators. The

number of regular route passengers transported, however, had only increased from 351 million to 370 million between 1975 and 1982, still below the 1970 ridership level of 401 million passengers. Although both revenue and expenses increased more than 40 percent between 1978 and 1982, expenses rose more rapidly than revenue so the 1982 operating revenue of most carriers was worse in 1982 than in 1978. Early response to the Bus Regulatory Reform Act of 1982 indicated the carriers felt it would have little impact. Most carriers felt the industry did not require State assistance, but some carriers favored operating assistance and capital assistance grants if the State provided aid. Terminal development was another government assistance strategy identified by local governments.

Miller, James H. and Robert Goble. Pennsylvania's Intercity Bus Industry: A Vital Link in Pennsylvania's Transportation Network. Prepared for Pennsylvania Department of Transportation, Bureau of Public Transit and Goods Movement Systems; and The Pennsylvania State University, The Pennsylvania Transportation Institute, April 1985.

This report is the Executive Summary of the Pennsylvania Intercity Bus Study completed in April 1984.

New York State Department of Transportation. 1984 Annual Report on Public Transportation Operating Assistance Programs in New York State, by Transit Division. 1985.

Idem. 1986 Annual Report on Public Transportation Operating Assistance Programs in New York State, by Transit Division. 1987.

Idem. 1987 Annual Report on Public Transportation Operating Assistance Programs in New York State, by Transit Division. 1988.

New York State provides significant State funding for public transportation systems in both urban and rural areas. The Annual Reports contain detailed information on how, where and why that funding is distributed to public transportation systems throughout the State. The 1984 Annual Report contains a description of the dedicated tax sources used to fund public transportation. It also emphasizes the need for stable, long-term financing for transit systems. The 1986 Annual Report describes the increasing gap between operating expenses and revenue for major transit operations in New York, pointing out that fare increases are not tied to operating expenses. Transit operating costs are growing faster than the CPI. Non-urbanized service is described, with a map outlining, by county, the service available in rural areas. The 1987 Annual Report addresses long term funding needs of transit systems outside New York City, emphasizing these systems face considerable uncertainty in both short-term and longer-term financing of operating costs. The Report evaluates service available in small urbanized areas and public systems in small cities and rural areas and develops recommendations for programs subsidizing private operators and the intercity bus service.

New York State Legislative Commission on Rural Resources. "Integrating School Transportation Resources Into Coordinated Rural Public Transportation Programs: A Proposal to Increase Access to Community Services for Transportation-Disadvantaged Persons." April 1988.

The proposed bill, Legislation (S.3575-D, A.5564-D), introduced at the request of the Commission on Rural Resources authorizes school districts to participate more fully in the rural public transportation program enacted in 1986. This report discusses the proposed bill, addresses issues related to the bill, and highlights the benefits that stand to be gained by passage of the Commission on Rural Resource bill. The "school bus bill", is designed to take advantage of the extensive, and often underutilized transportation resources belonging to school districts in order to fill the broad gaps that exist in rural transportation.

Pennsylvania Department of Transportation. Pennsylvania Intercity Bus Operating Assistance Program Statistical Report, Fiscal Years 1984-85 and 1985-86, by Bureau of Public Transit and Goods Movement Systems. April 1987.

The Pennsylvania Department of Transportation has been providing financial assistance for intercity bus service since 1977 through the "Pennsylvania Rural and Intercity Common Carrier Surface Transportation Assistance Act." Most of the financial support has been in the form of operating assistance, but grants may be provided for capital assistance, marketing and technical studies as well as demonstration projects. While the program is funded entirely with State funds, a local match is required so the State share does not exceed 75 percent of the total project deficit. The report includes participating carriers, communities served by subsidized routes, operating statistics and financial statistics.

Purdy, Jeffrey E. and Lester A. Hoel. An Evaluation of the Effect of Level of Service and Cost on Demand for Intercity Bus Travel. Virginia Highway and Transportation Research Council, September 1980.

Changes in frequency of service and cost were examined to evaluate their effect on intercity bus ridership. The study concluded that the intercity bus market is insensitive to the frequency of bus service. Bus market share is sensitive to rising travel costs, particularly the cost of gasoline: as gasoline prices increase, intercity bus market share will rise. The study also found that data on intercity bus travel characteristics were inadequate, both at the national level and at the state level. The lack of a comparative data base prevented specific recommendations on policy, but led to preliminary implications for bus fare levels and the need for continuation of bus service to small towns. Research recommendations included further data collection on intercity passengers through a variety of survey techniques.

Ross, Daniel B. Private Entrepreneurship Transportation Opportunities In Rural Areas Of State Of South Carolina Impacted By Public Intercity Bus Deregulation. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Transit Division, 1987.

Idem. Private Entrepreneurship Transportation Opportunities In Rural Areas Of State Of South Carolina Impacted By Public Intercity Bus Deregulation: Executive Summary. Prepared for U.S. Department of Transportation, Urban Mass Transportation Administration, Transit Division, 1987.

South Carolina, like other States in the nation, is being impacted by the deregulation of intercity bus service as bus companies adjust schedules, routes, and services. These changes have implications for the carriers themselves, for passengers and for private entrepreneurs wishing to enter the transportation providers market. This report documents the existing availability and need of intercity bus transportation in selected rural communities in South Carolina, the impact of deregulation on the communities, and opportunities for private entrepreneurs to participate, possibly in conjunction with public agencies, in the provision of needed transportation services in the communities. The recommendations focus on initiatives designed to foster greater coordination and privatization in providing transportation services that are derived from the needs of particular communities.

Weiss, David L. and Robert G. Knighton. "Defining a Basic Intercity Bus Network for New York State." New York State Department of Transportation, January 1987.

New York has been subsidizing intercity bus operations since 1981. As funding sources have become increasingly scarce, development of a method to maximize subsidy distribution has become important. The paper, as presented at the Annual Meeting of the Transportation Research Board in 1987, describes the selection process for formulating a statewide intercity bus basic network. Population is the first criterion, along with institutions of higher learning, military installations and the absence of other forms of transportation. Further conditions include the maintenance of direct links between each of the 11 urbanized areas of the State, connection of 60 census-defined places (CDP's) outside urbanized areas (populations greater than 5,000) with the nearest urbanized area and service recommended for corridors of less than 50 miles with three or more CDP's having populations between 2500 and 10,000. Further conditions to avoid culs-de-sac and maintain connections between major parts of the state were included to develop the basic network. The method described is quick, utilizes available information and provides a basis for further investigation or refinement.

Western Region

Advanced Risk Management Techniques. Study of Insurance Alternatives for California Social Service Transportation Providers. Prepared for California Department of Transportation, Division of Mass Transportation, July 1987.

Vehicle insurance for social service transportation providers increased by 239 percent from 1983 to 1987 in California. This study looked at the feasibility of group insurance alternatives to meet insurance needs. Several alternatives to individual purchase of insurance are examined, with the formation of a group self-insurance pool being the best option for social service transportation providers. A self-insurance pool offers immediate and long-term premium savings, more stable costs from year to year, broader coverage, availability of coverage regardless of insurance marketplace conditions and more control over program operation, costs and services. Participating agencies would form a non-profit corporation for the purpose of

providing automobile coverage for its members, with the corporation governed by a Board of Directors representing member agencies. The report describes how the pool would function, how premiums would be calculated and the minimum size needed for operation of a self-insurance pool. The formation and establishment of such a pool is governed by State statutes, several of which require amendment to allow its establishment and operation.

Al-Kazily, Joan. Investigation of the Need for Passenger Restraints on Intercity Buses. Prepared for California Department of Transportation, Division of Mass Transportation, December 1986.

Growing interest in seat belts for school buses led to this study of the need for passenger restraints in intercity commercial buses. The report reviews all available literature on seat belts for buses. Bus accident statistics and reports are analyzed to correlate accident type and seat location with injuries. Since lap belts would be the most probable type of seat belt utilized in intercity buses, special attention is given to data which suggest that lap belts, in some accident situations, can in fact cause injuries. The study concludes that the perceived need for safety belts on intercity buses is low at the present time, utilization is likely to be low and the effectiveness of lap belts on intercity buses has not been determined.

California Department of Transportation. Caltrans Handbook for UMTA Section 18 Applicants. October 1985.

Section 18 of the Urban Mass Transportation Act provides for Federal grants to be administered through the states for public transportation projects in nonurbanized areas (areas not part of a designated urbanized area of over 50,000 population). The Handbook is designed to assist local agencies in applying for Section 18 funds. It contains State procedures, including a description of the process utilized in completing an application. A large part of the Handbook consists of a series of Appendices which include the text of regulations and other administrative procedures of general interest to Section 18 applicants. While the Handbook was developed for use in California, it includes many of the Federal documents of interest for all Section 18 applicants. It includes, for example, UMTA Circular 9040.1A (Section 18 Program Guidance), OMB Circular A-128 (Audits of State and Local Governments), Special Section 13(c) Warranty and selected Federal Regulations and Notices.

California Department of Transportation. Intercity Bus Traffic Counts and Classification in California, by Division of Mass Transportation. September 1987.

The report is the annual update of intercity bus classification counts administered by the California Department of Transportation since 1982. California initiated the annual survey in 1982 to obtain data on intercity bus traffic because the Bus Regulatory Reform Act of 1982 reduced data collection requirements for the industry. The bus survey documents and analyzes the pattern and volume of intercity bus traffic on major State highways and attempts to ascertain changes in intercity bus patterns,

particularly the split of scheduled (regular) and nonscheduled (irregular service) bus traffic. Results indicate that scheduled routes are declining relative to nonscheduled (charter) trips. The annual surveys also point out that national reports aggregating bus traffic data are not especially useful for State and local planners who need data on individual corridors because averages can obscure important route variations. The report describes the methodology used to conduct the bus counts and provides extensive information on traffic patterns on the surveyed corridors.

California Department of Transportation. Report on California Intercity Bus Transportation, 1985 Update. May 1985.

Idem. Report on California Intercity Bus Transportation, 1986 Update. June 1986.

Idem. Report on California Intercity Bus Transportation, 1987 Update. June 1987.

The report updates annually survey issues of interest to members of the intercity bus industry and others in the field of transportation. Issues included in the above listed updates involve bus weights, transit management assistance for small bus operators, bus safety, bus insurance costs and Amtrak feeder buses. The updates also present intercity bus traffic data obtained from an annual in-field survey conducted by the California Department of Transportation since 1982. The data gained from these surveys allows the examination of changing service patterns within the intercity bus industry. Because the Bus Regulatory Reform Act of 1982 reduced data collection requirements on the intercity bus industry, little information is available on bus ridership, active routes and user characteristics. The California data fill part of that information gap by providing on-going statistics on selected regular route intercity bus traffic patterns.

California Department of Transportation. Transit Performance Audit Guidebook. April 1982.

As costs of publicly funded transportation rise, public concern about effective use of those funds has grown. While the financial audit as a mature and established process can ascertain the accuracy of financial statements, performance audits do not yet have accepted standards and principles. The scope of a performance audit is broader and less technical than a financial audit, focusing on management principles and results as reflected in the efficiency and effectiveness of transit operations. The Guidebook describes how a performance audit is to be conducted according to size of transit operation. Functional audit guidelines are outlined for the following areas: transportation, maintenance, service planning, budgeting and financial planning, management reporting, purchasing, marketing and public relations, personnel management and risk analysis, claims and insurance. The guidelines consist of three parts: goals and objective guidelines, suggested performance indicators and suggested documents. The Guidebook provides a useful working document for transit operators interested in reviewing the effectiveness of their services.

COMSIS Corporation. Colorado Trailways Abandonment Study. Prepared for Colorado Department of Highways, April 1987.

In 1986 Trailways announced its intention to abandon most rural passenger and express service in Colorado. Since many rural residents would have lost the only transportation available to them, the State of Colorado cooperated with COMSIS to examine the system proposed for abandonment. The study utilizes several data sources, including information provided by Trailways, interviews of station managers conducted by a consultant, a State survey of traffic on highways used by intercity bus and testimony provided by Trailways to the Kansas Corporation Commission on its abandonment proceedings in Kansas. Detailed tables which list operating ratios, revenue data by station, income and expense data for route segments and patronage by bus station are provided. The Colorado Highway Department concluded that with certain modifications in bus size, increased marketing, and improved scheduling, the routes scheduled for abandonment could be profitable. The Department also initiated a technical assistance program for providers applying to replace the lost Trailways service.

Montana Department of Commerce. State of Montana Sections 18 and 16(b)(2) State Management Plan Under the Urban Mass Transportation Act of 1964, As Amended, by Transportation Division, Passenger Bureau. 1987.

The Plan describes Sections 18 and 16(b)(2) and sets out program funding requirements. Particular emphasis is given to the development of transportation systems to meet day-to-day needs of local communities and to coordinate existing transportation services with social service transportation. Subsidy grants can be made to private carriers to maintain intercity service. If a route is considered for subsidy, the Passenger Bureau and the Public Service Commission will work with the carrier to develop a plan to increase revenues or decrease costs to bring about future economic viability for the subsidized route.

Nevada Department of Transportation. Nevada Intercity Bus Plan. 1986.

The report, part of the development and operation of a balanced and integrated public transportation systems plan for Nevada, serves as a first step in shaping State attitudes towards intercity bus service. Nevada's public transportation system is analyzed, including air, rail and intercity bus. The status of the intercity bus industry is thoroughly reviewed, with current data supplied on ridership, bus service and bus industry operating ratios. The report provides recommendations for improved intercity bus transportation, identifying safety, lack of schedule coordination and marketing, terminal condition and community participation as key elements defining adequate intercity passenger transportation in Nevada. Specific route improvements are described, along with suggested subsidy levels for less traveled, but essential rural routes.

Nevada Department of Transportation. Nevada Transit Plan: Executive Summary, 1983, by Planning Division. 1983.

The Transit Plan is intended to guide the development and operation of a balanced and integrated public transit systems plan for Nevada. As of 1983, Nevada had no unified transit plan; so the report served as an initial step in shaping future State attitudes towards public transportation. It presents transit deficiencies and alternatives, and offers recommendations for improving existing transit and avoiding future difficulties. A major recommendation concerns the creation of transit districts to manage transit activities and to establish stable financing. The role of the State transportation department includes maintaining data, providing assistance to localities applying for Federal funds, analyzing programs to eliminate duplication and providing for common management systems where possible.

Nevada Department of Transportation. UMTA Section 18 State Management Plan for Nevada, by Planning Division. 1987.

The Plan provides public information on the State's administration of the Section 18 Program and serves as the basis for State level management review by the U.S. Department of Transportation's Urban Mass Transportation Administration. State funding priorities include continuing assistance to current Section 18 providers, assistance to providers to continue or expand service, and consolidation of several services into one system. New systems will be given a low priority. Major emphasis is given to involving the private sector in implementing rural public transportation.

Oregon Department of Transportation. Statewide Transportation Plan, Volume 2: Intercity Passenger Services Study, 1984. 1984.

The report responds to legislation directing the Department of Transportation to appraise the quantity and quality of public intercity transportation and to recommend ways to improve available service. The report is comprehensive, including air, rail and intercity bus service. Recommendations include the development of procedures to establish statewide coordination of intercity and intercity passenger transportation services, encourage schedule coordination for the various modes of transportation, assist in providing maximum mobility for residents, visitors and goods, provide information and assistance to local governmental units to coordinate their transportation activities with those of the state, and identify and eliminate unreasonable barriers to intermodal cooperation. The body of the report provides detailed, comprehensive information on the Oregon intercity passenger transportation industry. The Appendices contain information on bus ridership characteristics compiled from studies conducted by other states involved in reviewing intercity passenger transportation, as well as a description of the methods used to analyze bus route demand. Since the study includes all transportation modes, the report provides a model for studying intercity passenger transportation.

Riley, Norman E. and Donald L. Dean. Crime and Security at Intercity Bus Stations. Prepared for California Department of Transportation, Division of Mass Transportation, October 1984.

This study examines crime in California's intercity bus stations by reviewing records maintained by public and private carriers and by law enforcement officials at the Federal, State and local levels. Data on crime in intercity bus stations is inadequate since police agency records do not list crimes according to location and intercity carrier records are incomplete.

Utilizing a variety of data sources, the study provides summaries of reported station offenses for major California intercity bus stations.

Recommendations for preventing crimes at bus stations are suggested, with no single measure or set of measures judged to be effective against all crimes. Closed circuit television, alarm systems and the presence of uniformed police are the best known and most effective strategies for crime prevention at bus stations. The report recommends implementation of a uniform transportation crime reporting system for public and private providers, security guard training, location identification on police reports and subsequent monitoring of preventive programs.

Sperling, Daniel and Robert Goralka. An Evaluation of the Desert Stage Lines Project: Bus Service from Victorville to Twenty nine Palms (Intercity Bus Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, January 1985.

Idem. An Evaluation of the Foster's Transportation Service: Bus Service from Taft to Bakersfield (Intercity Bus Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, September 1985.

Idem. An Evaluation of the Mendocino Stage Lines Project: Bus Service from Fort Bragg to Westport (Intercity Bus Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, September 1985.

Idem. An Evaluation of the Mt. Lassen Motor Transit Project: Bus Service from Red Bluff to Susanville (Intercity Bus Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, January 1986.

Sperling, Daniel, Steve Peppers-Johnson and Martin Markovich. An Evaluation of the Coastlines Project: Bus Service Between Monterey and San Luis Obispo (Intercity Bus Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, June 1987.

The California Budget Act of 1980 authorized funds for assistance to private intercity bus companies, and provided the assistance be disbursed through the California Department of Transportation (Caltrans). Caltrans contracted with the University of California at Davis to conduct post-project evaluations of the program. Under the program, intercity carriers received operating assistance to provide new transportation service to underserved areas and additional funding to market that service. Each of the projects described served sparsely populated areas, with the new service generally unable to generate sufficient ridership to sustain unsubsidized service. The reports serve as a model for conducting post-project evaluations of transportation

service, with each report providing census data, ridership information, operating costs and revenues generated by route. Financial performance measures are developed by month, with out-of-pocket comparisons drawn between auto and bus for specified round trips.

Sperling, Daniel and Robert Goralka. An Evaluation of the Redwood Empire Lines Project: Bus Service from Redding to Eureka (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, June 1986.

The report examines bus ridership by the rural elderly in a Northern California corridor to determine the extent to which they depend on intercity bus service and why they do or do not patronize available services. A review of the literature and the local demographic profile preceded a survey of rural elderly. Two survey approaches were used: an on-board interview process examined user characteristics and a telephone survey asked elderly residents about bus ridership. The results indicate that rural residents had the highest demand for intercity bus travel, with lack of an alternative to the bus influencing their decision to use the service. Income did not appear to be a factor affecting bus ridership, and ridership did not decrease disproportionately with age. Media did not attract elderly ridership since most had heard of the service through word of mouth from friends and relatives or other sources, suggesting that marketing strategies targeting the elderly should focus on door to door leaflets, bus signs and advertising in elderly club and church bulletins. The appendix contains the questionnaires used in the study, along with demographic data and statistical tests.

Sperling, Daniel and Robert Goralka. An Evaluation of the Redwood Empire Lines Project: Bus Service from Redding to Eureka (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, August 1985.

Idem. An Evaluation of the Calaveras Transit Company Project: Bus Service from Jackson to Sonora (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, October 1985.

Idem. An Evaluation of the Amador Stage Lines Project: Bus Service Between Jackson and Sacramento (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, June 1987.

The three reports evaluate projects funded by the California Department of Transportation. The major program objective was to provide an impetus to carriers to implement new, expanded or innovative services that would "accommodate latent service demands." Each of the projects received funding from Caltrans for operating assistance to initiate new service and additional funding to market that service. The reports examine population data, distance information, transportation alternatives, schedules and cost of using the bus compared to the private automobile. Low population densities accounted for low ridership and non-viable routes for the Jackson to Sonora and the Jackson to Sacramento projects. The Redding to Eureka project,

however, was successful. Factors involved in that success included dense population centers located at each end of the route, with each center containing residential, commercial and industrial trip generators and attractors; expanded service along an existing profitable route and a more convenient service provided to a growing population center.

Sperling, Daniel and Kenneth Kurani. An Evaluation of the Inter Mountain Stage Company Project (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, May 1983.

Idem. An Evaluation of the Storer Transportation Services, Inc. Modesto-Hickman Stage Project (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, August 1983.

Idem. An Evaluation of the Greyhound Lines Inc., Tracy-Fresno and Modesto-Fresno Project (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, January 1984.

Idem. An Evaluation of the Desert Stage Lines Project (Palm Springs) (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, May 1984.

Idem. An Evaluation of the Sierra Highlands Trailways, Merced-Bass Lake, Project (Intercity Bus Service Improvement Program). Prepared for California Department of Transportation, Division of Mass Transportation, May 1984.

The five reports evaluate projects in which State assistance was provided to intercity carriers during 1979-1980. The State assistance was designed to allow intercity bus companies to experiment with new services, new schedules and handicapped accessible service, with the State absorbing any operating losses incurred by those services. The strategies used in the program included operating assistance to expand service, marketing assistance to promote the service, and management assistance offered through the California Department of Transportation. The reports evaluate the impact of the assistance, particularly the role of marketing in increasing ridership of intercity routes. The routes are described, demographic and economic characteristics of the population outlined, fare structure described, ridership data listed, service performance data provided and financial performance measures tabulated for the project period. Recommendations for similar future projects include the need to coordinate marketing efforts, the importance of initiating adequate data collection for evaluation purposes, and the development of more flexible contracting procedures.

Stevens, Charles L. and Paul B. Norris. "The Role of the Intercity Bus Industry in Isolated Rural Regions of Oregon" (Mimeo graph). Prepared for Oregon Department of Transportation, Policy & Planning Section, 1983.

The paper describes a study undertaken in anticipation of bus deregulation which focused on the need for and alternatives to intercity bus service in rural communities. Several isolated communities without bus service were compared to several similar communities with bus service. Passenger service in communities with service was relatively infrequent, often inconvenient and

offered few intermodal connections. On the other hand, the package service provided by intercity bus was rather heavily used by business and farmers in those communities. In communities without bus service, most residents, particularly the elderly, appeared to be able to arrange transportation; however, individuals without access to an automobile faced increased inconvenience. Communities without bus service relied more heavily on UPS, but many products, such as blood and larger machinery parts, cannot be shipped by UPS. The lack of intercity bus service added inconvenience and considerable expense for a number of businesses, particularly agricultural enterprises. The study concludes that if the public is to subsidize rural intercity bus service, it should consider transporting freight as well as passengers since freight movement is an important aspect of the service provided to rural communities by intercity bus.

Urbanik, Thomas, Patti Bass and Kenneth Marshall. The Intercity Bus Industry in the U.S. and Texas. College Station, Texas: The Texas A&M University System, Texas Transportation Institute, August 1981.

The study was conducted to develop information and data to provide a definition of the nature and extent of intercity bus transportation in Texas. The report describes the development of the intercity bus industry nationwide, and provides a useful collection of tables which describe bus passengers, carrier characteristics and changes in the intercity passenger industry since it began. The history and development of the Texas intercity bus industry follows, with the results of a user survey and a household survey presented. Survey results are compared with a Michigan study to determine whether there are differences between the two states. The study discusses regulation since the Motor Bus Act of 1981 was then under consideration. While the study was completed in 1981 before the Bus Regulatory Reform Act of 1982, the information contained on the bus industry and on passenger characteristics is useful to compare with data collected from surveys conducted after the Reform Act of 1982.

Washington State Department of Transportation. Intercity Bus Study: Washington, Oregon and Idaho Study Report. 1982.

The study analyzes existing and projected demand for intercity bus service, the financial condition of the industry and Federal and State regulations. Conducted while Congress was debating the Bus Regulatory Reform Act of 1982, the study also examines the provisions of the legislation and analyzes their impact on existing routes. The study concludes that ridership had been declining and that revenues were shrinking for the industry. A telephone survey and an on-board survey collected information on rider characteristics. Recommendations included the need to establish better interface with other forms of public transportation, diversify services with various carriers specializing in different services to provide more adequate coverage, improve intercity equipment and terminals and improve intercity service in cooperation with other modes of transportation and state and local governments. The report contains much information on rider characteristics, carrier financial condition and route details that could be useful in drawing comparisons with post-deregulation intercity bus transportation.

