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AN ANALYSIS OF THE INTERCITY BUS INDUSTRY AND THE MICHIGAN BUS SUBSIDY PROGRAM

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16. Abstract

A study was conducted to identify and corroborate the central economic and regulatory issues facing the U.S. intercity bus industry in the late 1970's.

It examined the Michigan Intercity Bus Assistance Program largely from the perspective of participating carriers, who were extensively interviewed. The demographics of ridership in Michigan and the U.S. were reviewed and the impacts of the Michigan program on bus ridership and finances were assessed. As an aid to future intercity bus transportation planning in Michigan, linear regression analyses were used to clarify relationships between ridership and population, and ridership rates and levels of service. Specific policy recommendations for state and federal planners are offered.

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1. INTRODUCTION AND DISCUSSION OF ALTERNATIVES

Continuation of the existing trends in costs and revenues in the intercity bus industry in the United States will result in serious economic problems. Costs, both capital and operating, are accelerating more rapidly than revenues, and projection of the present trend indicates that the industry as a whole will reach the break-even point in 1981. (1)

Since the industry is composed of many individual operating companies, there is some disagreement as to how imminent the financial crisis may be, but it is generally conceded to be inevitable unless changes in the industry's financial structure are instituted. The purpose of this study is to identify options for the operation of intercity bus transportation, based on a study of the existing operation and the subsidy program presently in effect in Michigan.

Issues

In evaluating alternatives for intercity bus transportation, several important issues must be addressed.

1) Short-term versus long-term perspectives.

It is important in reviewing policies to retain a long-term perspective, as opposed to short-term expediency. If the future supply of energy can be expected to alter the competitive position of the bus versus air, rail, and automobile travel, this should be recognized as policies are considered and implemented. One of the arguments for retaining the rail system on non-profitable routes is to avoid the loss of a system that may someday be

required. While the bus industry is not as capital-intensive as the rail industry, and does not have major equity in rights-of-way, there would still be significant costs associated with entry and exit from the market. Unless terminals and rolling stock are retained and maintanined, the capital costs of restructuring a system that is allowed to vanish could be significant.

2) Questions of equity.

Several types of equity must be considered when reviewing policy options. First, there should be equity among the different carriers. Should a few carriers be allowed to monopolize the profitable markets by tight market entry restrictions? Should existing operators be given preference in either the profitable markets or on contract routes? Should there be "two levels of service," (a subsidized level and a competitive level), and should a single carrier be allowed in both the profitable and the subsidized market?

There should also be equity across various public transportation modes if they are expected to compete for the same market. Is it equitable to subsidize AMTRAK in the same corridor that the bus carrier is expected to operate without subsidy? Or, are the buses subsidized by virtue of being able to operate on a public right-of-way?

Finally there is the question of equity between the carriers and the public. The bus industry has enjoyed the benefits of franchised service routes that are intended to guarantee them a market free from competition with other bus carriers. While these markets were profitable, the industry gained. Now that some of the lines are not profitable, what obligation exists to maintain service?

What questions of equity arise concerning those businesses and individuals who are fully or partially dependent on the bus service?

3) The public good and the public necessity.

Some definition of the public necessity for mobility and the public good provided by continuing public bus transportation must be made. This is particularly true for smaller communities where alternative modes may not be available. If there is a public necessity, then perhaps the public should support the bus system up to this level, and the private industry serve only those markets where the demand is sufficient to operate at a profit. The same argument could be made for assessing the public good (presumably a higher level than the public necessity) and providing public support for the system up to this level.

The definition of public necessity and public good will probably vary with the size of the city, the location of the city, and whether it is served by other modes of public transportation. Each system alternative considered will have a differential impact on different cities and communities, and those impacts should be weighed against the mobility needs and desires of the citizens.

The approach taken in this study was to explore these questions of equity and necessity with representatives of the bus industry, the Interstate Commerce Commission, and the U.S. and Michigan Departments of Transportation; to identify some policy options and to assess these options against the issues identified above; to relate these policy options to existing regulations; and to review

present experience with subsidy programs,using Michigan as a study site.

Options

One option would be to initiate actions designed to increase the intercity bus percent of the passenger market. This could be done either by increasing the attractiveness of the bus mode or decreasing the attractiveness of competing modes. Experience with market elasticity to service frequency and fare changes in intra-city bus transportation casts some doubt on the viability of this option. These experiences indicate that the increased revenue may not cover the cost of increasing the attractiveness of the service. This is particularly true in the rural transportation market segment,where the intercity bus is the only form of public transporation.

The use of special fares for unlimited travel did sucessfully increase the number of passenger miles on the national carriers(2), and this remains an option for service between major cities. The fact that the fare elasticity is not zero would suggest that reducing the subsidy provided to competing modes (AMTRAK) could have a positive impact on bus ridership. However, the number of passengers and the passenger revenue to be gained from this source, on the limited number of routes where there is direct competition, would not appear to be sufficient to reverse the increasing trend in the industry operating ratio.

This option does not address the problem of the small operators' offering primarily rural service in corridors not in direct competition with AMTRAK.

A second option is to expand the charter and small-package delivery services

which are profitable, and utilize these profits as a form of internal subsidization of the regularly scheduled intercity bus operations. To a large extent, this is presently being done, particularly with the larger bus companies. However, unless there is reason to believe the subsidized portion of an industry will become profitable at some future time, there is little incentive to maintain service and make investments in that portion of the bus operation. Since there is no evidence that the increase in the operating ratio is temporary, this option might lead to the same service deterioration that characterized the rail industry under a similar cross-subsidy strategy.

Because the bus industry is regulated, implementation of this option would require cooperation from the regulatory bodies as well as the industry. To generate sufficient funds to make cross-subsidization feasible, certificates for profitable charter service, high-volume regularly scheduled service and package service would have to be limited to companies offering low-volume intercity service. Increased enforcement would be required to restrain "gypsy" operators from entering the charter market.

A third option is to provide external subsidies from the state and federal governments to compensate the industry for its losses and to provide a reasonable return on their investment. These subsidies (capital or operating) could be industry-wide, carrier-specific , route-specific or granted to users as a basis for increasing ridership and revenue to a profitable level.

At its extreme, this option would include nationalization of the industry or the creation of a publicly subsidized corporation similar to AMTRAK.

A fourth option is to reduce or eliminate service on low-patronage routes that do not generate sufficient revenue to meet their cost of operation. This would allow companies to concentrate their resources on fewer, more profitable lines with the intent of continuing as profit-making private enterprises.

This becomes a true option only if there is economic equilibrium at a reduced system size. However, there appears to be little information available to estimate the potential "domino" effect of these actions. The feeder routes are considered to be an important element of main-line profitability, but the value of this component cannot be determined reliably with data available today.[3] Because of a lack of information for estimating the net effect of eliminating service on the light-density routes, this action does not seem prudent now.

This same issue has never fully been resolved in the case of rail freight in the Conrail service area. The final extent of the system and the value of subsidizing branch lines is still unresolved.

This fourth option, as with the second option, would require cooperation of the regulatory agencies, since franchised service cannot be discontinued without their approval.

Additional options can be developed from combinations of these four alternatives. For example, an operations model patterned after the airline industry appears to be worthy of consideration. Under this option,

major carriers would operate non-subsidized (with the possible exception of terminals) service between major markets, with contracted carriers providing rural service between smaller markets and feeder service between these smaller markets and the major terminals. These carriers could be independently franchised by the state in which they operate, and subsidized by state and federal funds. Subsidies would be reduced by limiting entry into charter and package service to contract carriers operating in accordance with the state plan. The state would determine the level of service to be provided to the citizens, and the subsidy level necessary to provide this service.

This option would retain the private carrier in markets where the operation is profitable, and still maintain the feeder market necessary for these profits. This option also separates the subsidized service from the non-subsidized service, thereby reducing the risk of over-investment in one component at the expense of the other. Finally, it allows the states to determine the level of service they desire and are willing to subsidize.

This last option appears to best address the issues raised at the beginning of the paper. Discontinuing service on the lower-volume routes would seem to be inappropriate for four reasons.

First, the intercity bus industry serves a unique clientele, and thus provides service to segments of our society that cannot afford or do not have access to other public transportation moes. Recent surveys in Michigan (4)

and throughout the nation [5] have shown that the bus industry carries more passengers than rail and air combined, with a disproportionately high number of the young, old, and poor. These studies were conducted in 1977, and they provide current data as a basis for considering options.

In the national survey, 30.0 percent of the passengers were under 18 and 16.8 percent were over 65. Intercity rail passenger percentages were 16.8 and 10.5,respectively,and air passenger percentages were an even lower 9.0 and 6.4. Thus, nearly 50 percent of the bus passengers were from those segments of society other than the normal work force, compared to about 25% for rail and 15% for air. Because the bus industry serves a disproportionately low percentage of the age group associated with the employment sector, it is not surprising that many of their passengers are from the low income groups. Specifically, 43.9 percent of the passengers reported incomes of less than $7500,compared to 26.1 percent of the rail passengers and 12 percent of the air passengers. Since bus fares are generally lower than competitive modes, a reduction in bus service would hit particularly hard on this segment of our society.

Second, the industry serves many small cities where this is the only public intercity transportation service available. Nationally, intercity bus service is offered to 15,000 communities, with only 1000 of these cities also served by rail or air service. [6] If this service were curtailed, these markets would become the likely candidates for elimination, as they are the least profitable. In Michigan, there are 68 cities with a population between 2000 and 25,000 which have bus service. Only seven of these have rail service and eleven have commercial air service within 25 miles of the city.

Third, the bus mode is the most energy-efficient of all public transportation modes operating intercity service, by a factor of at least 2 to 1 over rail and about 7 to 1 over air.[7] While this study did not attempt to identify the probability of future energy shortages, energy conservation is a national policy. Even if another fuel crisis is not experienced, it is in our national interest to reduce oil imports by stressing energy conservation where possible.

Finally, eliminating non-profitable lines to avoid subsidization of public transportation to those segments of society identified earlier is not consistent with national policy. The federal governement, as well as many state and local governmental units, has accepted the responsibility to provide (at a highly subsidized level) urban public transportation and intercity rail transportation. The rationale for this decision is the need for adequate transportation in our society. There seems to be no less need in a rural community than in an urban center on a main line between major centers served by AMTRAK.

2. VIEWS OF THE INDUSTRY AND THE INTERSTATE COMMERCE COMMISSION

National Industry Views

In preparing this report, interviews were conducted with officers of the American Bus Association, Greyhound Lines, Indian Trails, North Star Lines, Valley Coach, and various government officials concerned with the intercity bus industry. This section of the report summarizes the results of these interviews.

In two recent documents the American Bus Association (ABA) presented its case in considerable detail. The first instance, 1977, was before a Congressional committee making an inquiry into the financial condition of the intercity bus industry.(8) A second report appeared in 1978 and covered much of the same material. It was, however, less technical, and was apparently meant for a different audience.(9)

A few figures from the second document characterize the industry: It provides service to 15,000 communities, more than any other public transportation mode; it carried 340 million passengers in 1976, more than either the railroads or airlines; it has lower fares than any other mode of travel and has the best safety record. Additionally, the industry notes with pride that it is the most fuel-efficient mode and gets closer to homes than do trains or airplanes.(10)

The year 1966 was a banner year for the inter-city bus industry. For example, the number of Class I revenue passenger-miles traveled on regular routes hit a high of 16.5 billion in 1966 and then declined to 12.5 billion in 1976.

Comparable ABA data for the entire industry (Classes I, II, and III)* show revenue passenger-miles in 1966 at 24.6 billion. This parameter increased to 27.7 billion in 1974 and then declined to 25.1 billion in 1976. The total number of passengers for all carrier classes is reported by ABA as 402 million in 1966, declining to 340 million in 1976.[11]

The smaller (Class II and III) carriers are the first to feel the consequences of inflation and route diminution because they are less capable of cross-subsidization. It is obvious, therefore, that these smaller companies will be the first to disappear as certificated carriers if the situation becomes increasingly critical.

Both the small and large intercity bus operators are finding a growing portion of their revenue coming from charter and special service runs. This has increased their concern over the waiver of certification requirements for school buses and the proliferation of "gypsy" operators that prey upon the more lucrative markets. "Gypsies" are uncertificated carriers that avoid the requirements of the regulatory agencies. The regulated bus operators feel that more can, and should, be done to curtail the activities of these illicit operators. The smaller companies are more vehement in this regard, for they are less able to manage the loss in revenue which results from such competition. (12)

Economic data for the bus industry are generally provided in the form of a single measure called the operating ratio. This ratio is defined as the operating costs divided by the revenues expressed as a percentage. The higher the ratio, the lower the profit margins. The following data are descriptive of trends as measured by this parameter.

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* A class I carrier is defined as a carrier with annual revenues of 1 million dollars or more.

National Trends in Operating Ratios [13]

Year	Operating Ratio
1966	86.1%
1971	89.4%
1976	95.8%

The economic decline in the bus industry is attributed to underlying social, economic, and political trends over which the industry has no control -- such things as rising affluence, the multiple-car family, and increased urbanization reducing the need for public transportation service in rural areas. Additionally, high unemployment usually hits the bus clientele harder than higher income groups. Inflation also reduces the transportation budgets of those who usually ride the bus.

Another economic problem faced by the industry is the location of bus terminals, especially in larger cities. Deterioration of central cities and relocation of bus clientele make the existing terminals obsolete. Thus the industry speaks of relocating and rebuilding such terminals and complains that capital is not available because of declining traffic revenues. [14]

Terminal operating costs represent an average of 20 percent of ticket revenue, but in some terminals costs range as high as 40 percent. [15] Greyhound officials claim the company does not have the income to buy urban land and rebuild terminals. It would support a program that would

free the company of this capital outlay. However, it believes that its terminal operation procedures are superior to those offered by AMTRAK, and would prefer to retain control over these activites.

Smaller companies appear to be less receptive to the initiation of intermodal transportation policies. In Michigan the larger companies benefit more from intermodal coordination. Whether this is due to their ability to provide better service or to other factors has not been analyzed. Many of the smaller carriers, however, seem to feel more threatened than encouraged by the adoption of intermodal transportation policies.

Since the industry is regulated, the price changes must be approved by the state regulatory agency or the I.C.C. Industry representatives point out that during the period 1973 through 1976, 29% of the proposed rate increases were denied, and this translates into a loss of $48.3 million in the industry's revenue base. Thus "rate flexibility" is a prime topic of concern. (16)

Briefly, the rate flexibility issue has two facets: first, the industry would like general authorization to raise rates as much as 10 percent annually without interference from the regulatory commissions; second, it thinks 30 days between request and effective date should be shortened. At least one concession on this latter point has been made by the ICC. In the event of a rate change by AMTRAK, the competing bus route may post rates that take effect within five days.(17)

Because intercity bus operators are a private industry, they object to competing with subsidized AMTRAK trains in the most profitable corridors. Unlike the bus industry, AMTRAK is not required to obtain permission from the ICC before changing its fares. This advantage plus huge government subsidies lead to the bus industries claim that they are subjected to unfair competition.

The intercity bus industry makes a significant contribution to the national economy. It contributed $1.2 billion to the gross national product in 1976; it employs 46,000 persons and spends more than $100 million yearly for the purchase of new equipment. It also pays more than $130 million yearly in local, state, and federal taxes; and it serves the lowest income groups, the elderly, and persons living in small communities.(18)

The industry concludes that "it is essential for the federal government to recognize the financial plight of the intercity bus industry and move to solve it now before actual losses occur. The catastrophic series of bankruptcies which occurred in the rail industry must not be permitted to happen in the bus industry." (19)

There are many options for governmental assistance to the industry. The industry expressed its preferences in the form of proposed legislation titled "Bus Revitalization Act of 1977."(20) The major programs included:

I. Operating assistance to provide:

   A. Reduced fares for the elderly and handicapped;

   B. Grants for assistance in maintaining unprofitable service which the government requires.

II. Federal and state aid for the construction and improvement of facilities (terminals).

III. Rate flexibility -- the ICC should be prohibited from suspending fare increases that do not exceed in any one year 10% of the fare level of the previous year.

IV. A relief from excise tax and/or a refundable tax credit on investment and new purchases.

V. A depreciation allowance that will cover the costs of inflation.

These proposals were never introduced in Congress as a separate bill, but many of the proposals were enacted in the Federal Public Transportation Act of 1978.[20a] New programs include funds to improve intercity bus service in rural areas ($30 million per year) and grants to states for terminal development ($40 million per year) with emphasis on intermodal characteristics. The Energy Production and Conservation Tax Incentive Act also provided economic aid in the form of a repeal of the excise tax on buses and bus parts, and a refundable tax credit based on passenger-miles. [21]

The inclusion of subsidy programs for the bus industry in 1978 legislation suggests the industry has attracted the attention of policymakers in recent years and that an awareness of the financial condition of the industry is growing. There appears to be no serious disagreement on the financial trends presented by the industry. Congressional reports and Members of Congress are on record as being in general agreement that some

assistance is needed and should be forthcoming. For example, Senator Russell B. Long (D-La.) said toward the end of the hearing on the financial problems of the industry: "...there's no doubt in my mind that this industry is getting the work done, and it needs some help, and we ought to try to do something about it." (22)

Also, the Senate Committee on Finance, reporting on the Energy Production and Conservation Tax Incentive Act, stated: "Consequently, the committee feels that the intercity bus industry should be given financial assistance in the form of tax incentives to enable it to improve its services, particularly on regularly scheduled routes." (23) The report goes on to recommend a "refundable tax credit" based on passenger-miles and that such monies should go to reduce fares, particularly in situations where buses are operating at less than full capacity.

Greyhound officials assert that the wording "situation when buses are operating at less than full capacity" would include basically all "rural to rural" operations and many "rural to urban" routes. "Urban to urban" corridors, however, appear to be self-sustaining. Even on the "urban to urban" corridors Greyhound is not opposed to receiving government assistance for routes which compete with AMTRAK. However, they expressed opposition to government subsidies for those "urban to urban" corridors on which only bus companies compete.

Unlike many of the smaller companies, Greyhound is not concerned with the escalating costs of insurance. Greyhound (and Trailways) are large enough to be self insured. Thus they are not at the mercy of a third party's assessment. (24)

Greyhound officials expressed several concerns about the practices of the Interstate Commerce Commission, whose regulations they view as an operational constraint. Whereas the ABA favors more "rational" regulation from ICC, Greyhound officials suggested the nation would be served better if the ICC offices were padlocked.

However, these same spokesmen rejected the suggestion by the Justice Department to deregulate the motor bus industry by allowing free entry of carriers into the business. They believe this policy would lead to higher fares because competition would create additional expenses. Gravitation of more carriers to the larger markets would then require federal subsidies to ensure service to the smaller communities. Unemployment in the industry would be more seasonal because certain carriers would operate only during peak seasons. Finally, there would be less revenue for upkeep of current equipment. In this testimony it was made clear that the officials at Greyhound were more upset with the Commission than they were with the Interstate Commerce Act. (25)

ICC Views

In testimony before Congress in 1977, ICC Chairman A. Daniel O'Neal appeared to concur with the industry's assessment of the financial status of the Class I carriers:

> In the period 1971-1976, the nation's Class I bus carriers -- those with operating revenues in excess of $1 million - experienced an operating expense increase of 43.2 percent. During the same time, their operating revenues increased by only 30.8 percent. This disparity resulted in an increase in the industry "operating ratio" from 87.6 to 95.6, which in our view is a trend which cannot be sustained for any substantial length of time. Moreover, during the same 1971-1976 period, the industry's return on net investment declined from 21.3 percent in 1971 to 9.8 percent in 1976. (26)

However, the apparent concensus by the bus industry and the Congress on the need for subsidies is not embraced by the Interstate Commerce Commission (ICC) (nor by the U.S. Department of Transportation). Where the President of the ABA said in 1977 that the industry could "survive perhaps two years," the Chairman of ICC found that, while the industry is in a state of decline, it did not "consider the industry's financial position to be critical at this time." (27) Further, the Chairman, while admitting that the industry picture is not healthy and certainly cannot be sustained, stated that the ICC doesn't "feel that conditions are such that they would justify a subsidy." (28) His suggestion for improvement in the financial outlook for the industry was a rate increase, although he admitted that this would result in some diversion of traffic.

The industry's legislative proposals were termed "premature." The ICC "does not believe that the necessity now exists for this proposed federal intervention in the motor bus industry."[29]

Of particular concern was the ten percent "no suspend zone" suggested in the proposals. This, according to the ICC, is an "important regulatory tool which enables the Commission to consider the public interest immediately upon the filing of a new fare." [30] In his statement, the Chairman argues that "regulatory reform in the motor bus industry must be considered as a whole. It would be inappropriate to create systems where existing carriers are protected from the rigors of unlimited competition, allowed to set fares collectively, and are at the same time allowed considerable freedom to raise those fares without Commission oversight." [31]

The Commission also opposed the tax relief provisions. According to ICC, they were intended to cover the payments of private companies for the use of public right of ways. Subsidies for terminals were not opposed outright, but the ICC suggested that such funds be coordinated with similar subsidies to railroads and that the program require a state intermodal passenger transportation plan. [32]

In the main, the testimony by the Chairman in 1977 reflected the view of the specialist who, knowing the complexities of the industry, was reluctant to commit to new policies without thorough investigations with special concern for unexpected effects.

A similar tone was struck in a recent report on the bus industry made by ICC staffers. In reversing the role of responsibility, the report states:[33]

> The absence of sophisticated analytical tools suggests that the industry should reconsider and review its costing and pricing knowledge, marketing strategy, service capabilities and facilities for meeting present and potential ridership needs in today's economic and social environment.

The report also called for a state and federal review of social and transportation policy, including regulatory needs, to discern opportunities for encouraging and assuring the maintenance of adequate and effective service.

Michigan Industry Views

The intercity bus industry in Michigan parallels the national economic patterns but raised some additional problems that deserve attention.

The smaller bus operators in the state of Michigan are seriously concerned about the rising costs of carrier liability insurance, as well as fuel and labor. Nearly all the carriers interviewed cited insurance premiums as a principal factor in the financial decline of the bus industry. Some stated that it was their greatest single cost item each year. These costs have increased by 50-100% over the past year. The increased insurance premiums are especially resented because it is believed that many insurance companies raise premiums arbitrarily and without considering the safety record of the carrier. To minimize the burden of increasing insurance costs, some carriers stated that they have been forced to reduce their regular route service in favor of the more lucrative charter market.

The crux of the insurance problem in Michigan is the issue of unlimited

liability. Michigan's "no-fault" insurance law does not apply to common passenger carriers, which leaves the operators open to virtually unlimited damage claims. This problem could be alleviated if the state would institute a program to provide limited liability insurance coverage to the carriers at reduced premiums. Alternatively, the State Legislature could extend "no-fault" insurance coverage to common passenger carriers with limited liability provisions.

The Michigan Public Service Commission (MPSC) is also singled out for criticism for its lack of regulation enforcement. All common carriers who wish to operate in Michigan must obtain a Certificate of Public Convenience and Necessity from the MPSC. This regulation was designed to limit the entry of new carriers into markets which already had sufficient service. Many carriers complain that enforcement of this regulation is grossly neglected. They say that "gypsies" are known to operate extensively in Michigan (34) and that MSPC officials cannot, or will not, curtail their operations. The degree to which these illegal operators infringe upon the market of legitimate carriers has not been accurately assessed, although the certificated carriers insist it is substantial. (35)

A company's authority to operate intrastate service comes from the state level. For interstate service, however, authority is granted by the ICC. On both levels authority is granted when proof is given of "public convenience and necessity" and a demonstration of willingness and ability to perform the service. Essentially then, the two operating authorities tend to be harmonious. For intrastate routes, no ICC authority is necessary, but for interstate lines the ICC authority supersedes MPSC authority.

For interstate routes, Michigan is limited in the kinds of regulation it may attempt to place on the intercity bus system. The state can regulate matters of safety, and a company has to meet the safety specifications in all states in which it operates. Each state can require a registration fee for each interstate route, and levy taxes according to its own guidelines. But beyond questions of safety and taxation the states have little authority. Currently, Michigan has a problem with some of the safety regulations, because when the 1963 Motor Carrier Safety Act was passed, motor buses were inadvertently omitted. Thus there is a void in terms of some safety regulations. This omission is currently in process of being rectified through legislative action.(36)

Route abandonment and reductions in the level of service are also major regulatory issues. Michigan is not unreasonable or overly stringent in adhering to these regulations. Under Michigan regulations any abandonment of service for more than ten days can mean loss of authority. However, enforcement of existing certificates is not typically rigid. There are many active certificates for service in corridors that have never been served and there are others which have not been served for many years. This is primarily because while charter rights and regular routes are held separately under ICC regulations, in Michigan charter rights are automatically held with regular operating authority. Consequently, it is possible to apply for operating authority, primarily for the charter rights, without the question of charter rights ever being part of the hearing process. Thus weekly service or even dormant authority protects the charter rights.(37)

While the Michigan bus industry favors strict regulation of the "gypsy" operators, they are themselves guilty of operating outside the spirit of the regulations they would like to see enforced, by using regular route certification to protect charter business.

3. THE MICHIGAN INTERCITY PASSENGER BUS INDUSTRY

Twenty certificated intercity bus carriers provide regularly scheduled service to seventy-three percent of all Michigan communities with a population more than 2500. In many respects the characteristics of the bus industry in Michigan closely resemble those for the industry nationwide. In this section, ridership and financial trends characterizing intercity passenger bus transportation in Michigan are compared with national trends. This comparison is provided to assist other state or federal transportation planning authorities in determining the transferability of Michigan's bus assistance program to their respective jurisdictions. The State of Michigan's assistance program will be explored in detail in the following section.

Ridership Characteristics

The data describing passenger family income, age, sex, trip purpose, passenger occupation, and passenger auto ownership for Michigan bus travelers are derived from a 1977 survey conducted by the Michigan Department of State Highways and Transportation. (38) The data describing similar ridership characteristics for the nation overall are derived from the study by the Interstate Commerce Commission. (39)

The majority of intercity bus travelers in the nation have relatively

low household incomes. Eighty-two percent of these travelers earned less than $15,000 per year; 26.5% came from households earning less than $5,000 per year.[40] In Michigan the percentages are not quite as high, with approximately 56% earning less than $15,000 and 27% earning less than $6,000.[41]

Approximately 59% of all bus passengers nationwide were females, compared to 57% in the Michigan survey. In the national survey, 30% of these passengers were under age 18, 18.8% were between 18 and 35, and 29.7% were older than 55.[42] The age profile in Michigan is significantly older than that for the nation, with only 6% under age 18, 46% between 18 and 29, and 26% older than 50.[43]

Approximately 32% of the nation's bus riders state that they use the intercity bus for the purpose of visiting friends and relatives, 37.7% for sight-seeing, entertainment, and outdoor recreation, while 12.2% took the bus for business or conventions.[44] In Michigan, 47% of all passengers surveyed responded that they were visiting friends and relatives. Only 8% were traveling for vacation and other social recreation, while 31% were traveling to work, shops, and engaged in personal business.[45]

Occupationally, 25% of the nation's intercity bus travelers held professional or technical manager jobs; 20.6% were craftsmen, operatives, and laborers; 15.8% were retired persons; 11.7% were employed in clerical and sales positions; and 5.9% were service employees or considered themselves household workers.[46] In Michigan, 11% of the passengers surveyed

were employed in professional capacities, 10% as craftsmen, 12% were retired persons, 4% worked in offices, 16% reported to be homemakers and service employees. The single largest occupational group riding intercity buses in Michigan were college students,who constituted 22% of all passengers. This indicates that a significant proportion of intercity bus travel occurs on weekends, a phenomenon that may vary among states. Additionally, the State reported that 7% of all passengers were unemployed at the time of the survey.[47]

Based on these data, it is apparent that the average Michigan bus passenger shares many characteristics of bus passengers in other states, especially household income and sex. Several differences between the Michigan and nationwide results are also evident. For instance, there are many fewer bus travelers under age 18 in Michigan, and slightly fewer senior citizens than in other states.

Nearly three times as many passengers in Michigan take the bus to commute to work or for other business purposes, and there is a significantly higher percentage of passengers who take the bus to visit friends and relatives. Conversely, one-fifth fewer passengers in Michigan use the bus for vacations and recreation as do passengers in other states.*

Nearly three times as many Michigan passengers were homemakers and service employees than in the national study. Regretably, the ICC did not

*Semantic differences may exist between federal and state classifications such that the ICC study, by virtue of its broader nomenclature, may include more passengers in this and other classes than would be included in the same class as defined differently by the State of Michigan.

include college students as an occupational bus ridership characteristic. Thus occupational comparisons are difficult to make, since nearly one-fourth of all Michigan intercity bus passengers selected the college student classification.

Financial Characteristics

The major financial characteristics of the Michigan intercity bus industry were compared with national statistics from the Class I carriers over the four year period, 1972-1976. Data were collected from 12 Michigan carriers,* and analyzed for seven independent variables: total revenues, regular route passenger revenues, charter passenger revenues, total expenses, total ridership, regular route passengers carried, and operating ratios. These data are shown in Table 1.

During this period, Class I total intercity bus revenues increased approximately 28%.[48] Total industry expenses, however, increased by 37%. Regular route passenger revenues were up 20%, while charter and special route passenger revenues rose 64%. In Michigan, during the same four-year period, total intercity bus revenues increased by 42%. This increase may in partly reflect the assistance provided to certain Michigan carriers through the State's intercity bus assistance program instituted in 1975. Regular route passenger revenues climbed only 13%, while charter and special-route passenger revenues increased by 79%. Total Michigan industry expenses increased by 39%, a

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* Indian Trails, Inc., Wisconsin-Michigan Coaches, Inc., (both Class I). Brooks Bus Line, INc., Deltabus Co., Inc., Empire Bus Line, Indiana Motor Bus Co., North Star Line, Inc., Short Way Lines, Inc., Valley Coach Line, Inc., (all Class II). Bee Line, Inc., Mercury Bus Lines, Inc., White Pine Transit Co. (all Class III). Because data describing Greyhound operations were not disaggregated to show only those operations in Michigan, Greyhound has been excluded from the total Michigan data and computations.

TABLE 1 - Comparison of Michigan and National Intercity Bus Statistics for the Period 1972 - 1976

ITEM	National Data for Class I Carriers			Mich. Data for all carriers (exc. Greyhound)		
	1972	1976	% change	1972	1976	% change
TOTAL REVENUE (Millions)	775.3	989.8	28	10.4	14.8	42
REGULAR ROUTE	540.3	645.8	20	4.5	5.1	13
CHARTER	95.2	156.1	64	4.3	7.7	79
TOTAL EXPENSES (Millions)	689.6	945.5	37	10.1	14.0	39
TOTAL RIDERSHIP (Millions)	164.0	139.0	-15	N/A	N/A	
REGULAR ROUTE	127.3	107.0	-16	7.08	0.94	-13
CHARTER	20.4	18.2	-11	2.61	1.62	-38
REGULAR ROUTE BUS MILES (Millions)	706.7	664.9	-6	5.22	3.98	-24
OPERATING RATIO	.89	.96	7	.97	.95	-2

figure nearly identical to the national increase. The smaller bus carriers represented in the Michigan data fared significantly better in the percentage increase in total revenues than did their counterparts across the nation.

Nationally, passenger ridership decreased by approximately 15.8% between 1972 and 1976. In Michigan, the number of regular route passengers carried during the same period decreased by only 13%.

Finally, operating ratios (total expenses/total revenues) increased 7% nationwide during the 1972-76 period, indicating an increasing operating cost per passenger dollar and decreasing profits per passenger dollar. In Michigan, the averaage carrier operating ratio was down 2%, indicating slightly higher profit returns than the national data. Operating ratios in Michigan in 1976 were the lowest since 1968. Once again, it should be remembered that the Michigan revenue data include some State operating subsidies.

In Michigan, total expenses did not increase as rapidly as total revenues between 1975 and 1976. A plausible explanation for this relative revenue increase is that some carriers may have deferred capital equipment purchases in 1976 in anticipation of receiving state subsidized equipment as provided in the Michigan intercity bus assistance program. This explanation is strengthened by the fact that the operating ratio increased to its highest level the following year, 1977, when

the bus payments became due. Thirty-eight of fifty buses purchased by the state under its bus assistance program were leased to carriers in 1976 (most in December 1976) with initial carrier payment costs remitted in July 1977.

In spite of variations among the indicators of the industry's financial stability between Michigan carriers and carriers nationwide, the composite economic picture for intercity bus transportation in the late 1970's is foreboding and critical.

4. THE MICHIGAN INTERCITY BUS ASSISTANCE PROGRAM

In 1975 the Michigan Department of State Highways and Transportation (MDSH&T) instituted an intercity bus assistance program designed to relieve some of the financial burden of carriers providing regularly scheduled service in Michigan. This program was subsequently authorized by the State Legislature through Public Act 295, "State Transportation Preservation Act of 1976." This assistance program has three phases: an operating assistance phase in which the state contracts for regular route service on certain routes; a loan-lease purchase phase to enable carriers to purchase new coaches on favorable terms; and a facilities-terminals development phase to provide state financing for the construction of transportation terminal facilities.

In this section, the three phases in the Michigan bus assistance program are described and evaluated.

Intercity Bus Operating Assistance Program

The following statement published by the MDSH&T outlines the purpose and financial mechanics of Michigan's intercity bus operating assistance program:

> A large number of areas throughout the State of Michigan are without bus service or have very limited service hours. At the present time, the private intercity bus industry cannot run the risk of providing new and/or increased service without financial assistance...The entire industry has been in a downward trend for

> the past 20-30 years due to competition from other forms of transportation and increasing operating expenses. This decline in service is depriving Michigan residents of adequate transportation service particularly in areas where no other mode of public transportation is available...In response to this need, a program of operating assistance for intercity bus carriers throughout the State of Michigan was established to implement bus service schedule development as an alternative means of transportation. The program provides for a service demonstration period with the expectation that the routes would become profitable thereafter and private carriers would continue to provide service to the routes... Operating projects will be funded to cover actual operation costs, or "wheel costs" for each separate project. These costs consist of driver wages, fuel costs, vehicle insurance, depreciation, maintenance, and any additional cost directly resulting from the specific operation...It is estimated that "wheel costs" cover 75% of the actual system costs. The participating carrier absorbs or pays the additional incidental 25% which is related to general company administration or overhead.(49)

The objectives of this operating assistance phase as stated by the MDSH&T are to (1) increase passenger ridership on existing service corridors by increasing the frequency, or supply or service; and (2) extend service on corridors between communities where no previous service has been provided.(50) The assumptions underlying these objectives of the operating assistance phase are (1) that by increasing the frequency of service on well-established travel corridors, ridership will increase and operating costs will drop relative to revenues;(2) that by extending bus service to small communities previously deprived of service by virtue of the low travel demand they generate, these isolated pockets of the population will enjoy greater access to larger metropolitan areas; and (3) that an increased supply of bus service will develop an increased demand such that state-funded routes will become self-sustaining after two years and will be continued by the carrier without further state funding.

The criteria for route selection were listed as: (1) potential to become self-sustaining; (2) amount of service provided by the carrier in the travel corridor to be funded; (3) type of service provided by the carrier in the travel corridor; (4) availability of interconnections to other markets or corridors; (5) population to be served; and (6) special market contributors, i.e. state institutions, colleges, universities, military bases, etc. (51)

In addition, the Department has also considered routes based on requests from the industry for service expansion, knowledge of intercity demand patterns from the Department's Bureau of Planning, and requests from citizens for specific city pair service. (52)

It is difficult to fully assess the effectiveness of the operating assistance phase,for two reasons. First, the state has contracted for regular route service expansion on specific routes for which prior ridership and financial data are not available. Second, even should route-by-route data be available it would be extremely difficult to isolate the effects of state dollars from other system conditions that may influence ridership and operating ratios. A preliminary assessment of ridership conducted by the MDSH&T for 1975 and 1976 was encouraging.

> The results of the first 18 months operating assistance program show increases in ridership on our regular route services. The three carriers who provide the majority of regular route services in the State, Greyhound Lines, Inc., Indian Trails, Inc. and North Star Lines, Inc., all showed approximately two percent plus increases for 1976. (53)

This testimony is confirmed by the Michigan Public Service Commission (MPSC) Annual Reports,except for Indian Trails, Inc.,which showed a slight drop in regular route passengers carried in 1976. The increase experienced by North Star Lines cannot properly be attributed to the subsidy program, because they did not receive operating assistance from the State during 1975-76. As indicated in the previous section,the aggregate net revenues for Michigan carriers were slightly higher in 1976 than they were for the industry nationwide.

A review of the individual routes included in the subsidy program indicated that the program is not successful in meeting the objective of self-sufficiency within two years. None of the fifteen routes which have participated or are participating in the program has reached this level of ridership and revenue, and most are not even meeting wheel costs.* As shown in Table 2, there are no apparent trends to indicate that the existing subsidized routes will reach this status within the two-year time frame. (The State of Michigan has since modified this goal, and no longer recognizes a two-year limit.)

To conclude,therefore, that the operating assistance program has succeeded is premature. In 1977, each of the carriers operating on these assisted routes filed financial statements with the MPSC indicating net system losses on regular route services. (54) Operating ratios for all Michigan carriers reached their highest aggregate level,and regular route ridership between 1976-77 dropped nearly 20%. (55)

The objective of providing public transportation to communities where "no

*The Indian Trails service from Sawinaw to Chicago and the Greyhound service from Muskegon to Chicago did generate revenues in excess of wheel costs, but not sufficient revenue to cover overhead costs.

TABLE 2 - Michigan Subsidy Program Route Statistics

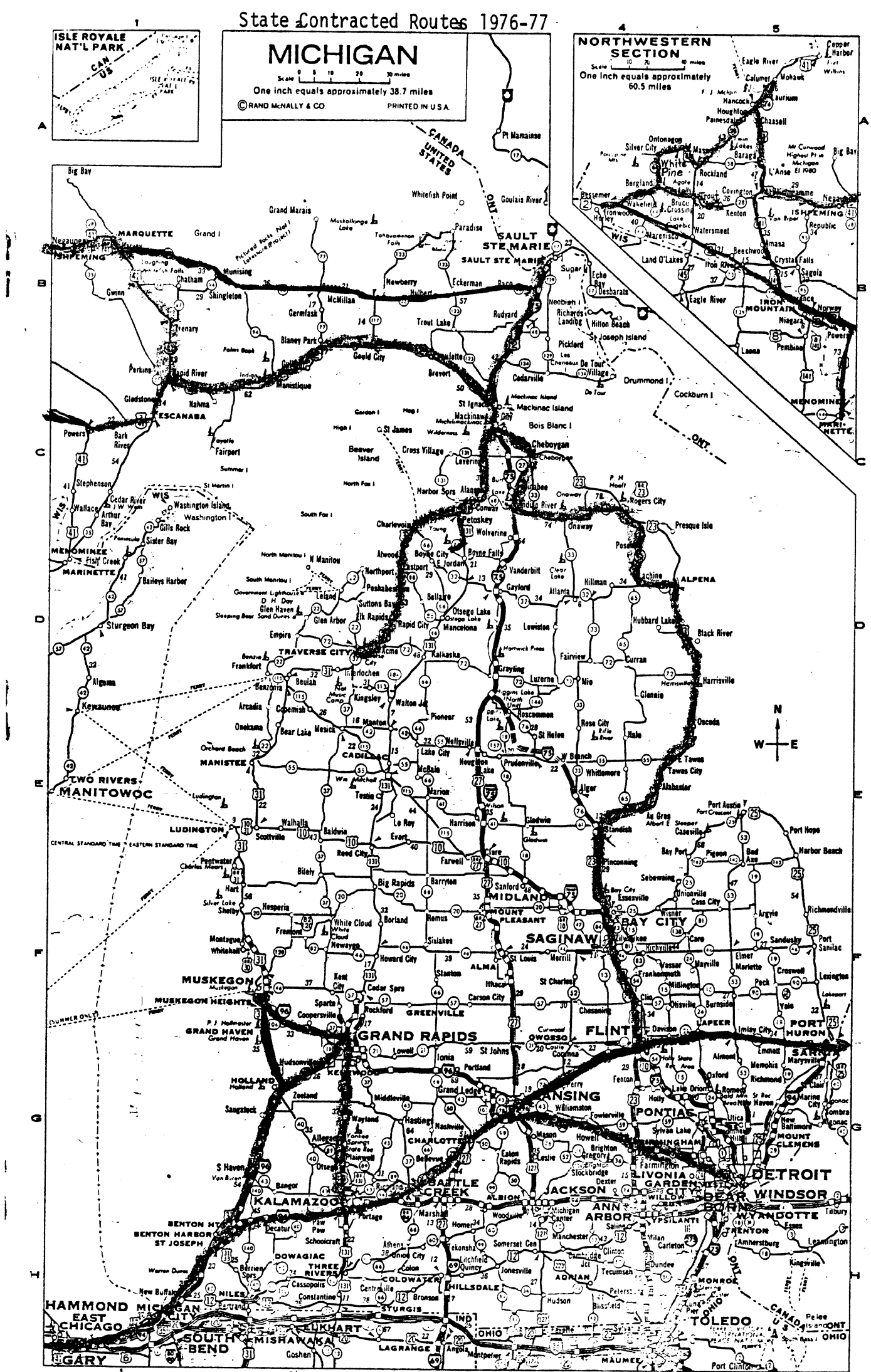
ROUTE	CARRIER	PASSENGERS			REVENUE AS % OF COST			REPORTING PERIOD	OTHER PUBLIC TRANS-PORTATION IN THE CORRIDOR
		1st QUARTER	LAST QUARTER	AVERAGE	1st QUARTER	LAST QUARTER	AVERAGE		
Saginaw-Chicago	Indian Trails	13,792	7976*	12,547	71	65	79	21 mo.	B,A,T
Grand Rapids-Kalamazoo	Greyhound	2231	6948*	4578	28	66	49	18 mo.	B,A
Muskegon-Chicago	Greyhound	4328	4344	4593	63	69	70	12 mo.	B,A
Sault Ste. Marie-Calumet	Greyhound	1319	1825	1496	23	23	18	9 mo.	B
Houghton-Green Bay	Greyhound	2409	3634	3657	21	32	33	18 mo.	A,B
Lansing-Detroit	Greyhound	1987	2302	2263	47	55	54	12 mo.	A,B
Cheboygan-Charlevoix	Wolverine	583	202	519	3	2	3	18 mo.	B

TABLE 2 (continued) - Michigan Subsidy Program Route Statistics

Houghton-Ironwood	White Pine	583	465	521	7	7	7	18 mo.	B
St. Ignace-Duluth	Greyhound	1028	1246	1269	17	22	22	12 mo.	B
Lapeer-Flint	Valley Coach	901	1117	1005	16	18	17	12 mo.	T,B
Cheboygan-Bay City	Greyhound	1752	2244	2004	16	22	24	12 mo.	B
Ironwood**-White Pine Mine	White Pine Transit	12,452	17,022	14,737	63	87	75	6 mo.	B
Trout Creek**-W. Pine Mine	South End Trans-portation	3668	N/A	N/A	66	N/A	N/A	3 mo.	B
Port Huron-Sarnia	Valley Coach	126	N/A	N/A	11	N/A	N/A	3 mo.	--
Traverse City-Boyne City	Wolverine	108	N/A	N/A	5	N/A	N/A	3 mo.	--

* Service frequency changed during the subsidy period
** Operated as commuter buses

B - Non-Subsidized Bus Service
T - Rail Passenger Service
A - Direct Air Service



MICHIGAN

Population: 8,937,196
(1970 Census)
Area: 58,216 Sq. Miles
Capital: Lansing

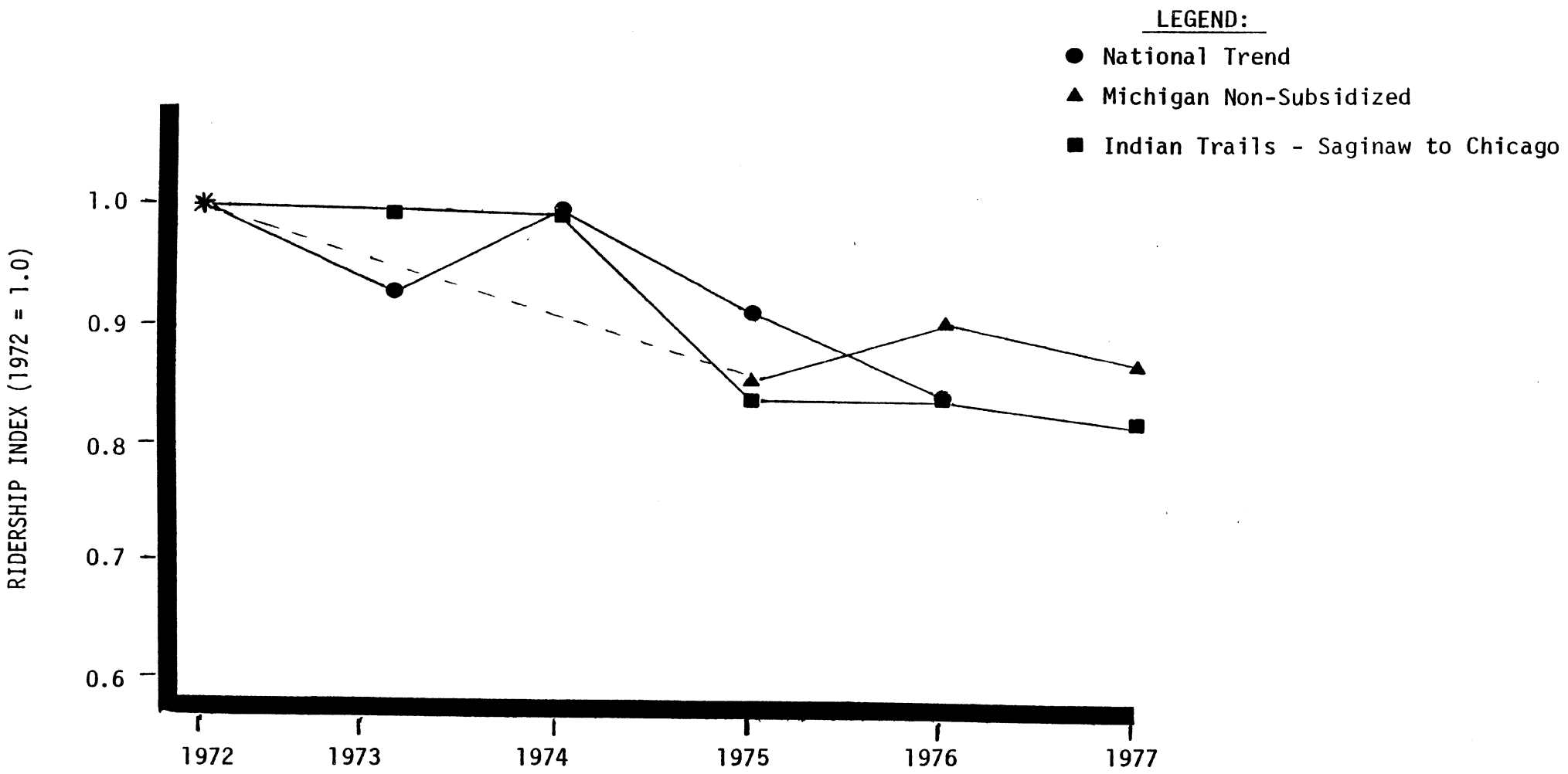
Cities and Towns

other mode of public transportation is available" has only partially been realized by this program, and this service has incurred a higher subsidy rate than service additions to existing corridors. Approximately 35% of the funds are currently being used for service expansion and 65% for new corridor development.

The state through its operating assistance program, has regularly scheduled express service on several existing high-density routes, and to a lesser extent has provided some renewed regular-route service on lower-density routes. Neither of these increases in service, however, has materially improved the financial condition of those participating carriers during the life of the operating assistance program.

The ridership and revenue from the expanded service between Saginaw and Chicago were nearly sufficient to cover the cost of this operation, but this came at least partially at the expense of the existing service in this corridor. As shown in Figure 1, the net ridership in the corridor did not vary appreciably from the remainder of the state, even though total bus miles in the corridor were increased by about 22%. The program, through an infusion of operating assistance funding,has increased the supply of bus transportation on certain routes in Michigan, without effectively increasing the public demand for this increased supply. The relationship between the supply of bus service and ridership both in this corridor and on a standard basis will be explored in a subsequent section of this study.

FIGURE 1 - Regular Route Ridership Trends



The Loan-Lease Purchase Program

One of the heaviest financial burdens facing all, operators, and especially the smaller intercity passenger operators, is the cost of new coaches. In 1967 the price tag on a new coach was about $48,000. In 1976, the average price rose to $90,000. (56) Manufacturers' retail prices now approach $115,000 per coach. The loan-lease purchase program establishes in the MDSH&T a capital equipment fund to which MPSC-certified bus carriers may apply for new coaches of their own preferred make and specification. The state buys the new buses accordingly for those carriers whose applications are granted. The carriers then lease the new buses from the state and agree to pay the full purchase price within six years. The carriers are exempted from interest payments, and since the new buses are owned by the state, the carriers are further exempted from state sales taxes and federal excise taxes. The carriers are required to pay state licensing and certification fees. Each carrier to be eligible must be engaged in regular route service within Michigan according to the following criteria:

> No carrier will be eligible for more than 25 percent of the total amount offered per year. Criteria for determining the percentage individual carriers are eligible for will be the ratio of regularly scheduled miles operated in Michigan to the total system regularly scheduled miles of the carrier. A carrier operating 75 percent or more of its total regularly scheduled system miles in Michigan will be eligible for 25 percent of the total fund available per year. A carrier operating between 50 and 75 percent of its total regularly scheduled system miles in Michigan is eligible for 15 percent of the total fund per year. A carrier who operates less than 25 percent of its regularly scheduled system miles in Michigan, but at least 150 miles of regularly scheduled service per day will be eligible for 10 percent of the total fund available per year. No carrier who operates less than 150 miles per day of regularly scheduled service in Michigan, seven days per week minimum, will be eligible for

> assistance. Any exceptions to this service requirement must be approved in writing by the Bureau and will only be considered in those cases where the type of transportation provided is a specialized weekday operation, i.e., worker carriers.(57)

As of July 20, 1978, the state has purchased and leased 50 buses, most of which were new. The savings to each participating carrier are significant when taxes and interest payments, which range from $10,000 to $20,000 per year per bus, are deducted from yearly operating costs.

The principal purpose of the loan-lease purchase phase is to encourage carriers to maintain regular route service. The more intra-state regular route miles they undertake, the more new buses they may qualify to lease. However, the minimum carrier requirement to provide no less than 150 miles per day of regular route service has not significantly increased the supply of such service, nor has it made program eligibility a burdensome objective for most carriers.

The mileage criteria set by the MDSH&T for loan-lease qualification have come under some criticism by several Michigan carriers. To qualify for 25% of the total loan-lease fund available in any single year a carrier must operate 75% or more of its total regularly scheduled system miles in Michigan. No criteria is explicitly stated regarding charter operations. Consequently, carriers primarily engaged in profitable charter operations qualify for state loan-lease assistance just as carriers which primarily provide less profitable regularly scheduled service, so long as most of their regularly scheduled service is intrastate. This amounts to state subsidization of profitable charter services, much of which is interstate.

For example, the state has leased four buses to Valley Coach Line. Valley maintains approximately 409 daily regular route miles predominantly on one intercity route, Flint to Sarnia (Canada), which constitutes approximately 15% of Valley's total system miles. The remainder of Valley's operations are charter service. Upon questioning,Mr. David Cupp, Valley Coach Line executive,stated that four new buses could not all be used to provide 409 daily regular route miles, and that the new buses are more comfortable and hence better suited for the longer charter trips, in which this carrier has come to specialize. It was further stated that Valley has maintained regularly scheduled service on this one route at a financial loss, and with state operating assistance, only to qualify for the benefits of the loan-lease purchase fund. Much of the criticism from other carriers competing for the limited supply of state loan-lease funds might be abated if the MDSH&T would require applicant carriers to maintain a specified ratio of regularly scheduled intrastate miles to the total carrier miles, rather than to just total regularly scheduled miles. In this manner, qualifying carriers would be those whose operations are primarily regular route rather than charter.

The concept of the loan-lease purchase program is meritorious, and there are certainly some benefits to Michigan citizens. While the charter service may be interstate, the origin is in Michigan, and it is these citizens who benefit from the more comfortable (and hopefully safer) vehicles. The capital equipment fund, from which the buses are purchased, should remain constant through participating carrier repayment. The

six-year time frame for repayment gives carriers the opportunity to plan advantageously their future capital investment needs. The new buses replace older ones for which maintenance costs are high and resale values are still reasonable.

Facilities-Terminals Development Phase

The most complex and innovative feature of the Michigan Intercity Bus Assistance Program is its facilities-terminals development phase (FTD). The objectives of the FTD phase are (1) to relieve intercity bus carriers of the financial burden associated with maintaining separate non-revenue generating and tax-liable terminal facilities; (2) to house, where possible, all modes of public transportation serving a community in one building, and thereby encourage the convenient use of public transportation; and (3) to relieve municipal governments of the capital costs involved in the construction or renovation of terminal facilities.

Typically, a municipality seeking state assistance under the FTD phase submits to the MDSH&T an application which specifies the location of the proposed terminal, an outline of the architectural objectives of the proposed terminal, and an estimate of the cost of the proposal. The state evaluates the application on the basis of the amount of public transportation services in the applicant community or area. Where only one mode of public transportation will utilize the facility, a minimum of three round-trip schedules per day is necessary for the proposal to be eligible for state funding. (58) Upon approval of the application, the state and municipality enter into a contract that defines the obligations of the municipality to the project and the state.

As of 1978, two FTD projects are completed and operating, one in Kalamazoo, the other in Dowagiac, both as intermodal transportation centers. Though these two contracts differ in funding levels and duration of city obligations, both are shaped around several common requirements. First, the cities were required to purchase the property on which the terminals are located prior to the finalization of the contract. Since both cities receive regular AMTRAK service, they selected sites where existing rail depots were located. Both cities purchased these depots and adjoining properties from the Trustees of the Penn Central Company. Consequently, the project costs in both cities were oriented to renovation of existing facilities rather than construction of new ones. Second, the cities were required to submit, for state approval, detailed plans and specifications for the design of the facilities, which include accommodations for physically limited persons, and procedures for the advertisement and receipt of bids for construction work. Third, the cities are required to maintain and operate the completed terminals in a manner conducive to the continued use of the terminals by the carriers whose operations are housed there.

The cities are to use their best efforts to develop the terminals into self-sustaining entities that pay for terminal maintenance and operation through user fees. The carriers pay a nominal user fee, derived from a 10% commission on their ticket sales. The cities have leased terminal spaces and facilities to other concessions to defray terminal maintenance and operation costs.

Terminal maintenance and operation obligations spelled out in Table 3 are taken from the Kalamazoo and Dowagiac contract portfolios. User fees collected in excess of costs are to be used as follows: 50% shall be rebated

TABLE 3

Maintenance and Operation of the Terminal by the City

The City shall maintain the Terminal and adjacent parking area, as described in Exhibits A and D, in a clean, sanitary, and safe condition. In the performance of maintenance and operation of the Terminal, the City shall provide:

1. Heat
2. Light
3. Water
4. Daily janitorial services to all restrooms and waiting areas
5. Regular waste removal
6. Regular police and fire protection
7. Landscape maintenance
8. Necessary repairs and periodic maintenance to driveways, walkways, parking lots, approaches and heating, cooling, plumbing and lighting fixtures.
9. Appropriate signage
10. Snow removal for all walkways, driveways, approaches, parking lots, and platforms included as a part of the Terminal.
11. Necessary touch-up painting.

at no cost to the Commission until the termination of this Contract pursuant to Section 13.

In addition, the City shall be responsible for any and all:

1. Permits
2. Property and personal liability insurance pursuant to Section 8 of this Contract.
3. Maintenance of all streets adjacent to the Terminal for which the City receives Michigan Vehicle Highway Funds.

and shall bear the related costs pursuant to this Contract.

to the carriers in proportion to their volume of ticket sales, and 50% shall be held in a separate account to be used for additional facility improvements.

It is too early to reach any conclusion on the contribution of this phase of the state subsidy program to the financial condition of the Michigan intercity bus industry. No such judgment could be made on the basis of the two operating FTD projects in Kalamazoo and Dowagiac. The state plans to expand this phase to 15 more cities by 1980 with an estimated authorization of $12,268,682, as shown in Table 4.

Actual savings to the bus carriers resulting from their use of these centers may be only incidental in the final analysis. Clearly, the FTD reached beyond the plight of the intercity bus industry to public transportation in all of its surface modes. The most significant effects of this phase, should it be widely expanded, will be the manner in which it rationalizes transportation planning for future needs. Site locations of state-funded ITC's must consider a wide variety of transportation market demand variables, including extensive analysis of demographic characteristics of a region which contribute to its market demand. FTD planning should be coordinated, where possible, with state and local urban renewal planning. FTD should not only anticipate geographic shifts in population, but should also serve, in part, as an instrument for directing the shift in population in accordance with urban and regional redevelopment programs. The legal and philosophical questions of who should own transportation facilities--the state, the city, or the carriers--should also be considered in future FTD contract negotiations.

TABLE 4

1979-80

INTERCITY PASSENGER TERMINAL
FACILITIES PROGRAM SUMMARY

	Estimated Costs			
	Total	Federal	State	Local
TOTAL	$12,268,682	$ -0-	$12,268,682	$ -0-
Tier Two Projects	$ 6,026,682	$ -0-	$ 6,026,682	$ -0-
Grand Rapids Intermodal Terminal	2,000,000	-0-	2,000,000	-0-
Lansing. Transportation Center	2,551,682	-0-	2,551,682	-0-
Ludington Intermodal Terminal	225,000	-0-	225,000	-0-
Marquette Transportation Center	750,000	-0-	750,000	-0-
Royal Oak Intermodal Terminal	500,000	-0-	500,000	-0-
1978-79 Projects	$ 2,767,000	$ -0-	$ 2,767,000	$ -0-
Midland Transportation Center	250,000	-0-	250,000	-0-
Cadillac Transportation Center	125,000	-0-	125,000	-0-
Grand Haven Intermodal Terminal	392,000	-0-	392,000	-0-
Pontaic Intermodal Terminal	2,000,000	-0-	2,000,000	-0-
1977-78 Projects	$ 3,475,000	$ -0-	$ 3,475,000	$ -0-
Alma Transportation Center	100,000	-0-	100,000	-0-
Battle Creek Intermodal Terminal	2,000,000	-0-	2,000,000	-0-
Benton Harbor/St. Joseph Transportation Center	250,000	-0-	250,000	-0-
Flint Intermodal Terminal	350,000	-0-	350,000	-0-
L'Anse Transportation/Maintenance Center	75,000	-0-	75,000	-0-
East Lansing Intermodal Terminal	700,000	-0-	700,000	-0-

In sum, the FTD may be a significant step toward establishing a physical framework from which more extensive future intermodal transportation services may evolve.

The Michigan Intercity Bus Assistance Program: An Industry Perspective

The carriers interviewed expressed a variety of opinions about the operating assistance phase of the Michigan Intercity Bus Assistance Program. Some felt it was the first step toward nationalization. Others were puzzled by the state's emphasis on adding new bus schedules to high-density routes that carriers are currently serving, quite extensively, at a profit. Others acknowledged that state operating assistance on routes serving small low-demand rural areas would be necessary before they could extend existing regular route service. None of the carriers interviewed knew exactly what criteria the state uses to select specific routes for state contract service. Most of the carriers viewed the operating assistance as purely palliative and not addressing the fundamental problems facing the bus industry.

The loan-lease purchase phase elicited more congruous opinion and praise from the carriers. Though several of the larger-volume carriers were annoyed by the state's preference for smaller, charter-oriented carriers, all favored the continuation and expansion of this assistance phase. The larger carriers predictably favored a higher minimum regular route mileage requirement that would encourage more extensive intrastate regular route performance efforts by smaller carriers. Even after the carriers have purchased all the new coaches they can possibly afford or need, it was noted, they still must face the most pressing problems of survival.

Most of the carriers interviewed feel that the facilities-terminals development phase, to date, has been biased, in site location, toward the railroad. Several carriers expressed doubt as to the efficiency of the intermodal concept, stating that few passengers make use of more than one mode of transportation on any single intercity trip. Only a few carriers see any likely future intermodal cooperation between bus and rail, and then only after railroad bed conditions and rail traffic tie-ups that impair AMTRAK scheduling efficiency are alleviated. Greyhound has profited in its intermodal relationship with the airlines by providing feeder services from Detroit to its Metropolitan Airport, but only because airline schedules, hence passengers, are reliable, and because the airport is not located in downtown Detroit, thus necessitating a widely distributive regional feeder system. AMTRAK's unreliable scheduling and downtown station locations make any profitable feeder relationship with rail improbable.

With the same amount of state money invested in the Kalamazoo ITC, some carriers noted, the state could have rehabilitated a dozen or so bus terminals, the dilapidated conditions of which have discouraged their use by those persons most likely to use the buses, i.e., female college students and senior citizens.

The two carriers that have benefited from the new Kalamazoo and Dowagiac terminals predictably favor the continuation of this state assistance phase. They do not pay rent, beyond commissions from ticket sales, or taxes, both of which constitute savings to these carriers which were not possible when they had to maintain their own separate terminals. One of the effects of the intermodal center in Kalamazoo has been reported to be the intensification of competitive departure times. Ticketed rail passengers leaving

Kalamazoo for either Chicago or Detroit may be virtually assured that a bus for either destination will actually depart shortly after the train was scheduled to depart. Interchangeable ticketing between AMTRAK and Greyhound has facilitated this competitive relationship. Greyhound officials believe that the benefits to the bus industry of this competitive intermodal relationship provided by the FTD phase will become more widely recognized by other bus carriers as the phase is expanded to other cities.

4. LEVEL OF SERVICE ANALYSIS FOR REGULARLY SCHEDULED INTERCITY BUS TRANSPORT

An essential element in the analysis of the potential role of intercity bus transport is an understanding of how service changes relate to revenue and ridership. This relationship can be studied from two different perspectives; by analyzing a single route or city pair on which service changes occur, or by analyzing ridership across cities with different levels of service. Both approaches are included in this section of the report.

Single-Route Analysis

As shown in Figure 1 (Page 39) the ridership trend on the state-subsidized corridor between Saginaw and Chicago was similar to that for the nation as a whole and for the remainder of Michigan. Several factors make this a particularly interesting study corridor, and a more detailed analysis of the ridership in this corridor was made. Between 1974 and 1976, both AMTRAK rail service and the State of Michigan intercity bus subsidy program were implemented in this corridor. The effect of each of these changes is evident in the ridership statistics and should provide some information for future subsidy decisions.

Prior to September 1974 the Indian Trails bus service was the only public ground transportation in most of the corridor, with only the Battle Creek to Chicago portion of the AMTRAK line from Detroit to Chicago competing in that portion of the corridor. During the 1973 and 1974 calendar years, the service offered in the corridor was held constant at 7 round trips per day from Flint to Chicago, although there were some variations in the Kalamazoo to Chicago portion of the corridor. In the summer of 1975, service was reduced by one round trip, and in the fall of that year one additional

round trip was removed. In November 1975 the state subsidy program was initiated and two round trips per day were included in the state subsidized system, with one additional non-subsidized round trip being removed. An additional subsidized round trip per day was added in the summer of 1977, but this route was discontinued in October 1977 at the request of Indian Trails. (59) The number of trips in the corridor is shown in Figure 2.

The subsidized runs provide express service, stopping only at the major cities along the corridor, and at least one run in each direction is non-stop between Lansing and Chicago.

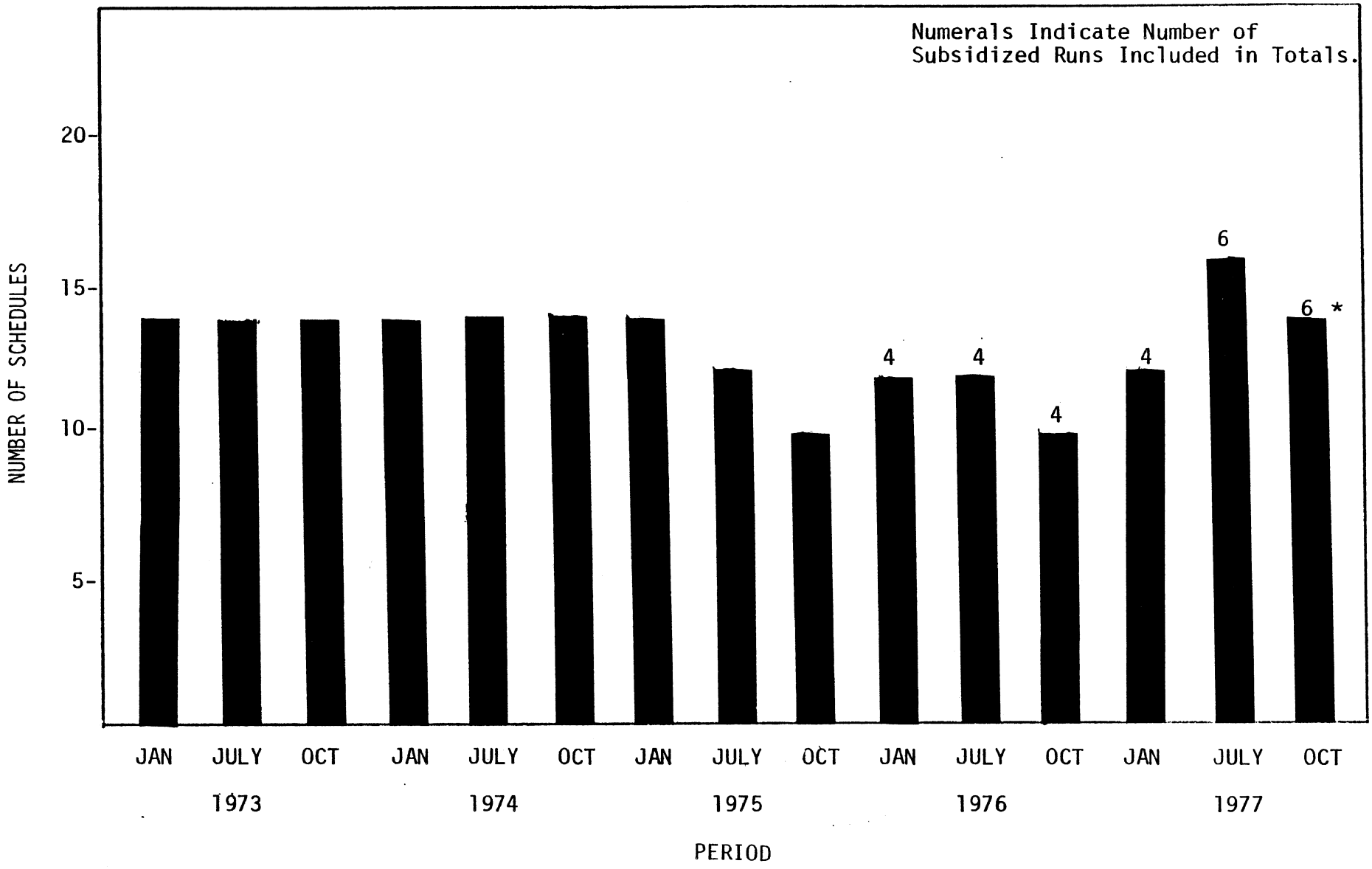
The AMTRAK Blue Water service between Port Huron and Chicago was initiated in September 1974. This service consists of one round trip per day, seven days per week. Since the beginning, the Blue Water line has carried approximately 27 percent of the combined Indian Trails and AMTRAK ridership in the corridor. The impact of the initiation of competing rail service in the corridor is illustrated in Figure 3.

The initiation of the rail service in late 1974 coincides with a marked 18 percent decline in bus ridership in the corridor between 1974 and 1975, as shown in Table 5. (60) Gross revenues for Indian Trails dropped 14 percent for the same period (Table 6). Once equilibrium had been achieved, Indian Trails ridership appears to have nearly stabilized, continuing to lose riders slowly between 1975 and 1977, but showing a slight increase in revenues.

The introduction of the subsidized bus service in 1975 does not appear to

FIGURE 2

Number of Scheduled Runs Between
Chicago and Flint



* 2 Runs Dropped

FIGURE 3
Annual Ridership in the Saginaw-Chicago
Corridor on Intercity Bus and Rail

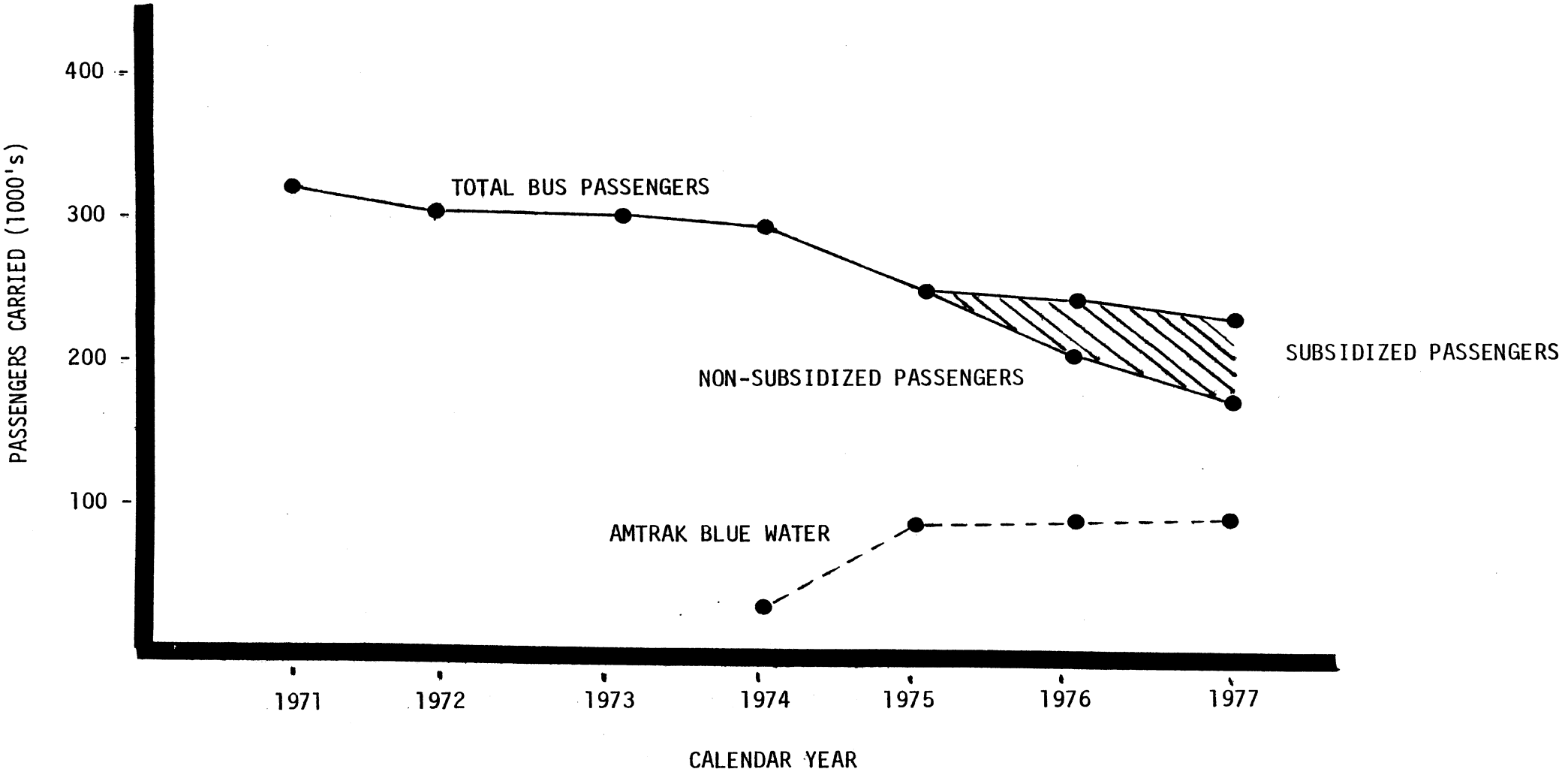


TABLE 5

Annual Riders in the Saginaw-Chicago Corridor

Year	INDIAN TRAILS RIDERSHIP (1000's)						Amtrak Ridership (100's)	
	Corridor	% Change	Subsidized	% Change	Non-Subsidized	% Change	Corridor	% Change
1971	320							
1972	303	-5.2						
1973	300	-1.0						
1974	294	-2.0					23*	
1975	249	-17.9	4*		245		87	
1976	246	-1.3	41		205	-16.6	89	+2.2
1977	232	-5.7	56	+36.7	176	-14.2	90	+1.1

* Partial Year

TABLE 6

Gross Revenue from the Saginaw-Chicago Corridors

Year	INDIAN TRAILS ($1000's)			AMTRAK ($1000's)
	Corridor	Subsidized	Non-Subsidized	Corridor
1972	1634			
1973	1679			
1974	1794			213*
1975	1549	39*	1510	854
1976	1630	374	1256	957
1977	1682	491	1191	1061

*Partial Year

have increased total bus ridership in the corridor. Instead, the riders have made a significant shift from the non-subsidized local runs to the subsidized express runs in the corridor. The subsidized runs realized a 37 percent increase in ridership between 1976 and 1977, while the non-subsidized runs declined by 17 percent and 14 percent from 1975 to 1976 and 1976 to 1977,respectively. Gross revenues on the subsidized and non-subsidized bus runs have shown a similar trend (Tables 5 and 6).

As a final comparison, Table 7 shows the level of State support for Indian Trails and AMTRAK in this corridor. The 1977 subsidy per passenger on the train was $10.79, while the subsidy per passenger on the subsidized bus lines was only $0.56. It must be noted, however, that the majority of the user revenue on these subsidized lines may well be "lost revenue" for the non-subsidized bus service in the corridor.

It does not appear that adding either subsidized bus service or subsidized rail service in the corridor resulted in increased patronage for public transportation.

Statewide Ridership Analysis

The second method of analyzing the relationship between ridership and the levels of service is through a study of the variation in ridership generated at cities for which significantly different service levels are offered. This study was conducted to determine whether the level of service does influence bus patronage, and to quantify this relationship for use in making decisions on subsidy programs.

TABLE 7

State Subsidies in the Saginaw-Chicago Corridor

YEAR	INDIAN TRAILS	PER PASSENGER	AMTRAK	PER PASSENGER
1974	—	—	$ 277,000	$12.00
1975	$ 8,300	$2.19	$1,028,000	$11.82
1976	$74,500	$1.81	$1,083,000	$12.11
1977	$31,600	$0.56	$ 971,000	$10.79

Data on the number of passengers originating at each of 105 cities in Michigan were obtained from Greyhound Lines,[62] Indian Trails, Inc.,[63], and North Star Lines.[64] These cities varied in population from less than 400 to 200,000; and service frequencies varied from one flag stop per day to over 25 departures per day. Geographically, these cities are distributed throughout the state, and range from cities on main line bus routes (Detroit-Chicago) to cities that are isolated from all public transportation other than the bus service provided by these carriers.

In analyzing the variation in ridership across those cities, five levels of service classes were defined. These class distinctions are not intended to be definitional or to represent desired service characteristics. Instead, they were simply a method of stratifying the data into mutally exclusive groupings so that the effect of service frequency on ridership and ridership/unit population could be determined.

The five service levels used in this analysis were:

LOS I - more than 10 bus schedules per day
LOS II - seven to ten bus schedules per day
LOS III - four to six bus schedules per day
LOS IV - two or three bus schedules per day*
LOS V - one bus schedule per day or only flag stop service available

Interpretation of the data should be limited to general trends, since certain assumptions were made in preparing the data for analysis. For one, the data from Greyhound Lines were provided in terms of the dollar value of

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*One city was serviced by two bus schedules per day (at 2:40 a.m. and 6:07 a.m.) and this was classified as LOS V.

sales rather than number of passengers. These data were converted to number of riders by using an average fare of $7.00 per ticket. This number is consistent with the subsidized Greyhound Routes in Michigan, and is believed to be reasonably accurate in the aggregate. However, the use of a single factor undoubtedly overstates ridership in cities with predominantly long trips, and understates ridership from cities where shorter trips predominate.

Secondly, the number of bus passengers and the route frequency is based on data from only the three companies submitting records. Some cities also have service provided by other bus lines and generate bus passengers on these lines. While it is easy to identify these cities, it would be difficult to estimate the ridership on those lines. These cities were omitted from one set of analyses to determine their effect on the conclusion. This lack of information did not have a major effect on the frequency of service variable, since LOS I was defined as 11 or more bus schedules per day, and most of the major cities in the state where competitive service exists were in this LOS class anyway.

Thirdly, the service frequency data was taken at a single point in time (October 1977) while the ridership values were for the entire year of 1977. It is possible that the service frequency was not constant for all cities for the entire year, but this would not be reflected in the data.

Linear regression analyses were run to determine the relationships between ridership and population, ridership rate and service frequency,and ridership rate and LOS. The results of these tests for the entire state and

for geographic regions of the state are shown in Table 8.

The results of these analyses indicated that the service frequency or level of service stratification did little to explain the variance in the ridership rate from Michigan communities. However, the population alone explained the difference in the number of rides generated at each city. The results of the regression analyses for the total sample are displayed graphically in Figures 4, 5 and 6.

Each of the 5 cities with ridership rates of over 200 has a unique explanation for the high rates. The city marked (1) is Calumet, a small (population 1100) city for which a commuter bus line operates from the city to the mining area where the residents are employed. Because the trip is about 30 miles, it is recorded as an intercity trip. The cities marked (2) and (4) are Mackinaw City and St. Ignace,respectively. These two cities, on either side of the Mackinaw Bridge, both serve as departure cities for the ferries to carry people to Mackinac Island (a resort island that prohibites all vehicular traffic).

The city marked (3) is Clare, which is located at the intersection of the two North-South Freeways serving Central Michigan. The city marked (5) is East Lansing. This city's population of around 30,000 was used as the basis for calculating ridership rates, but it is the home of Michigan State University, which enrolls an additional 45,000 students during the academic year.
year.

TABLE 8

Regression Equations for Intercity Bus Riders in Michigan

	Sample Size	Equation	R^2
I. Passenger (R) versus Population (P)			
Total Sample	105	R = 260 + 66 P	.90
Lower Peninsula	87	R = 219 + 66 P	.91
Upper Peninsula	18	R + -527 + 112 P	.86
II. Passengers/100 population (r) versus Service Frequency (F)			
Total Sample	105	r = 10 + 9.8 F	.21
Lower Peninsula	87	r = 15 + 7.6 F	.18
Upper Peninsula	18	r = -8 + 17.4 F	.29
III. Passengers/100 population (r) versus LOS (L)			
Total Sample	105	r = 142 - 27 L	.20
Lower Peninsula	87	r = 117 - 12 L	.17
Upper Peninsula	18	r = 231 - 49 L	.29

FIGURE 4

Riders vs. Population for Michigan Cities

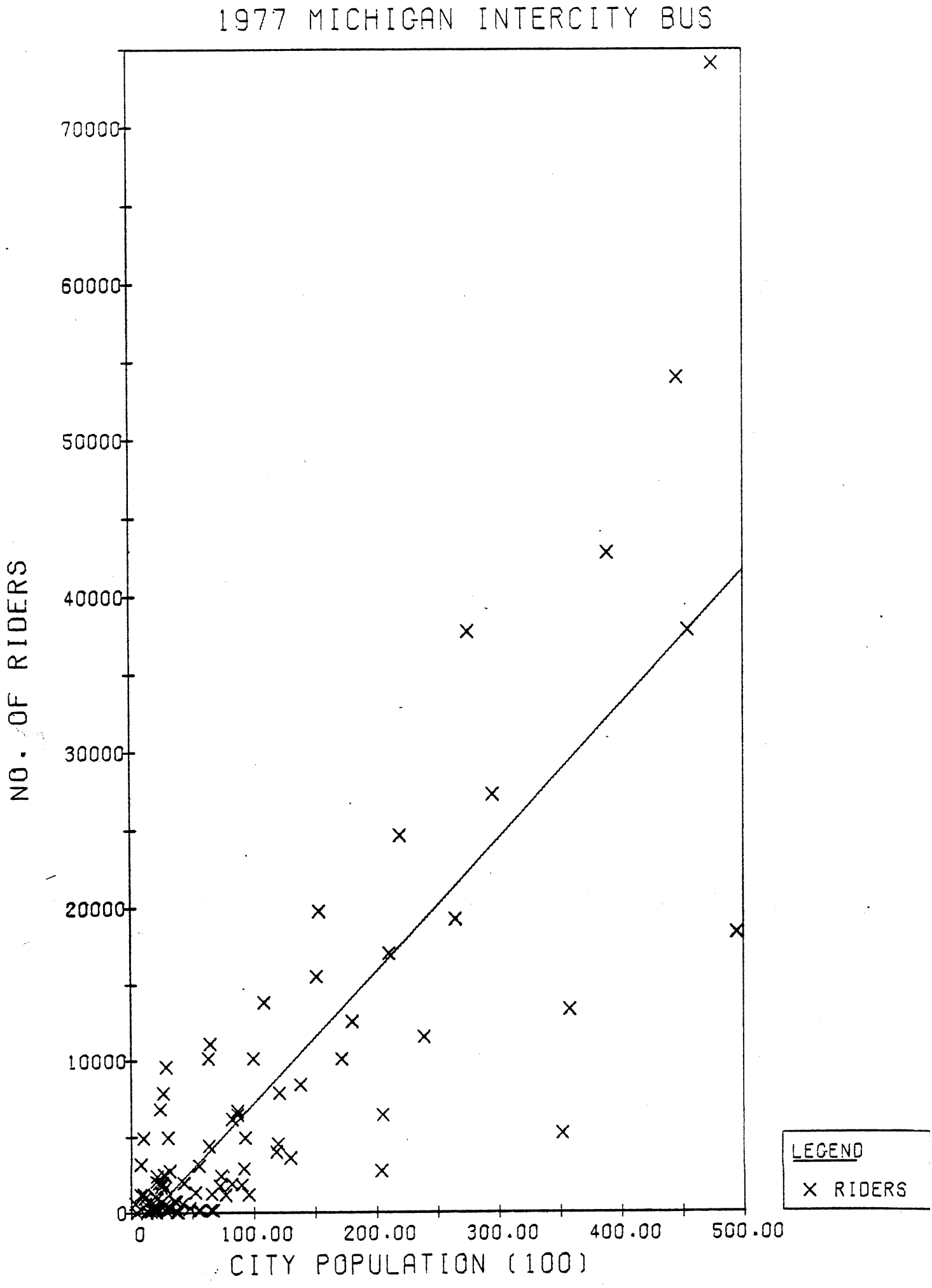


FIGURE 5

Ridership Rate vs. Bus Trips Per Day

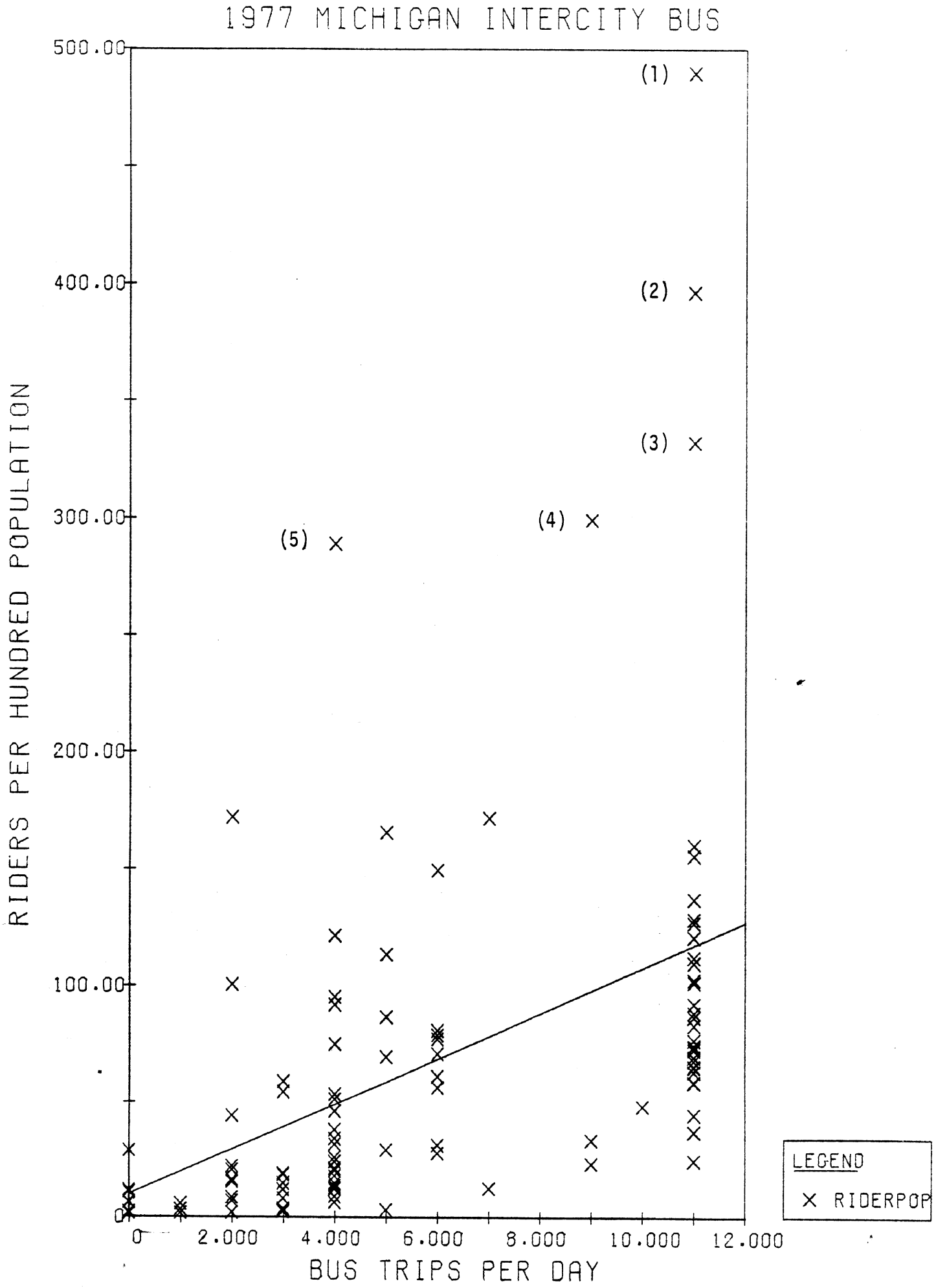
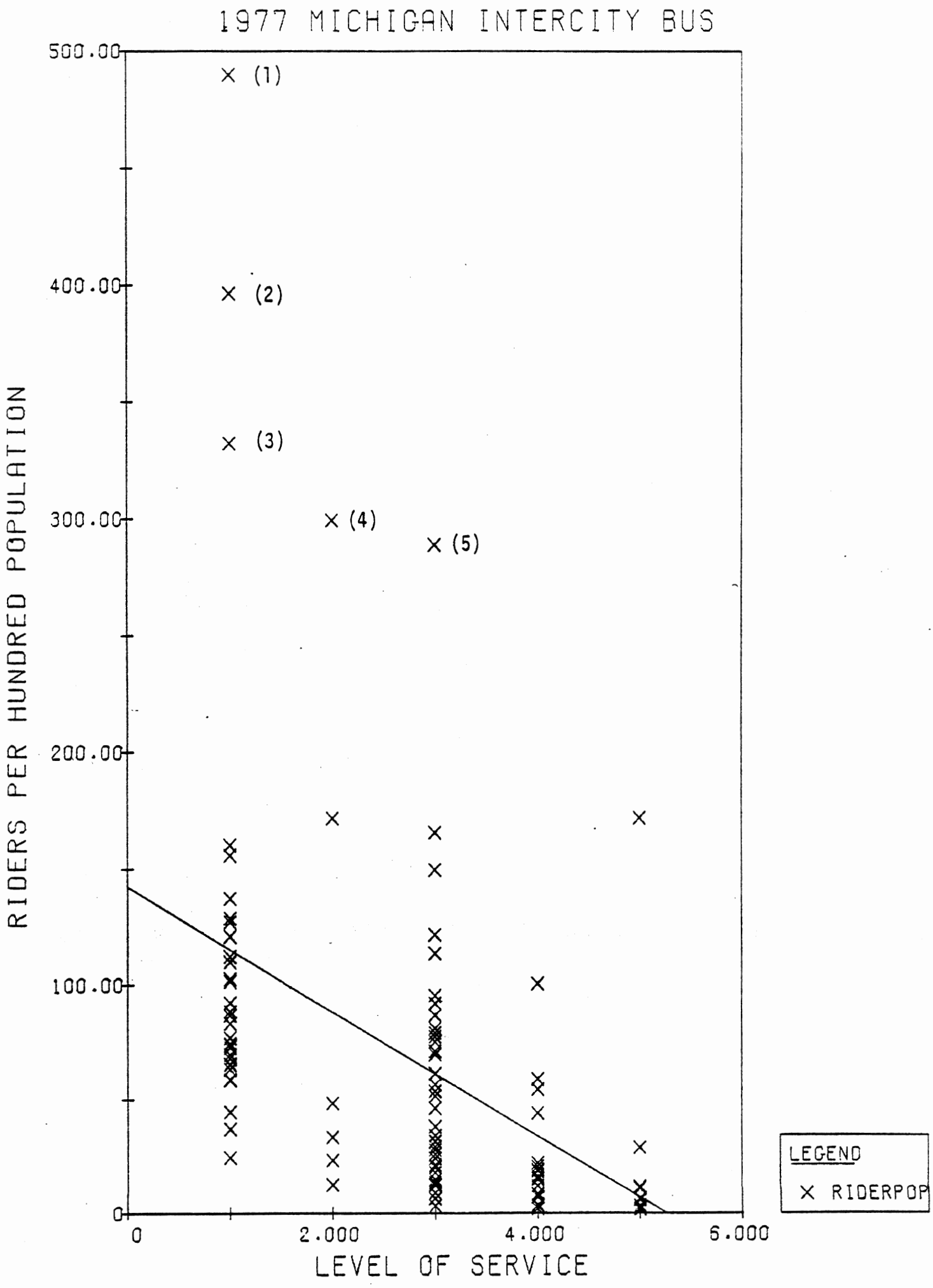


FIGURE 6

Ridership Rate vs. Level of Service



The variation in the ridership rate could probably be better explained if more homogeneous groupings of the cities could be tested independently. The original intent of this study was to use cluster analyses techniques to define these groupings, but resources did not permit this option.

Two stratifications were made, however, and the results are shown in Table 9. In the first stratification all cities with service from other bus lines were omitted from the data set, and in the second stratification all cities which have rail passenger service available were omitted. The correlation was improved somewhat by these stratifications, but are still not very high.

TABLE 9 - Stratified Regression Analyses

Stratification	Regression Equations	n	R^2
Cities without other bus service	R = -79 + 78 P r = 4 + 13 P r = 176 - 35 L	81 81 81	.85 .30 .28
Cities without rail service	R = -5 + 65 P r = 9 + 11 F r = 162 - 31 L	83 83 83	.89 .23 .22

Because the correlation coefficients are low for the regression equations using rates, and because of the data limitations described earlier, any conclusions drawn from the results of this study should be considered preliminary until verified by a more detailed study. However, these analyses do provide information upon which general conclusions regarding the potential ridership for small communities can be made.

The high correlations between riders and population indicate that the need (or at least propensity) for intercity bus travel is as high in small communities as it is in larger cities. There are approximately 66 riders per 100 population per year, independent of the size of the city.

The ridership rate appears to reflect the service provided, at least to some extent. The ridership rate generally increases with service frequency (at a slope of 10 riders/100 population/year for each unit increase in service frequency); and it generally decreases with the LOS definitions used in this study.

5. CONCLUSIONS AND RECOMMENDATIONS

Many social and technical factors are forging a new transportation order in the United States. The process is not a new one. Since the end of World War II the country has experienced the demise of the metropolitan transit systems, the near end of passenger travel by rail, and an acceleration of the number of passengers traveling by personal automobile and commercial airline.

The economic problems exhibited by the motor bus industry are part of this new order in transportation. As the number of personal automobiles increases and the popularity of air travel expands, other modes experience passenger losses. The trends in transportation are not unrelated to growing affluence giving more people the opportunity to use faster and/or more convenient modes. Change of this type is common in modern society.

Change produces modifications in our behavior patterns, and economic adjustments follow. The American industrial system has assumed this reality in the past, but on occasion a stressed industry could convince policymakers that a subsidy was necessary and that tax money should replace private initiative in the name of public necessity and job security. It appears that such an appeal by leaders of the intercity bus industry has already had some success.

Imputed National Goals. Recommendations on public policy must be related to existing practice and current trends. To ensure such continuity, we

have identified certain policy goals, some existing and others being discussed, that would place our recommendations in the context of the nation's transportation system. The "imputed" national goals are as follows:

1. Promote more effective coordination between transportation modes and between agencies that regulate the various transportation modes.
2. Promote an independent transportation system based on business enterprise.
3. Improve the safety record of all transportation modes.
4. Foster a transportation system that permits all citizens to move freely at reasonable cost and at reasonable convenience.
5. Encourage federal agencies to be more sensitive and responsive to the needs and priorities of local communities.
6. Promote a "conservation ethic" with an emphasis on conservation of liquid fuels by fostering transportation modes exhibiting the highest fuel efficiency.

There is no suggestion here that the above goals are a comprehensive listing; nor that all of them are explicit in existing national policies. However, these goals appear in law, in legislative documents, and in other literature in the field of transportation. Many were discussed with local and national experts during this study.

These goals are used in this paper to capsulize a great deal of data and to suggest a direction for further policy development. The goals are related to critical factors extant in the bus industry, a strategy related to energy, local planning, level of service, and maintaining industry viability.

This study found much data supporting the assertion that many bus routes are not profitable. Bus company operating ratios are approaching 100, a point where expenses equal revenue, and on some routes operating ratios

already exceed 100. Inflation is often cited as a major cause for higher costs. Such costs as wages, equipment (buses), fuel, and insurance rates are cited as particularly important factors in the rise of expenses. Income is decreasing because of "rigid price regulation" and fewer passengers riding the buses.

The clientele served by this industry must be given serious consideration in the formulation of new policies. Generally, the industry serves passengers in lower income brackets: minorities, senior citizens, and college students. But other statistics on the industry suggest its importance to the national transportation system and its significant contribution to the national economy. It served 15,000 communities and carried 340 million passengers in 1976. Also in 1976 the industry contributed $1.2 billion to the gross national product, employed 46,000 people, and spent about $100 million on new bus equipment.(65)

Since its origin, the automobile has been a competitor of the intercity bus industry. Today, more than 83 percent of our households have one vehicle, and more than 32 percent have two. (66) Such developments constantly drain passengers from the bus lines, especially in the corridors between major metropolitan areas.

Thus, with the automobile everywhere, AMTRAK subsidies in important market corridors, and airlines available for longer trips, it is clear that the bus industry does not have a monopoly over intercity transportation. This lack of a market monopoly led one recent study of the industry to suggest

it be deregulated.[67] Deregulation, however, may not be a prime objective of the industry. Recent recommendations to the Congress for assistance included at least six different items; only one referred to "rate flexibility" or less regulation. In addition, the larger and well-established intercity bus firms suggest that deregulation would invite chaos into the industry and cause duplicity in the better markets and therefore make operations less efficient.[68]

Selecting Policy Options. The above discussion contains a summary of intercity bus transportation, with some considerations relating the current "normal" developments in that industry to transportation patterns evolving in the nation. New policies, technology, and social change are already affecting transportation patterns. The question facing the nation is this: How can such change be introduced into the society with a minimum of dislocation to people and to industry?

In addition to the "normal" evolution of the transportation industry and its accompanying problems of adjustment, the nation and the world are anticipating petroleum shortages between now and the end of the century. This single factor may have more influence on what happens in transportation in general, and in the bus industry in particular, than any other factor discussed here. The demise of petroleum as our liquid fuel will be directly felt in terms of price rises and distribution priorities. The timing and the impact of these events are as yet unknown in precise enough terms to develop policy. Also, just what substitute for petroleum will be found is still unknown. If the substitute is liquid and can be handled in

a manner similar to gasoline, the adjustment will be relatively smooth. If, on the other hand, the substitute cannot be handled in a manner similar to gasoline and requires modification of the distribution system as well as redesigned power systems, then major dislocation is expected over a longer period of time.

We recommend that policymakers consider "normal" transportation problems in the short range, and delay consideration of this "abnormal" problem until its implications are better understood. The short range in this instance will probably extend to the mid-1980s. Technical reports on petroleum supplies vary, but most predict the full weight of the problem to strike near the turn of the century.(69)

However, the nation must prepare itself to make policy shifts in response to this "abnormal" development. The Congress should commission appropriate studies related to the anticipated shortfalls and possible depletion of petroleum supplies. Such studies should be commissioned following precise identification of the information required for policy decisions. The studies must include energy, transportation, economics, and political and social implications. As those studies are being made, the nation must contemplate adjustments that are required now.

In this study we were asked to examine the intercity bus industry and suggest some policy options in consideration of certain economic conditions evolving in the industry. Several options were discussed in the introduction,

including:

1. Increase the intercity bus percentage of the passenger market.
2. Expand the charter and small package delivery services.
3. Provide external subsidies from state and federal government.
4. Reduce or eliminate service on the low-patronage routes that do not generate sufficient revenue to meet costs of the operation.

The recommendations below include combinations of all the above options.

Local Problems, Local Planning. The United States Bureau of the Census figures identify communities outside the Standard Metropolitan Statistical Areas (SMSA) by population categories. The chart on the following page identifies the number of communities in the nation which are of interest to this study for analytical purposes.(70)

Both the level of service problem and the problem of viability of the intercity bus industry are critical to rural areas outside the SMSA. Since our study is essentially concerned with these three factors, our recommendations focus on the more than 6,000 communities under 25,000 lying outside the metropolitan areas. The discussion below is premised on the unique characteristics of each community.

This study of intercity bus service has centered on rural areas in Michigan. The study shows that a large number of bus routes and bus companies are having difficulty showing a profit when conducting regular route service between various small communities. But even if they were profitable, regular route service may not provide for the needs of rural people. Different communities have different transportation services and perhaps different

Distribution of Small Communities by Size

EXHIBIT 1-2. --DISTRIBUTION OF SMALL COMMUNITIES BY SIZE

Population size	Number of communities outside SMSA's	Percent distribution
1,000 to 2,500	3,232	53.1
2,500 to 5,000	1,425	23.4
6,000 to 10,000	396	14.7
10,000 to 25,000	538	8.8
Total	6,091	100.0

	Number of communities[1]	Percent distribution
1,000 to 2,500	4,768	46.5
2,500 to 5,000	2,274	22.2
5,000 to 10,000	1,824	17.8
10,000 to 25,000	1,378	13.5
Total	10,244	100.00

1 Excludes communities in Alaska and Hawaii

Source: U.S. Census of Population, 1970

needs. The fact that there is significant variance in ridership as a function of service frequency may be interpreted to indicate that not all communities need similar service.

If transportation needs are specific to each community, this would suggest that each community is best able to identify its own requirements. If funds for local surveys were made available, each community could determine its needs and such needs could be integrated into a regional plan. Once the dimensions of the needs are understood, responsibility for supplying them could be undertaken by a variety of transportation modes and operators, including the bus industry.

The local surveys and the regional plans would identify the most appropriate transportation level-of-service for minorities, senior citizens, the handicapped, and students. Such transportation service, "tailored" to community needs, may in fact improve service in rural areas and at the same time provide a data base for providing needed subsidies.

In discussions of "level of service," three concepts were found useful: "basic mobility," "adequate transportation," and "out-of-the-farebox service," Each identifies a certain level of transportation service, and all have relevance to recommendations made in this study.

"Basic mobility" is a minimum service designed to provide essential transportation needs of a citizen,such as shopping, health care visits, local recreation, and visits to friends or relatives. It is a service that must be available to sustain health and life. For those

who have no available personal transportation, this basic need must be provided by society and a certain subsidy assumed.

"Adequate transportation" includes basic mobility but adds dimensions such as travel needs for vacations, visits to friends and relatives in distant communities, or just traveling at one's convenience for personal reasons. This service implies ability to reach urban communities from rural communities with a certain convenience and at a reasonable fare. What constitutes "adequate" service is determined by a given community in terms of passenger needs. It is not defined by bus operators. In some instances this service will be unprofitable, and therefore a subsidy may be required.

"Out-of-the-fare-box service" is the regular route service of bus operators where the routes are profitable from fares. Such service is measured by the operating ratio applied to routes. If the ratio exceeds 100, the route is not profitable and may be considered for elimination by the bus operator.

Using these concepts and based on the results of the Michigan intercity bus subsidy program, it is the recommended that no subsidies be assigned to companies operating for profit until local surveys have been conducted and regional plans developed that indicate that a subsidy is warranted to provide "adequate" service to the community. The subsidy, therefore, would be tied to existing records of the need for service coming from a source other than the bus operator. Subsidies should be allocated only in response to an approved application justifying the grants for specific purposes. All subsidies directed to the bus industry should be tied directly to specific service responsibilities.

One implicit goal of national policy is to maintain the viability of the intercity bus industry. The most appropriate method appears to be that of fostering creative enterprise on the part of bus companies. For example, the "regular route" bus lines may no longer be viable in rural areas. Communities still need service, but perhaps a "tailored" service of quite another kind. The bus companies should be encouraged to seek such new but profitable forms of rural community transportation.

Where profitability cannot be maintained, government and the industry should consider the use of "low fares" for certain users. The objective would be to increase passengers by providing subsidies proportional to the increased ridership.

Regular route service may not be the ideal for every market. The system was devised for larger population centers and should not be expected to function well in areas having few people. Other devices or forms may be profitable where regular routes are not. Our society has become complex, and our responses to varied transportation needs in different communities must be imaginative, ingenious, and creative. No single response can be expected to satisfy the varied transportation needs of all communities.

Summary of Policy Recommendations. The following list summarizes the recommendations made in this study.

1. Give immediate policy attention to those problems stemming from "normal" changes accruing from technical developments and shifts in transportation preferences.

2. Delay, until additional studies have been made, decision in those policy areas associated with an "abnormal" development, namely, liquid fuel shortages and/or substitutes.

3. Provide funds for local communities to identify transportation needs, with such needs being integrated into regional transportation plans.

4. Subsidize service to provide "basic" mobility and "adequate transportation" for citizens living in rural communities consistent with these regional plans.

5. Limit the use of direct operating subsidies to maintain or expand regular route service on a uniform statewide basis.

Recommendations on the Michigan Intercity Bus Assistance Program:

Operating Assistance Phase

It is clear from the findings of this study that this phase of the Michigan Bus Assistance Program has failed to achieve its two principal objectives. First, ridership has not increased, as anticipated by UPTRAN, on high-density intercity routes where new regularly scheduled services have been added to existing levels of service. Second, carriers contracted to provide new regularly scheduled services on low-density routes where no service was previously provided have not continued to serve those routes after completion of the state's subsidy contract, as originally envisioned.

Substantial restructuring of the operating assistance phase is recommended that would strengthen operating ratios on existing service routes without encouraging over-extension by providing service where no significant demand for such service exists.

States should encourage rural communities within a small geographically contiguous region to organize local (inter-community) transit collectives.

The state might agree to provide appropriate vehicles (e.g. vans, station wagons, mini-buses, etc.) and operating assistance. This bus transit could be demand-responsive on a community scale and flexible to local rather than nationally-oriented scheduling needs. This modification in the program on an experimental basis would also enable state planners to pretest specific travel patterns in rural areas, should subsequent public transportation investments in such areas be anticipated.

Loan-Lease Purchase Phase

This most popular phase of the Michigan Bus Assistance Program should continue until the capital assistance fund is exhausted. The following modifications are recommended:

> Designate a percentage of the capital assistance fund for rural transit collectives (outlined above) whose eligibility is based on viability of their regional rural bus transit plans.

The remaining capital assistance funds should be allocated to certificated common carriers. Eligibility requirements (regular intra-state route mileage) should be increased as a percentage of total carrier system miles, rather than as a percentage of total system regular route miles. These modifications would encourage the carriers to use some of the new coaches for regular route service as originally intended.

Facilities-Terminal Development Phase

Factors that influence selection of FTD site locations should be examined and clarified. Presently, only cities enjoying regular bus and passenger rail services have been approached by the State and encouraged to apply

for FTD assistance. This bias toward intermodal orientation neglects communities not receiving rail services, but for which improved bus facilities are viewed as a prerequisite to increased patronage. The state should allot a percentage of FTD funds for bus station improvements in larger cities and construction of minimal passenger shelters in small communities, especially those that would be served by the proposed regional rural transit collectives.

The intermodal transportation concept should also be examined. The state should establish a study commission to investigate the extent to which intermodal transportation is feasible in Michigan. This commission would (1) make an inventory of all existing facilities, modal capabilities, and services; (2) assess demand generators among major population centers or rual regions by mode, and assess current routing; and (3) propose an intermodal transportation plan for the State of Michigan that specifies the limits and optimization of intermodal transportation in the state.

Attachment C

ANNOTATED BIBLIOGRAPHY OF SELECTED DOCUMENTS ON THE INTER-CITY BUS STUDY

American Bus Association: America's Number One Passenger Transportation Service. American Bus Association, Washington, D.C. 1976.

Essentially an annual report, representing the bus industry's own view of its current operation. Contains a multitude of statistics dealing with ridership, service, fuel consumption and cost, energy, etc. Also looks at the problems of subsidized competition and the bus industry's need for aid.

Booz, Allen, Applied Research. Project Super Bus; High Capacity Conceptual Design (prepared for: Urban Mass Transportation Administration, DOT) Washington, D.C., 1974.

This study looks at four designs for high-capacity busses. Two of the designs, articulated vehicles and double-deck vehicles, are viewed as having potential and playing significant roles in public transportation.

California, State Transportation Board. Recommended Statewide Transportation Goals, Policies and Objectives. Sacramento: 1977.

Discusses California transportation issues, goals, and legislation. Makes policy recommendations and implementation suggestions. Limited discussion of intercity bus industry. Does say that ..."it may be more cost-effective to subsidize the private operators for increased service rather than to expand the highway capacity." (p.157) (I.L.L.).

Iowa State University Engineering Research Institutes Inter-city Passenger Carrier Improvement Study; prepared for Iowa Department of Transportation. Ames: 1977.

Researches and makes recommendations for the improvement of Iowa's intercity bus industry. Also discusses the role of third-level air carriers. Provides guidelines for state and local subsidies. Also analyzes the potential for a system of express intercity bus routes. Mostly pertinent to Iowa only. (I.L.L.)

Michigan Department of State Highway and Transportation. Michigan Inter-city Bus Study. (77).

Ridership and travel characteristics. On board survey--passenger profiles and statistical information. Charts and appendicies. Deals only with Michigan.

Rechel, Ralph. Transportation Policies & Energy Conservation, prepared for the Conservation Foundation, Washington, D.C.: 1974.

A staff paper examining the federal government's role in U.S. transportation system. Include a description of federal agencies and programs in transportation, an analysis of federal transportation expenditures, and an overview of current national transportation policy issues.

U.S. Congress. Senate. Committee on Commerce, Science and Transportation. Subcommittee on Surface Transportation. Financial Condition of One-inter-city Motor Bus Industry; Hearings..., held July 16, 1977. 95th Congress, 1st Session. Washington, D.C: Government Printing Office, 1977.

Statement by members of the motor bus industry. Includes the NAMBO proposal for a Bus Revitaliztion Act.
Also contains recommendations for improved coordination between AMTRAK and the intercity bus industry.

U.S. Department of Transportation. Transportation Systems Center. AMTRAK; Use of and Impact on Inter-city Bus Service; by Laurence Leist. Cambridge, Mass.: 1976.

Discusses the difficulties encountered in trying to quantify this relationship. Mostly emphasizes (1) schedule coordination, (2) promotion techniques, (3) ticket and fare coordination, (4) problems with getting pertinent information to passengers.

U.S. Department of Transportation. Energy Conservation in Transportation; U.S. Government printing Office, Washington, D.C.: 1978.

A report from DOT outlining what it is doing to help reach the national goal of a 10% fuel reduction by 1985, as set by the National Energy Plan. Basically DOT sees three ways of conserving: improve energy efficiency, shift a portion of travel to energy-efficient modes, and travel less.

U.S. Department of Transportation. Transportation Systems Center. Increasing the Attractiveness of Land Based Common Carrier Transportation in the U.S.: A Study of the Inter-City Bus and Passenger Train Industries with Recommendations for the Institution of Improved Intermodal Service; by Laurence Leist, Cambridge, Mass.: 1975.

Deals with intercity bus and passenger train industries. Makes recommendations for the institution of improved intermodal service, i.e., reservations, ticketing, transfers, fare structure.

U.S. General Accounting Office. U.S. Transportation System--Federal Government's Role and Current Policy Issues, Staff Papers, Washington, D.C.: 1975.

A discussion of all the government agencies involved in transportation regulation. I.C.C.'s jurisdiction and how other departments have authority to regulate other facets of the inter-city bus industry, i.e., safety and pollution.

U.S. Interstate Commerce Commission. Bureau of Economics. The Inter-city Bus Industry: A Preliminary Study. Washington, D.C.: U.S. Government Printing Office, 1978.

Discusses the history, development, and present structure and status of the intercity bus industry. Looks at the effect of subsidies to AMTRAK and air carriers. It identifies areas for further research and makes recommendations for improving the understanding of the nature of the inter-city bus market and the industry that serves it.

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Footnotes

1. American Bus Association, America's Number 1 Passenger Service: ABA 1978. Hereafter cited as Passenger Service.

2. Interview with Fred Mueller, Vice President, American Bus Association, Washington, D.C., September 15, 1978.

3. Interview with Mr. James Corcoran, Director of the Washington Office, Greyhound Corporation, September 15, 1978.

4. Michigan Intercity Bus Study: Ridership and Travel Characteristics. Michigan Department of State Highways and Transportation, Lansing, Michigan, 1977.

5. The Intercity Bus Industry: A Preliminary Study, Interstate Commerce Commission, Bureau of Economics, Washington, D.C., 1978.

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7. U.S. Department of Transportation working papers, September, 1977.

8. U.S. Congress, Senate, Committee on Commerce, Science, and Transportation, Hearings...on Financial Condition of the Intercity Motor Bus Industry, 95th Congress, 1st session, June 16, 1977. Washington D.C. GPO, 1977. Various witnesses for ABA. Hereafter cited as Bus Industry Hearings.

9. Passenger Service, op. cit.

10. Ibid., p. 1.

11. Ibid., pp. 26 and 28.

12. Interview with Fred Mueller, op. cit.

13. Passenger Service, op. cit.

14. Passenger Service, op. cit., p. 2.

15. Interview with James Corcoran, op. cit.

16. Bus Industry Hearings, op. cit., p. 66.

17. Interview with Ernest R. Olson, Director, Bureau of Economics, ICC, Washington, D.C., September 15, 1978. This procedure is called "special permission."

Footnotes, cont.

18. Bus Industry Hearings, op. cit., p. 56.

19. Passenger Service, op. cit., p. 3.

20. Bus Industry Hearings, op. cit., p. 42.

20a. U.S. Congress, House, Federal Public Transportation Act of 1978 95th Congress, 2nd session, H.R. 11733. 1978. (Public Law 95-599).

21. U.S. Congress, House, Energy Production and Conservation Tax Incentive Act, 95th Congress, 1st session, HR 5263, 1977. (Public Law 95-621)

22. Bus Industry Hearings, op. cit., p.86.

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25. U.S. Congress, House, Committee on the Budget, Hearings...on Economic Aspects of Federal Regulation on the Transportation Industry, 95th Congress, 1st session, July 13-19, 1977. Washington, D.C. GPO, 1977. p. 317-326.

26. Bus Industry Hearings, op. cit., p.11.

27. Ibid., p. 12.

28. Ibid., p. 2.

29. Ibid., p. 12.

30. Ibid., p. 13.

31. Ibid., p. 14.

32. Ibid., p. 15.

33. Interstate Commerce Commission, Bureau of Economics, The Intercity Bus Industry, Washington, D.C.: GPO, May, 1978, p.v.

34. Interview with Mr. R. Siedler, Indian Trails, August 9, 1978.

35. Ibid

36. Telephone interview with Hugh Rouch, Public Service Commission, September 19, 1978.

37. Interview with Robert Siedler, Vice President of Indian Trails of Michigan, August 9, 1978.

Footnotes, cont.

60. All data for Indian Trails obtained from Mr. Seidler.

61. All data for AMTRAK obtained from Michigan Department of State Highways and Transportation.

62. Greyhound ticket sales data obtained in memo from Mr. Kenneth White, Director of Operations Program, October 1978.

63. Indian Trails passenger data obtained in a memo from Mr. Robert Seidler, October 1978.

64. North Star Lines passenger data obtained in a memo from Mr. G. J. Van Fossen, Vice President, October 1978.

65. Passenger Service, op. cit.

66. U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States 1977 (98th edition). Washington: G.P.O., 1977, p. 462.

67. U.S. Senate, Committee on Commerce, Science & Transportation, Intercity Bus Service in Small Communities. Washington: G.P.O., 1978. See Proposals for Regulatory Reform, pp. 31-33.

68. See the discussion above, pp. 14-17.

69. See for example Carroll L. Wilson, editor, Energy: Global Prospects 1985-2000, A Report of the Workshop on Alternative Energy Strategies. New York: McGraw Book Company, 1977. See Part I, pp. 3-46.

70. Intercity Bus Service in Small Communities, op. cit., p. 38.

Footnotes, cont.

38. Michigan Study, op. cit.

39. Intercity Bus Industry, op. cit.

40. Ibid, pg. 29.

41. Michigan Study, op. cit. p. 9.

42. Intercity Bus Industry, op. cit.

43. Michigan Study, op. cit.

44. Intercity Bus Industry Study, op. cit.

45. Michigan Study, op. cit.

46. Intercity Bus Industry, op. cit.

47. Michigan Study, op. cit.

48. ICC Study, op. cit., p. 136.

49. Michigan Department of State Highways and Transportation Legislative Program Book; 1978, p. 127.

50. Michigan Department of State Highways and Transportation testimony before the Subcommittee on Surface Transportation, Committee on Commerce, Science and Transportation, U.S. Senate, June 16, 1977.

51. Legislative Program Book, op. cit., p. 38.

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53. U.S. Senate hearings, op. cit., p. 88.

54. Michigan Public Service Commission Annual Reports, 1977.

55. Ibid, 1976; 1977.

56. Statement of Charles E. Webb, President NAMBO, presented to NTPSC, June 24, 1977.

57. Legislative Program Book, op. cit., p. 39.

58. Ibid, p. 11.

59. Obtained from Mr. Robert Seidler, Indian Trails Inc., Oct. 1978.