

Final Report

IMPROVING RURAL TRANSIT EFFICIENCY

BY

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SUMMARY OF PRINCIPAL FINDINGS AND CONCLUSIONS

This study of rural transit service efficiency was initiated as cooperative effort between the Connecticut Public Transportation Commission (CPTC), Connecticut Department of Transportation (CONN DOT) and the six rural public transit districts. It was based on a review of system performance data furnished by CONN DOT and discussions with the individual transit districts. Its objectives were to (1) review system operating data, (2) assess system performance, (3) suggest ways to improve efficiency and (4) identify alternative state-local funding arrangements assuming a curtailment of federal funds.

Principal findings, recommendations, and conclusions are as follows:

1. Connecticut's six rural public transit systems-- Estuary, Housatonic (Redding) Northeast, Northwest, Torrington, and Windham carry nearly a half million riders each year. They produce a valuable service to people without access to cars-- mainly elderly on work, shopping or medical trips. They vary widely in performance as a result of differing service territories operating policies and management practices.
2. The systems generally carry fewer riders per bus mile and cost more per rider than systems in other states.
3. Comparative analyses show that the Housatonic and Northeast demand responsive systems perform poorer than 80% of the systems in the United States. The Northeast fixed route also falls short of productivity criteria for Connecticut. Fare adjustments are needed on all systems to keep pace with inflation and keep cost recovery ratios above 0.15 for demand responsive systems and 0.20 for fixed route systems in the years ahead.
4. Several specific service concepts should be considered to improve productivity of the Housatonic and northeast systems.
 - The Housatonic demand responsive service should be made more productive or be curtailed. One possibility is to integrate it with service for Ridgefield.
 - The Northeast demand responsive service should be restructured to provide tighter service areas. Alternate day service in Northern and Southern parts of the region, (or alternatively two vehicles each with its own service area) should be considered. If this service does not prove more productive, consideration should be given to having the service provided by a major health care agency on a weekly or twice-a-week basis.
 - The Northeast fixed route should operate 2 or 3 times a week rather than each weekday. CONN DOT ridership surveys (October 1987) found that the route is lightly patronized, especially in the southern section.

5. Each transit district should make market surveys, in association with its various social service agencies to identify the existing and unmet latent ridership.
6. Fifty percent of the costs of service is produced by UMTA, while the remaining 50% is covered by the State (33%) and the local communities (17%). If federal funds are cut back, the State should cover at least 75% of the costs.
7. The State should work closely with the local transit districts to encourage operating efficiency. It should consider a financial incentive plan that increases the State's contribution if specific performance guidelines are met (ie. passengers per bus mile or passengers per bus hour).
8. House Bill Number 5046, April, 1988 calls for a pilot program of interdistrict transit service to better serve the elderly and persons with disabilities. Two projects should be considered as part of this program.
 - A fixed-route service from Northeast Connecticut to Norwich, New London and Groton via I-395 and Route 12.
 - A fixed route service from Willimantic to Danielson via Route 6. One option to be explored is subsidizing Bonanza Bus Lines to provide local service on their Hartford-Providence runs.

PART I

INTRODUCTION

BACKGROUND

Connecticut's six rural public transportation systems carry nearly a half million riders each year. These systems have been funded under Section 18 of the Surface Transportation Assistance Act of 1978. Fifty percent of their costs is covered by UMTA while the remaining fifty percent is covered by the State (33%) and the local communities (17%). State subsidy averages \$1,000,000 annually.

These systems provide a valuable community service for those people without access to cars. Elderly people--on work, shopping or medical trips--constitute most of their riders.

The six systems--Estuary, Housatonic (Redding), Northeast Connecticut, Northwest Connecticut, Torrington, and Windham provide both fixed route and demand responsive services. Service productivity varies widely as a result of differing service territories, operating policies and management practices.

Both the transit districts and CONN DOT recognize the need to improve the efficiency of these services, especially if Section 18 federal funding is reduced or eliminated.

Within this context, many questions have been raised: What is the proper mix of fixed-route and demand responsive systems? What productivity criteria should be established for each type of service? How well do the systems reflect these criteria? What opportunities exist to improve service efficiency? How might communities and/or the State make up the shortfall if federal funding

is cut? How might the State-local subsidy formula be modified to provide incentives for greater efficiency?

Both the Connecticut Public Transportation Commission (CPTC) and the Connecticut Department of Transportation (CONN DOT) desire a careful and objective assessment of these rural transit issues and opportunities. This need underlies this study.

STUDY OBJECTIVES

This study analyzes the existing rural or "non-urbanized" transit systems in Connecticut. It reviews their operations, analyzes their performance, and suggests areas for improvement. It sets forth guidelines and indices for when specific services are appropriate. And it suggests alternative State-local financing arrangements.

Its specific objectives were to :

- (1) review system operating data,
- (2) assess system performance,
- (3) suggest ways to improve efficiency, and
- (4) Identify alternative State-local funding arrangements assuming a curtailment of federal funds.

STUDY APPROACH

The study was initiated as a cooperative effort with CPTC, CONN DOT and the six rural public transit districts. Meetings were held with the districts at the outset of the study to review interim findings. Comments and suggestions received were incorporated wherever possible.

The study was performed in the following sequence:

1. Pilot meetings were held (1986) with representatives of the six rural transit agencies to identify their key concerns.
2. Relevant materials on rural transit operations in Connecticut and elsewhere were assembled. These included CONN DOT population data and Section 18 Operating Reports for 1986.
3. The operating and financial performance of the six transit agencies were reviewed.
4. Service performance guidelines and indices were prepared for both fixed route and demand responsive services, drawing upon national criteria.
5. Service implications resulting from the comparative performance analyses were identified.
6. Financing opportunities-- assuming changes in federal subsidy levels-- were developed.
7. Findings were reviewed with representatives of the transit districts. The comments received were incorporated, as appropriate, into the project report.

The analyses were based on 1986 operating and financial statistics furnished by CONN DOT's Bureau of Planning. Since 1986, several districts have reported service changes and improved operating efficiency. In 1988, the Northwestern Connecticut and Torrington services were merged. Nevertheless, the findings and recommendations provide a useful planning guide for all study participants.

II EXISTING TRANSIT OPERATIONS

Connecticut's six rural transit systems have evolved over the past 10-15 years in response to the specific mobility needs of each area. Consequently, they vary in type of service, fleets operated, riders carried, and financial performance. This chapter reviews their existing operating and financial performance and shows how they compare with other rural systems and national experience. It suggests guidelines for Connecticut's rural transit systems, and shows how the six systems meet these guidelines. Finally, it suggests possible changes in operating practice to improve financial performance.

OVERVIEW OF OPERATIONS

Salient characteristics of Connecticut's six rural transit systems are shown in Table 1. Collectively, these systems served 47 communities with over 300,000 people, carried nearly 300,000 riders, and aggregated almost 800,000 bus miles in 1986.

The systems varied widely in terms of population served, passengers carried, and types of service provided.

- The Estuary Transit District served 9 communities with over 50,000 residents, carried nearly 45,000 passengers, and operated over 108,000 bus miles. Its fixed-route connects 3 towns; it operates twice a week in the winter and three times a week during the summer. Its demand-responsive service operates each week-day.

- HART, (The Housatonic Area Regional Transit District) operates a single demand responsive service weekdays in Redding. This service carried nearly 4,000 passengers in 1986.

- The Northeastern Connecticut Transit District serves 8 communities with over 67,000 residents. Its commuter, fixed route, and demand responsive services operate each weekday. In 1986 they carried almost 60,000 passengers and operated over a quarter million bus miles.

- The Northwestern Connecticut Rural Transit serves 100,000 people residing in 18 towns. In 1986 it ran 4 fixed route services, one/each weekday and the other three once a week. Since then, two of the services have been converted to demand- responsive operations. Overall, the system carried about 15,000 people in 1986, and ran nearly 40,000 bus miles.

TABLE 1 - CHARACTERISTICS OF REGIONAL TRANSIT DISTRICTS - 1986

ITEM	DISTRICT					TOTAL
	ESTUARY TRANSIT DISTRICT	HOUSATONIC AREA REGIONAL TRANSIT DISTRICT (1) (HART)	NORTHEASTERN CONNECTICUT TRANSIT DISTRICT	NORTHWESTERN CONNECTICUT RURAL TRANSIT	CITY OF TORRINGTON	
Towns Served	9	1	8	18 (2)	1	47
1985 Population (served)	51,840	7,830	67,130 (5)	102,020 (2)	31,290	301,160 (6)
Type of Service	Fixed Route Demand Responsive	Demand Responsive	Commuter Service, Fixed Route Demand Responsive	Fixed Route (4)	Fixed Route	Fixed Route Demand Responsive Commuter (3) Service
Service Frequency	FR 2-3 Times/Week DR-MON-FRI	MON-FRI	MON-FRI	1 Route Mon-Thurs 3 Routes once a Week	MON-SAT	FR MON-SAT DR MON-FRI
Fiscal Year 1986 Passengers	44,893	3,845	58,186	15,483	67,146	103,594
Fiscal year 1986 Bus Miles	108,356	27,128	256,634	38,086	100,599	243,044

(1) Rural Transit only; includes only Redding where system operates.

Total population in 9 town Housatonic Area Region Transit District is 162,310.

(2) Includes Torrington plus two towns served by Housatonic Area Regional Transit.

(3) Dropped during 1986.

(4) Demand Responsive Service is now provided (1988).

(5) Torrington is only counted once.

Source: CONN DOT Population Data and Section 18 Reports

- The City of Torrington operated bus routes Monday through Saturday in 1986. These routes subsequently were integrated into Northwestern Connecticut Rural Transit. In 1986, they carried 67,000 passengers and ran 100,000 bus miles.
- The Windham Region Transit District serves 10 towns with a population of over 70,000, plus the University of Connecticut at Storrs. It's fixed route runs from Willimantic to Storrs Monday - Saturday during the School year and only weekdays at other times. The demand responsive route operates weekdays. More than 100,000 passengers were carried in 1986 and almost a quarter million bus miles were operated.

Operating Statistics

Operating statistics by system and type of service are given in Table 2. The largest numbers of passengers per bus mile were found in Estuary (1.21) Torrington (0.87) and Windham (0.80) fixed route services. The lowest numbers of passengers per bus mile were found in the Northeastern (0.11) and HART (0.14) demand responsive services. The two commuter services (Northeastern, Windham) averaged 0.22 passengers per bus mile. The Windham commuter service no longer operates.

Table 3, summarizes operating statistics by type of service. The fixed route systems have the highest productivity - 0.56 passengers per bus mile as compared with 0.29 for the demand responsive systems and 0.23 for the commuter services. Overall, Connecticut's six rural transit systems average 0.38 passengers per vehicle mile and 5.91 passengers per bus hour.

TABLE 2 - OPERATING STATISTICS
RURAL TRANSIT SYSTEMS IN CONNECTICUT - 1986

ITEM	TRANSIT DISTRICT						
	¹ ESTUARY	² HOUSATONIC	³ NORTHEASTERN	⁴ NORTHWESTERN	⁵ TORRINGTON	⁶ WINDHAM	ALL
A. FIXED ROUTE							
Passenger Trips	15,224	-	22,099	15,483	67,146	43,825	163,777
Vehicle Hours	1,287	-	3,752	2,470	10,544	3,067	21,119
Vehicle Miles	12,666	-	87,692	38,086	100,599	54,668	293,711
Passengers/ Vehicle Hour	11.83	-	5.89	6.27	6.37	14.29	7.75
Passengers/ Vehicle Mile	1.21	-	0.25	0.41	0.67	0.80	0.56
Speed MPH	9.84	-	23.38	15.42	9.54	17.82	13.91
B. DEMAND RESPONSIVE							
Passenger Trips	29,669	3,964	2,407	-	-	56,763	92,684
Vehicle Hours	7,257	2,032	1,111	-	-	9,841	20,241
Vehicle Miles	95,690	27,128	22,653	-	-	174,727	320,198
Passengers/ Vehicle Hour	4.09	1.96	2.17	-	-	5.77	4.58
Passengers/ Vehicle Mile	0.31	0.15	0.11	-	-	0.32	0.29
Speed MPH	13.19	13.35	9.41	-	-	17.76	15.82
C. COMMUTER SERVICE							
Passenger Trips	-	-	33,680	-	-	3,006	36,686
Vehicle Hours	-	-	7,451	-	-	750	8,201
Vehicle Miles	-	-	146,289	-	-	13,649	159,938
Passengers/ Vehicle Hour	-	-	4.52	-	-	4.01	4.47
Passengers/ Vehicle Mile	-	-	0.23	-	-	0.22	0.23
Speed MPH	-	-	19.63	-	-	18.20	19.50
D. TOTAL ALL SERVICES							
Passenger Trips	44,893	3,845	58,186	15,483	67,186	103,594	293,147
Vehicle Hours	8,544	2,032	12,313	2,470	10,544	13,658	49,561
Vehicle Miles	108,356	27,128	256,634	38,086	100,599	243,044	773,847
Passengers/ Vehicle Hour	5.25	1.89	4.73	6.27	6.37	7.58	5.91
Passengers/ Vehicle Mile	0.41	0.14	0.23	0.41	0.87	0.43	0.38
Speed MPH	12.68	13.35	20.84	15.42	9.54	17.8	15.61

SOURCE: CONN DOT SECTION 18 Operating Reports

(a) reported as 3964 by transit district for fiscal year 1986

TABLE 3 - SUMMARY-OPERATING STATISTICS- RURAL TRANSIT DISTRICTS IN CONNECTICUT 1985-6

<u>ITEM</u>	<u>COMMUTER</u>	<u>FIXED ROUTE</u>	<u>DEMAND RESPONSIVE</u>	<u>ALL</u>
NUMBER OF SYSTEMS	2	5	4	6
Passenger Trips	36,686	16,377	92,684	293,147
Vehicle Hours	8,201	21,119	20,241	49,651
Vehicle Miles	159,938	293,711	320,198	773,847
Passengers/ Vehicle Hour	4.47	7.75	4.58	5.91
Passengers/ Vehicle Mile	0.23	0.56	0.29	0.38
Speed MPH	19.50	13.91	15.82	15.61

SOURCE: Conn DOT Section 18 Operating Reports

Financial Statistics

Financial statistics for Fiscal Year 1985-6 as reported by CONN DOT are set forth in Table 4. Collectively, the six systems reported revenues of 0.72 per passenger trip and costs of \$3.37 per passenger trip. These figures result in a cost recovery ratio of 0.21 and a subsidy per passenger trip of \$2.65. These overall figures, however, mask the wide variations in financial performance:

- o The revenue-to-cost ratio ranged from 0.07 for HART, 0.12 for Torrington and 0.18 for Northeastern to 0.62 for Northwestern Connecticut.
- o The subsidy per passenger trip ranged from \$2.00 or less in Windham and Northwestern Connecticut to \$3.50 in Northeastern Connecticut and almost \$9.00 per passenger trip in HART (Housatonic.)

These figures suggest a need to bring costs and revenues into better balance, especially for the Torrington, Northeastern, and Housatonic rural transit systems.

SYSTEM PERFORMANCE COMPARISONS

The operating and financial performance for Connecticut's six rural transit systems were compared with rural and small urban systems operating in Indiana, Iowa, Michigan and Pennsylvania in Tables 5, 6, and 7. The data cover differing time periods and differing kinds of systems. The Indiana, Iowa, and Michigan

TABLE 4 - FINANCIAL STATISTICS--SIX RURAL TRANSIT SYSTEMS IN CONNECTICUT 1985-6

ITEM	<u>1</u> ESTUARY (FR, DR)	<u>2</u> HOUSATONIC (DR)	<u>3</u> NORTHEASTERN (FR, DR, CS)	<u>4</u> NORTHWESTERN (FR)	<u>5</u> TORRINGTON (FR)	<u>6</u> WINDHAM (FR, DR, CS)	<u>ALL</u>
1. Revenue	\$ 28,469	\$ 2,562	\$ 93,818	\$ 52,036	\$ 28,594	\$ 54,850	\$210,329
2. Operating Cost	142,841	36,879	249,585	82,933	235,840	238,957	987,035
3. Revenue/ Cost Ratio	0.20	0.07	0.18	0.62	0.12	0.23	0.21
4. Subsidy	114,372	34,317	205,767	30,897	207,246	184,107	776,706
5. Revenue/ Passenger Trip	0.63	0.67	0.75	3.36	0.43	0.53	0.72
6. Cost/ Passenger Trip	3.17	9.59	4.29	5.36	3.51	2.31	3.37
7. Subsidy/ Passenger Trip	2.54	8.92	3.54	2.00	3.08	1.78	2.65
8. Revenue/ Bus Hour	3.33	1.26	3.56	21.07	2.72	4.02	4.24
9. Cost/ Bus Hour	16.68	18.15	20.27	33.58	22.36	17.50	19.92
10. Subsidy/ Bus Hour	13.35	16.89	16.71	12.51	19.64	13.48	15.68
11. Revenue/ Bus Mile	0.26	0.09	0.17	1.37	0.28	0.23	0.27
12. Cost/ Bus Mile	1.31	1.36	0.97	2.18	2.34	0.98	1.28
13. Subsidy/ Bus Mile	1.05	1.27	0.80	0.81	2.06	0.75	1.01

SOURCE: CONN DOT Section 18 Reports

data, for example, cover the 1980-81 period. Some of the systems - especially in Pennsylvania and Indiana include "small urban systems" not unlike those found in Milford, Middletown, and Westport, Connecticut.¹

Nevertheless, the data provide an order-of-magnitude assessment of how well Connecticut systems compare with those in other areas.

- o Table 5 shows that Connecticut's 6-systems carry substantially fewer passengers per bus mile or bus hour than Pennsylvania's systems. Although the revenue-to-cost ratios approximate 0.20 in both states, the subsidy per passenger trip in Connecticut is nearly twice as high.
- o Table 6 gives a five-state comparison of ridership density and recovery ratios for both fixed route and demand-responsive systems. The data indicate that Connecticut's systems have the lowest ridership density. However, the Connecticut revenue/cost ratio is comparable to that in Indiana and Michigan. The higher ratio in Pennsylvania (0.36) apparently reflects a fare increase relative to the ratio of (0.22) reported in Table 5.
- o Table 7 gives frequency descriptions of ridership densities and fare box recovery ratios obtained in the five states. No system in Connecticut reported a ridership density of more than

¹ See Appendix B for detailed data for individual systems

TABLE 5 - COMPARATIVE PERFORMANCE OF CONNECTICUT AND PENNSYLVANIA
RURAL/SMALL CITY TRANSIT SYSTEMS

	CONNECTICUT 6 SYSTEMS <u>FISCAL YEAR 1986</u>	PENNSYLVANIA 19 SYSTEMS <u>1984-1985</u>
TOTAL PASSENGERS	293,147	3,770,617
PASSENGERS PER BUS MILE	0.38	0.92
PASSENGERS PER BUS HOUR	5.91	13.80
AVERAGE SPEED, MPH	15.61	15.02
REVENUE TO COST RATIO	0.21	0.23
SUBSIDY PER PASSENGER TRIP	\$2.65	\$1.41

SOURCE: CONNECTICUT CONN DOT
PENNSYLVANIA - Pennsylvania
Rural and Small Urban Public
Transit Statistical Report -
Fiscal Years, 1983-4 and
1985-6 PENN DOT, August, 1986.

TABLE 6 - COMPARATIVE PERFORMANCE SUMMARY--RURAL AND SMALL URBAN SYSTEMS - 5 STATES

<u>SYSTEM</u>	<u>AVERAGE PASSENGERS/BUS MILE</u>		
	<u>FIXED ROUTE</u>	<u>DIAL-A RIDE</u>	<u>ALL</u>
INDIANA - 1980 (9F,2D)	.98	.56	.94
IOWA 1981 (7F,2D)	1.43	.39	1.20
MICHIGAN 1981 (31D)	-	.56	.56
PENN. 1985 (19F)	1.00	-	1.00
CONN. 1986 (5F,4D,1C)	.56	.29	.38
<hr/>			
	<u>PASSENGERS/BUS HOUR</u>		
INDIANA - 1980	13.84	11.15	13.40
IOWA 1981	16.99	4.82	14.29
MICHIGAN 1981	-	NA	NA
PENN. 1985	14.00	-	14.00
CONN. 1986	7.75	4.58	5.91
<hr/>			
	<u>REVENUE/COST RATIO (IN %)</u>		
INDIANA - 1980	22	27	23
IOWA 1981	31	NA	NA
MICHIGAN 1981	-	22	22
PENN. 1985	36	-	36
CONN. 1986	NA	NA	.21

SOURCE: Table B - 3, Appendix B

D - demand responsive

C - Fixed route

TABLE 7 - FREQUENCY DISTRIBUTIONS OF RIDERSHIP PER MILE AND COST RECOVERY -
Rural and Small Urban Transit Systems in 5 States

		PASSENGERS/BUS MILE						
		0-.5	.5-1.0	1.0-1.5	1.5-2.0	2.0-2.5	OVER 2.5	TOTAL
<u>FIXED ROUTE</u>								
INDIANA		1	4	3	1			9
IOWA		1	3		1	1	1	7
PENNSYLVANIA		6	6	2	3		2	19
CONNECTICUT		2	2	1				5
<u>DEMAND RESPONSIVE</u>								
INDIANA			1					1
IOWA		2						2
MICHIGAN		15	13	3				31
CONNECTICUT		4						4
REVENUE TO COST RATIO								
<u>ALL SYSTEMS</u>		0-.10	.11-.20	.21-.30	.31-.40	.41-.50	OVER .50	TOTAL
INDIANA	(1980)	2	4	2	1	1	1	11
IOWA	(1981)		2		1	2		5
MICHIGAN	(1981)		14	13	1	3		31
PENNSYLVANIA	(1985)		1	4	7	4	3	19
CONNECTICUT	(1986)	1	3	1			1	6

SOURCE: Computed

NOTE: Totals are less than for preceding tables due to non-responses

1.5 passengers per bus mile, and only one system reported a revenue-to-cost ratio of more than 0.30!

PERFORMANCE GUIDELINES

Connecticut's rural public transportation systems provide an important community service for those people who are unable to drive or without access to a car. Their operations are heavily supported by the State and Federal Government.

From a public finance perspective, there should be a reasonable relationship between the benefits provided and the costs involved. Accordingly, measures of effectiveness and efficiency are commonly used to assess system performance. These measures are useful in determining if current policies and operating practices produce enough of the intended results. They show where changes may be required and the desired directions of these changes.

Their specific objectives are to :

- o show all funding sources how funds have been spent.
- o show how the needs of target populations and service areas are met, and ways to improve services to better meet these needs.
- o help control costs of service.
- o help obtain public support by promoting service accomplishments.

National Experience Selected performance measures of system efficiency and effectiveness are shown in Table 8. This table also shows results of more than 100 Section 147 demonstration projects (updated to 1983 to reflect inflation). The table gives values for the top and bottom 20% of the systems. The ranges are quite broad for most performance measures; the breadth denotes the diversity of system types and service areas. Current Section 18 experiences suggest improvements over the values shown in the table.

Table 9 shows how the six Connecticut systems compare with the "Ecosometrics" findings set forth in Table 8.

- o The Housatonic system has a cost per passenger trip (\$9.59) that exceeds the \$8.10 80 percentile limit.

- o All systems have a cost recovery ratio less than the suggested 0.25 value.

- o The Northeastern Connecticut and the Housatonic demand responsive systems do not meet the 80 percentile effectiveness experience.

Suggested Guidelines Suggested performance guidelines for Connecticut's fixed route and demand responsive public transport systems are given in Table 10. These guidelines reflect the five-state and national experiences (Tables 6 through 8), relative to both types of services. Revenue requirements reflect 1987-8 conditions.

PROBABLE RANGES FOR OPERATING STATISTICS FOR
RURAL TRANSPORTATION SYSTEMS¹

	Low ²	High ³
<u>Efficiency measures</u>		
● cost ⁴ per passenger trip (one-way)	\$2.15	\$ 8.10
● cost ⁴ per vehicle mile	\$0.65	\$ 1.35
● cost ⁴ per vehicle hour	\$8.35	\$24.25
● load factor	6%	35%
● operating ratio (revenues operating and administrative costs)	0.25	1.0
<u>Effectiveness measures</u>		
● passengers per vehicle mile	0.12	0.3
● passengers per vehicle hour	2.2	6.0
● monthly passengers per service area population	0.2	1.2
<u>Other descriptors</u>		
● one-way passengers per month	1,000	8,000
● monthly vehicle miles per vehicle	2,000	7,000

¹These figures are 1983 estimates based on tabulations by Ecosometrics, Incorporated for 107 operational Section 147 demonstration projects and on procedures outlined in Appendix E of Jon E. Burkhardt, Sue F. Knapp, and Mark J. Ramsdell, Evaluation of the Office of Human Development Services Transportation Demonstration Program, prepared by Ecosometrics, Incorporated for the Office of Human Development Services, U.S. Department of Health, Education, and Welfare, March, 1979.

²Only 20 percent of all systems referenced have lower values than this.

³Only 20 percent of all systems referenced have higher values than this (with the exception of the statistic for operating ratio).

⁴Operating, capital, and administrative costs included.

TABLE 9 - APPLICATION OF ECOSOMETRICS CRITERIA TO CONNECTICUT SYSTEMS

	SYSTEMS NOT MEETING CRITERIA (1986)
1. EFFICIENCY MEASURES	
COST/PASS TRIP UNDER \$8.10	HOUSATONIC
COST RECOVERY RATIO LESS THAN 0.25	ALL SYSTEMS
2. EFFECTIVENESS MEASURES	
PASSENGERS/VEHICLE MILE UNDER 0.12	NORTHEASTERN Demand Responsive
PASSENGERS/VEHICLE HOUR UNDER 2.2	HOUSATONIC NORTHEASTERN Demand Responsive
3. OTHER	
PASSENGERS/MONTH UNDER 1,000	HOUSATONIC NORTHEASTERN Demand Responsive

SOURCE: Computed

TABLE 10
SUGGESTED PERFORMANCE GUIDELINES FOR CONNECTICUT'S
RURAL PUBLIC TRANSPORTATION SYSTEMS

MEASURE	GUIDELINE	
	<u>FIXED ROUTE</u>	<u>DEMAND RESPONSIVE</u>
PASSENGERS/BUS HOURS	6.50	3.00
PASSENGERS/BUS MILE	0.50	0.20
FAREBOX COST RECOVERY RATIO	0.20	0.15
REVENUE/TRIP (1987-8 LEVEL)	0.65-.75	0.65-.75

SOURCE: ESTIMATED

Table 11 shows where the six systems did not meet the suggested guidelines.

- o The Housatonic and Northeastern systems had ridership per bus mile lower than what is desired.
- o The Housatonic, Northeastern and Torrington system had had farebox recovery ratios less than the guidelines.
- o The Estuary, Torrington , and Windham systems produced less than desired revenue for passenger trip.

Ideally, a transit service should meet the guidelines. If it falls short, then service changes should be made. One possibility would be to shift from fixed route to demand responsive service.

The guidelines also can be used to test the practicality and productivity of planned new services.

ISSUES AND OPPORTUNITIES

Several service and policy issues emerge from the preceding analyses.

1. The Housatonic and Northeast demand responsive system perform poorer than other systems, both in Connecticut and elsewhere. Both services should be re-evaluated with a view toward improving efficiency, or alternatively curtailing service.

TABLE 11

SYSTEMS NOT MEETING SUGGESTED PERFORMANCE GUIDELINES

MEASURE	SYSTEM	
	<u>FIXED ROUTE</u>	<u>DEMAND RESPONSIVE</u>
PASSENGERS PER BUS HOUR	Northeastern	Housatonic Northeastern
PASSENGERS PER BUS MILE		Housatonic Northeastern
FAREBOX COST RECOVERY RATIO	Housatonic Northeastern Torrington	
REVENUE PER TRIP	Estuary Torrington Windham	

Source: Computed

2. The Northeast fixed Route Service should be reassessed. It may be desirable to consider alternate day services.
3. It may be desirable to coordinate the Torrington services with the local social service carriers. It is understood that Northeast, which now operates the Torrington services, is considering this action. The goal is to minimize competition with social service agencies and to avoid redundant services.
4. Fare adjustments should keep pace with inflation-especially on several systems.

Suggested Changes Specific suggestions for improving service productivity follow:

1. Housatonic: The existing Housatonic demand responsive system operates in Redding. The one-bus service is used by senior citizens. Productivity and ridership are low as a result of low development densities, and long distances between pickup. Ridership averages less than 15 per day.

The service should be made more productive or eliminated. One possibility, suggested by the Transit District, is to begin demand-responsive service in neighboring Ridgefield and to integrate the services. Planned congregate housing on the Redding Ridgefield border might provide an additional market.

2. Northeastern: Northeastern's commuter, demand-responsive and fixed route services provides "social service" transportation over an area encompassing almost 400 square miles. The scattered settlement pattern results in low ridership and poor productivity on both the fixed-route and demand responsive services. There is a need to better rationalize and restructure both of these services.
- a. The demand-responsive "Telephone-and-Ride" service operates a single vehicle over the entire 380 square mile area weekdays, from 9 a.m. to 2 p.m. The long distances makes it difficult to provide the needed services (often for health) care, and to carry more than a few passengers per day. Accordingly, it is desirable to provide separate services for the Northern and Southern parts of the region. This would tighten the service area; improve vehicle availability, increase ridership, and possibly cut costs. It can be done by (a) running a single van on alternate days in the Northern and Southern parts of the region or (b) operating a second van. This latter option would entail some changes in the commuter operations to make another van available midday. If either of these changes do not improve the ridership and productivity, then it may be desirable to eliminate the service and let a major health care agency provide the service, under contract on a weekly or twice-a-week basis. Letting a private group run the service is consistent with the national thrust toward privatization.

b. The fixed route service is lightly patronized, especially its southern section. CONN DOT ridership checks October 1987, shown in Table 12, suggest that the service south of Moosup is not really needed from a ridership standpoint. The maximum number of people on any vehicle averaged 7-to-8 in the Northern section while buses usually ran empty in the Southern section. However, because of the transit dependent nature of most riders, this might deprive some residents of needed transport. A more feasible approach is to operate the entire fixed route on alternate days; this would reduce costs without adversely affecting mobility. On the days that the vehicle is not used for fixed route service, it would become available for demand responsive operations.

c. Alternate day service on both fixed-route and dial-a-ride systems has the dual advantages of minimizing competition for passengers and reducing costs.

d. The State Department of Mental Retardation plans to relocate group homes in Northeastern Connecticut. This will increase the demand for transportation, and because of the travel requirements involved, adversely affect productivity. From a public transport perspective, these facilities should be located within a large urban area where extensive bus services are available.

TABLE 12 - SUMMARY OF FIXED ROUTE BUS RUNS--Northeast Connecticut--October 1987

8:30 - Northbound

13 boardings
8 maximum accumulation - Salem Village to Maple Court
Bus empty south of Moosup Gardens

2:20 - Northbound

8 boardings
4 maximum accumulation - Bayville to Shopping Center
Bus empty - Brooklyn to Danielson

11:30 - Northbound

16 boardings
7 maximum accumulation - Putnam Shopping Center
Bus empty south of Moosup Town Pharmacy

8:30 - Southbound

13 boardings
5 maximum accumulation - Ella Grasso to Little River Apartments, Putnam
Only 1 on bus south of Wauregan Post Office

11:35 - Southbound

16 boardings
7 maximum accumulation - Maple Courts
Bus empty - Moosup Gardens to Plainville

2:30 - Southbound

13 boardings
Maximum load estimate: 5 - Hampshire Heights
Bus empty south of Central Village

NOTE: Loads suggest service south of Moosup area is not really needed.

These suggestions show how the Housatonic and Northeastern systems could improve their productivity. Each community should decide how best to achieve the needed service changes.

Market Studies

Service changes will depend upon a clear identification of potential markets. There is a need to understand who rides, and who might ride existing services. Accordingly, social service agencies in each transit district should make needed studies of their candidate travel markets. Their studies are especially important in the Housatonic and Northeastern districts, to achieve more effective demand responsive services.

PART 3

FINANCIAL CONSIDERATIONS

The six rural transit systems are currently supported by the Federal Government (50%), State (17%) and Local areas (17%). At the outset of this study, concern was raised regarding how the systems should be financed assuming that the Federal Government withdrew its support. A related issue, is whether or not the State might provide some financial incentive to promote efficiency.

Overall, the rural public transport systems get a "good deal" from the State in terms of funding assistance. The regions cover 17% of the cost as compared with 9.5% in Pennsylvania and 25% in Massachusetts.

SUBSIDY OPTIONS

Much concern was expressed at the outset of this study over how the rural transit systems should be financed if the 50% Federal subsidy is reduced or eliminated. While this concern has somewhat abated, it remains important to identify the choices that are available. Accordingly, Figure 1 shows the range of possibilities.⁽¹⁾

1. Under the existing Federal legislation, the State and transit districts would share the Federal deficit. This would result in 42% of the costs being borne by the Districts. This could pose financial problems to the districts (OPTION 2)

(1) OPTION 1 shows the present funding arrangements.

STATE SUBSIDY OPTIONS

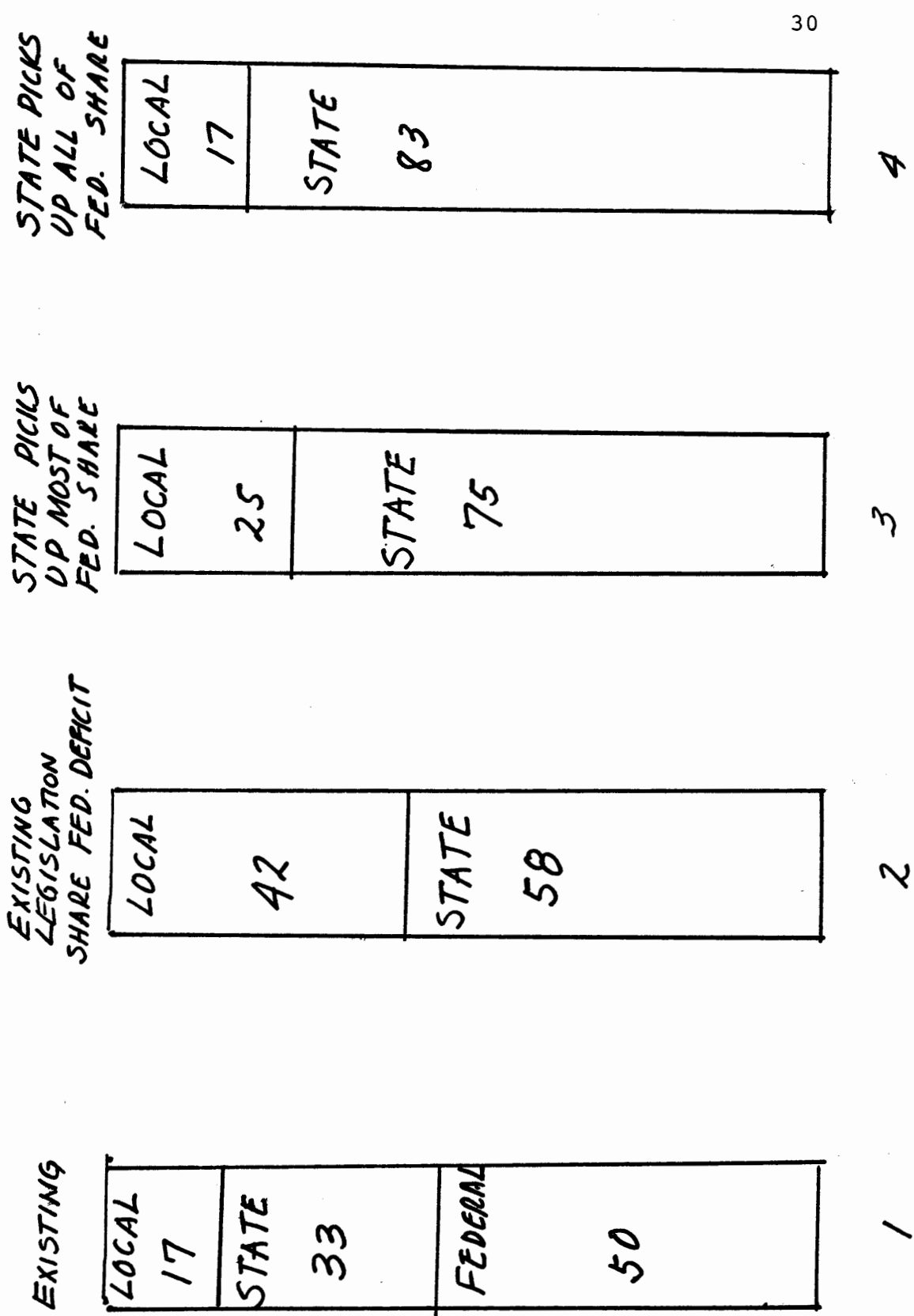


FIGURE 1

2. The state could pick up most of the Federal share. This would result in about 25% of the costs to be borne by the districts (OPTION 3).

3. Alternatively, the state could pick up the entire Federal share. The transit districts would pick up only 17% as at present (OPTION 4).

Options 3 and 4 appear to be realistic courses of action if the Federal support is controlled or eliminated. (A 75-25 state-local division is consistent with the 67-33 split of operating costs with the urbanized transit districts).

INCENTIVES FOR IMPROVED EFFICIENCY

The state should work closely with the rural transit districts to promote operating efficiency. One possibility is to provide an additional state contribution if specific performance guidelines are met. Table 13 illustrates such a state financing-incentive concept. Under this concept, the State would increase its share of the costs as the number of passengers per bus mile increases.

The table uses passengers per bus mile as a basis for incentive payments. However, passengers per bus hour could be used if desired.

ILLUSTRATIVE INCENTIVE FINANCING CONCEPT

<u>PASSENGERS</u>	<u>PER BUS MILE</u>	<u>ADDITIONAL % OF COSTS COVERED BY STATE</u>
FIXED ROUTE	DEMAND RESPONSIVE	
Less than 0.50	Less than 0.20	0
.50 - .60	.20 - .30	2
.61-.70	.31 - .40	4
More than 0.70	More than 0.40	6

Example: Fixed Route with .65 passengers per bus mile

State covers 33 + 4 or 37%
District covers 17-4 or 13%

SOURCE: COMPUTED

IMPROVING TRANSIT BETWEEN DISTRICTS

Connecticut's rural (and urban) transit districts often are located near or contiguous each other. Because essential movements take place between these districts, it is essential that the needed public transport be provided, especially for the elderly and handicapped.

This need was recognized in House Bill Number 5046, File No. 596, April 21, 1988. This bill calls for "a pilot program to promote the existence of public transportation between transit districts for the elderly and persons with disabilities." CONN DOT will work with the districts in establishing a pilot program during the 1988-1989 fiscal year. The program should prove beneficial to the six rural transit districts.

Several interdistrict services should be considered for this pilot program.

- o A fixed-route service from Northeast Connecticut (i.e. Putnam-Danielson-Plainfield) via I-395, Route 12 to Electric Boat and other major generators in Groton, New London, and Norwich.
- o A fixed-route service between Willimantic and Danielson via Route 6. One option to be explored is using Bonanza Bus Lines Hartford-Providence buses for this local service, along with user-side or carrier subsidy.

The pilot projects should test the market for services provided on a daily or weekly basis.

APPENDIX A
POPULATION OF TOWNS AND CITIES SERVED BY
CONNECTICUT'S RURAL TRANSIT SYSTEMS

(SOURCE: CONN DOT)

TABLE A-1 - POPULATION OF TOWNS AND CITIES SERVED

	1980	1985	1990
ESTUARY TRANSIT DISTRICT			
CHESTER	3,068	3,260	3,490
CLINTON	11,195	11,610	12,040
DEEP RIVER	3,994	4,080	4,170
ESSEX	5,078	5,190	5,300
KILLINGWORTH	3,976	4,280	4,580
LYME	1,822	1,960	2,090
OLD LYME	6,159	6,660	7,160
OLD SAYBROOK	9,287	9,440	9,360
WESTBROOK	5,216	5,360	5,590
TOTAL	49,795	51,840	54,050

	1980	1985	1990
HOUSATONIC AREA REGIONAL TRANSIT			
BETHEL	(1)	(1)	(1)
BRIDGEWATER ***	1,563	1,610	1,690
BROOKFIELD	12,872	13,870	14,870
DANBURY	60,470	62,470	64,470
NEW FAIRFIELD	11,260	11,900	12,680
NEW MILFORD ***	19,420	20,420	21,120
NEWTOWN	19,107	20,610	21,810
REDDING	7,272 ^a	7,830 ^a	8,510 ^a
RIDGEFIELD	20,120	21,120	21,820
SHERMAN	2,281	2,480	2,680
TOTAL	154,635	162,310	169,650

Rural Transit Service Area

7,272^a7,830^a8,510^a

*** also in Northwest Transit District

(1) not cited in CONNDOT Population Data

TABLE A-1 (2) - POPULATION OF TOWNS AND CITIES SERVED

	1980	1985	1990
NORTHEAST CONNECTICUT			
BROOKLYN	5,691	6,090	6,390
CANTERBURY	3,426	3,830	4,230
EASTFORD	1,028	1,130	1,180
KILLINGLY	14,519	15,090	15,690
PUTNAM	8,580	8,580	8,530
THOMPSON	8,141	8,150	8,400
WOODSTOCK	5,117	5,370	5,620
TOTAL	46,502	48,240	50,040
Population Served - Transit District		67,130	
	1980	1985	1990
NORTHWEST			
BARKHAMSTED (1)	2,935	3,050	3,230
BRIDGEWATER * (1)	1,563	1,610	1,690
CANAAN	1,002	1,020	1,030
CORNWALL (1)	1,288	1,300	1,310
GOSHEN	1,708	1,860	1,960
KENT	2,505	2,630	2,760
LITCHFIELD	7,605	7,830	8,010
MORRIS (1)	1,899	1,930	1,960
NEW MILFORD *	19,420	20,420	21,120
NORFOLK	2,156	2,160	2,170
NORTH CANAAN	3,185	3,210	3,220
ROXBURY	1,468	1,590	1,720
SALISBURY	3,896	3,930	3,980
SHARON	2,623	2,640	2,670
TORRINGTON **	30,987	31,290	31,490
WARREN	1,027	1,050	1,090
WASHINGTON	3,657	3,710	3,760
WINCHESTER	10,841	10,790	10,960
TOTAL	99,765	102,020	103,230

* also in Housatonic Area Transit

** also in Torrington Area Transit

(1) not in NW CONN Transit District but in NWCRT Service Area

TABLE A-1 (3) - POPULATION OF TOWNS AND CITIES SERVED

	1980	1985	1990
NORTHWEST CONNECTICUT (continued)			
ASHFORD	3,221	3,370	3,520
CHAPLIN	1,793	1,890	1,940
COLUMBIA	3,386	3,570	3,720
COVENTRY	8,895	9,310	9,760
HAMPTON	1,322	1,520	1,720
LEBANON	4,762	4,960	5,110
MANSFIELD	20,634	20,130	20,130
SCOTLAND	1,072	1,140	1,210
WILLINGTON	4,694	4,890	5,190
WINDHAM	21,062	21,560	22,060
TOTAL	70,841	72,340	74,360

Source: CONN DOT

APPENDIX B

COMPARATIVE PERFORMANCE OF RURAL/SMALL CITY TRANSIT SYSTEMS

TABLE B-1 COMPARATIVE PERFORMANCE OF RURAL/SMALL CITY TRANSIT SYSTEMS
CONNECTICUT AND PENNSYLVANIA

	<u>CONNECTICUT 6 SYSTEMS</u> <u>FISCAL YEAR 1986</u>	<u>PENNSYLVANIA 19 SYSTEMS</u> <u>1984 - 1985</u>
Total Passengers	293,147	3,770,617
Total Revenue Vehicle Hours	49,651	273,135
Total Revenue Vehicle Miles	773,847	4,103,143
Passengers/ Vehicle Hour	5.91	13.80
Passengers/ Vehicle Mile	0.38	0.92
Average Speed, MPH	15.61	15.02

SOURCE: CONNECTICUT - CONN DOT

PENNSYLVANIA - Pennsylvania Rural and Small Urban Public Transit Statistical Report
Fiscal Years 1983-4 and 1985-6, PENN DOT, August 1986

TABLE B-2 COMPARATIVE FINANCIAL PERFORMANCE--RURAL/SMALL CITY TRANSIT SYSTEMS
CONNECTICUT AND PENNSYLVANIA

	<u>CONNECTICUT 6 SYSTEMS</u> <u>FISCAL YEAR 1986</u>	<u>PENNSYLVANIA 19 SYSTEMS</u> <u>1984 - 1985</u>
1. Revenue	\$ 210,329	\$ 1,566,914
2. Operating Cost	\$ 987,035	\$ 6,878,122
3. Revenue/Cost Ratio	0.21	0.23
4. Subsidy	\$ 776,706	\$ 5,311,208
5. Revenue/ Passenger Trip	0.72	0.41
6. Cost/Passenger Trip	3.37	1.82
7. Subsidy/ Passenger Trip	2.65	1.41
8. Revenue/Bus Hour	4.24	5.74
9. Cost/Bus Hour	19.92	25.18
10. Subsidy/Bus Hour	15.68	19.44
11. Revenue/Bus Mile	0.27	0.38
12. Cost/Bus Mile	1.28	1.68
13. Subsidy/Bus Mile	1.01	1.30

SOURCE: CONNECTICUT - CONN DOT

PENNSYLVANIA - Pennsylvania Rural and Urban Public Transit Statistical
Report - Fiscal Years 1983-4 and 1985, PENN DOT, August 1986

TABLE B-3 COMPARATIVE PERFORMANCE OF RURAL AND SMALL-URBAN SYSTEMS IN 5 STATES

STATE	YEAR	NUMBER OF SYSTEMS	TYPE OF SERVICE	PASSENGERS/ BUS MILE	PASSENGERS/ BUS HOUR	COST/ PASSENGER	REVENUE/ PASSENGER	SUBSIDY/ PASSENGER	% REVENUE COST
INDIANA (Small Systems)	1980	9	F	0.98 (0.48)	13.84 (8.95)	\$2.17 (2.89)	\$0.42 (.60)	\$1.73 (2.31)	22 (15)
	1980	2	D	0.56	11.15	1.13 (0.18)	0.33 (.19)	0.80 (0.01)	27 (12)
	1980	11	ALL	0.94 (0.47)	13.40 (8.23)	1.98 (2.65)	0.40 (.55)	1.58 (2.32)	23 (15)
IOWA (Small Systems)	1981	7	F	1.43 (1.08)	16.99 (12.35)	1.18 (0.54)	0.32 (.09)	0.86 (0.50)	31 (11)
	1981	2	D	0.39 (0.06)	4.82 (0.56)	NA	NA	NA	NA
	1981	9	ALL	1.20 (1.05)	14.29 (12.01)	NA	NA	NA	NA
PENNSYLVANIA (Small Systems)	1985	19	F	1.00 (0.70)	14.10 (7.40)	2.70 (2.46)	0.57 (.47)	2.13 (2.00)	36 (19)
	1981	31	D	0.56 (0.30)	NA	2.48 (0.84)	0.53 (.21)	1.95 (0.73)	22 (8)
CONNECTICUT	1986	5	F	0.56	7.75				
		4	D	0.29	4.58				
		1	C	0.23	4.47				
		10	ALL	0.38	5.91	3.37	0.72	2.65	21
ESTUARY	1986	2	F	1.21	11.83 }	3.17	0.63	2.54	20
			D	0.31	4.09 }				
HOUSATONIC			D	0.14	1.89	9.59	0.67	8.92	7
			F	0.25	5.89 }				
NORTHEASTERN			D	0.11	2.17 }	4.29	0.75	3.54	18
			C (Commuter)	0.23	4.52 }				
NORTHWESTERN			F	0.41	6.27	5.36	3.36	2.00	62
			F	0.87	6.37	3.51	0.43	3.08	12
TORRINGTON			F	0.80	14.29 }	2.31	0.53	1.78	23
			D	0.32	5.77 }				

F - Fixed Route
D - Demand Responsive
C - Commuter Bus

SOURCE: Computed Note: Standard Deviations are shown in parenthesis

TABLE B-4 (1) - OPERATING STATISTICS FOR RURAL TRANSIT SYSTEMS IN INDIANA, IOWA, MICHIGAN, AND PENNSYLVANIA, 1980-81

SYSTEM	YEAR	SERVICE AREA POPULATION	TYPE OF SERVICE	PASSENGERS/ BUS MILE	PASSENGERS/ BUS HOUR	OPERATING COST/ PASSENGER	REVENUE/ PASSENGER	SUBSIDY/ PASSENGER	% FARE BOX RECOVERY
INDIANA									
Anderson	1980	64,421	F	1.01	NA	\$ 1.989	\$ 0.213	\$ 1.78	10.7
Bloomington	1980	51,867	F	1.18	NA	0.816	0.195	0.62	23.9
Columbus	1980	30,331	D	0.56	NA	0.943	0.139	0.80	14.7
Evansville	1980	129,667	F	1.89	27.10	0.514	0.217	0.30	42.2
Lafayette	1980	64,084	F	1.50	20.25	1.281	0.182	1.10	14.2
La Porte	1980	21,781	D	NA	11.15	1.311	0.517	0.79	39.4
Marion	1980	35,833	F	0.94	10.89	1.196	0.157	1.04	13.1
Michigan City	1980	35,000	F	0.67	NA	1.744	0.143	1.60	8.2
Richmond	1980	41,261	F	0.80	NA	0.900	0.484	0.42	53.8
Terre Haute	1980	61,020	F	0.11	1.30	10.250	2.090	8.16	20.4
Washington	1980	11,300	F	0.74	9.68	0.817	0.078	0.74	9.5
Mean				0.94	13.40	1.976	0.396	1.58	22.7
Standard Deviation				0.47	8.23	2.65	0.55	2.32	14.7
IOWA									
(Small Transit Systems)									
Bettendo	1981	NA	F	0.42	7.36	NA	NA	NA	NA
Bettendo	1981	NA	D	0.33	5.37	NA	NA	NA	NA
Burlington	1981	NA	F	1.64	18.30	1.05	0.20	0.85	19.0
Coralville	1981	NA	F	2.41	29.70	0.79	0.32	0.47	40.5
Iowa City	1981	NA	F	3.54	40.32	0.57	0.26	0.31	45.6
Marshall	1981	NA	F	0.80	10.46	2.12	0.36	1.76	17.0
Mason City	1981	NA	F	0.57	7.07	1.39	0.45	0.93	32.3
Muscatine	1981	NA	D	0.45	4.26	NA	NA	NA	NA
Muscatine	1981	NA	F	0.66	5.75	NA	NA	NA	NA
Mean				1.20	14.29	1.18	0.32	0.86	30.9
Standard Deviation				1.05	12.01	0.54	0.09	0.50	11.4

TABLE B-4 (2) - OPERATING STATISTICS FOR RURAL TRANSIT SYSTEMS IN INDIANA, IOWA, MICHIGAN, AND PENNSYLVANIA, 1980-81, (Continued)

SYSTEM MICHIGAN (Demand Responsive Systems)	YEAR	SERVICE AREA POPULATION	TYPE OF SERVICE	PASSENGERS/ BUS MILE	PASSENGERS/ BUS HOUR	TOTAL COST/ PASSENGER	TOTAL REVENUE/ PASSENGER	SUBSIDY/ PASSENGER (a)	% REVENUE COST
Adrian	1981	20,382	D	0.612	NA	\$ 1.28	\$ 0.34	\$ 0.94	26.6
Alma	1981	9,790	D	0.773	NA	2.85	0.93	1.92	32.6
Alpena	1981	19,805	D	0.561	NA	2.22	0.48	1.74	21.6
Antrim	1981	12,612	D	0.150	NA	3.89	0.90	2.99	23.1
Baraga	1981	7,789	D	0.275	NA	3.10	0.36	2.74	11.6
Belding	1981	5,121	D	1.179	NA	1.25	0.29	0.96	23.2
Big Rapids	1981	11,995	D	0.784	NA	1.72	0.32	1.40	18.6
Cadillac	1981	10,490	D	0.610	NA	1.72	0.37	1.35	21.5
Crawford	1981	6,482	D	0.293	NA	3.56	0.95	2.61	26.7
Davidson	1981	5,259	D	0.615	NA	1.75	0.34	1.41	19.4
Dowagiac	1981	6,583	D	0.634	NA	2.19	0.39	1.80	17.8
Eaton Rapids	1981	4,494	D	0.440	NA	2.64	0.36	2.28	13.6
Eyota	1981	24,065	D	1.407	NA	1.90	0.82	1.08	43.2
Gladwin	1981	NA	D	0.742	NA	1.17	0.49	0.68	41.9
Gogebic	1981	NA	D	0.739	NA	1.96	0.31	1.65	15.8
Hillsdale	1981	7,728	D	0.641	NA	1.62	0.35	1.27	21.6
Holland	1981	27,137	D	0.480	NA	2.36	0.43	1.93	18.2
Houghton	1981	34,652	D	0.455	NA	2.11	0.59	1.52	28.0
Isabella	1981	44,594	D	0.370	NA	3.91	0.48	3.43	12.3
Ishpeming	1981	-	D	0.433	NA	3.44	0.64	2.80	18.6
Lenawee	1981	61,549	D	0.253	NA	2.81	0.71	2.10	25.2
Ludington	1981	9,521	D	0.694	NA	2.98	0.44	2.54	14.8
Manistee	1981	20,094	D	0.301	NA	3.18	0.54	2.64	17.0
Marquette	1981	-	D	1.274	NA	1.18	0.53	0.65	44.9
Marshall	1981	7,253	D	0.627	NA	1.93	0.41	1.52	21.2
Mecosta	1981	15,997	D	0.174	NA	4.16	1.04	3.12	25.0
Niles	1981	7,283	D	0.523	NA	2.41	0.37	2.04	15.3
Sault Ste. Marie	1981	15,136	D	0.466	NA	2.42	0.37	2.05	15.2
Traverse City	1981	20,011	D	0.399	NA	2.60	0.56	2.04	21.5
Van Buren	1981	56,173	D	0.193	NA	3.70	0.82	2.88	22.2
Yates	1981	1,963	D	0.392	NA	2.88	0.56	2.32	19.4
Mean				0.564		2.48	0.53	1.95	22.5
Standard Deviation				0.297		0.84	0.21	0.73	8.3

(a) computed herein as difference between costs and revenues

TABLE B-4 (3) - OPERATING STATISTICS FOR RURAL TRANSIT SYSTEMS IN INDIANA, IOWA, MICHIGAN, AND PENNSYLVANIA, 1980-81, (Continued)

SYSTEM/AREA PENNSYLVANIA (Rural and Small City Systems)	YEAR	SERVICE AREA POPULATION	TYPE OF SERVICE	PASSENGERS/ BUS MILE	PASSENGERS/ BUS HOUR	COST/ PASSENGER	REVENUE/ PASSENGER	SUBSIDY/ PASSENGER	% REVENUE COST
ATA/North Central PA	1984-5	245,254	F, D	0.5	7.4	\$ 3.32	\$ 0.75	\$ 2.57	48.0
BCTA/Beaver County	1984-5	NA	D	0.1	1.9	11.97	2.24	9.73	30.0
Butler/Butler Area	1984-5	NA	F	2.6	18.1	1.79	0.21	1.58	24.0
Carbon/Carbon County	1984-5	53,285	F	0.6	7.5	2.53	0.40	2.14	19.0
CART/Cambria County	1984-5	85,908	F, D	0.3	5.3	3.75	0.82	2.93	36.0
CATA/Crawford Area	1984-5	88,869	F	1.9	20.7	0.98	0.27	0.71	66.0
COLT/Lebanan County	1984-5	110,000	F	1.2	18.4	1.21	0.35	0.86	45.0
DUFAST/Dubois, Falls Creek	1984-5	16,742	F	0.8	12.6	1.71	0.31	1.40	34.0
EMTA/Bradford County	1984-5	NA	F	0.3	6.6	4.39	1.11	3.28	34.0
HTA/Hazleton Area	1984-5	NA	F	1.6	19.2	1.43	0.31	1.12	36.0
IETA/Indiana County	1984-5	90,000	F	0.8	14.7	1.96	0.50	1.47	33.0
MCTA/Monroe County	1984-5	69,409	F	1.1	20.0	1.39	0.42	0.97	46.0
MID-CO/Ford City Area	1984-5	NA	F	0.7	10.4	2.19	0.46	1.73	36.0
MT CARMEL/Mt Carmel Borough	1984-5	NA	F	2.8	33.3	0.88	0.16	0.73	80.0
NCATA/New Castle Area	1984-5	39,499	F	1.7	22.0	1.38	0.29	1.09	35.0
STS/Schuylkill County	1984-5	NA	F	1.0	16.4	1.45	0.37	1.08	55.0
TAWC/Warren County	1984-5	NA	F	0.9	16.2	1.63	0.29	1.34	26.0
VENANGO/Venango County	1984-5	NA	F	0.4	7.8	2.24	0.74	1.50	42.0
WCTA/Westmoreland County	1984-5	240,400	F	0.4	8.5	5.03	0.86	4.17	28.0
Average				1.0	14.0	2.70	0.57	2.13	36.5
Standard Deviation				0.7	7.4	2.46	0.47	2.00	18.6

- SOURCES - TABLE A-3: 1. 1980 Annual Report - Indiana Public Transportation - State Planning Services Agency
 2. 1980-81 Comprehensive Transportation Fund Report, Michigan Transportation Commission
 3. Carter-Goble Association - Rural Public Transportation - Performance Evaluation Guide - Final Report, November 1982, Prepared for PENN DOT
 4. Pennsylvania Rural and Small Urban Public Transit Statistical Report Fiscal Years 1983-4 and 1984-5, PEEN DOT, August 1986

APPENDIX C

FILE NO. 596

SUBSTITUTE HOUSE BILL 5046

APRIL 21, 1988

An Act Establishing a Pilot Program To Promote The Existence of
Accessible Public Transportation Between Transit Districts, For The
Elderly And Persons With Disabilities



House of Representatives

House of Representatives, April 21, 1988. The Committee on Appropriations reported through REP. POLINSKY, 38th DIST., Chairman of the Committee on the part of the House, that the substitute bill ought to pass.

AN ACT ESTABLISHING A PILOT PROGRAM TO PROMOTE THE EXISTENCE OF ACCESSIBLE PUBLIC TRANSPORTATION, BETWEEN TRANSIT DISTRICTS, FOR THE ELDERLY AND PERSONS WITH DISABILITIES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:
 Section 1. During the fiscal year ending June 30, 1989, the commissioner of transportation shall, within available appropriations, establish and conduct a pilot program, in two or more transit districts chosen by the commissioner, which will provide funding for the creation of coordinated fixed-route bus services and demand responsive transportation services within and between such districts which are accessible to the elderly and persons with disabilities. The commissioner, in determining where to establish the pilot program, shall give priority to transit districts in rural areas.

Sec. 2. On or before January 1, 1990, the commissioner of transportation shall report to the joint standing committee of the general assembly having cognizance of matters relating to transportation on the results of the pilot program established in accordance with the provisions of section 1 of this act. The report shall include

- 21 an evaluation of such program and recommendations,
- 22 if any, for appropriate legislation.
- 23 Sec. 3. Any funds appropriated to the
- 24 department of transportation for the governor's
- 25 commuter travel improvement program which are made
- 26 available for the regionalization and coordination
- 27 of services for the elderly and persons with
- 28 disabilities shall be used for administrative
- 29 expenses or capital expenditures for such
- 30 services, except that during the fiscal year
- 31 ending June 30, 1989, any funds made available for
- 32 such purpose which are not required for
- 33 administrative expenses or capital expenditures
- 34 may be used for operating expenses.

"THE FOLLOWING FISCAL IMPACT STATEMENT AND ALL ANALYSIS ARE PREPARED FOR THE BENEFIT OF MEMBERS OF THE GENERAL ASSEMBLY, SOLELY FOR PURPOSES OF INFORMATION, GENERALIZATION AND EXPLANATION AND DO NOT REPRESENT THE INTENT OF THE GENERAL ASSEMBLY OR EITHER HOUSE THEREOF FOR ANY PURPOSE."

FISCAL IMPACT STATEMENT - BILL NUMBER SHB 5046

STATE IMPACT None, see explanation below
(Transportation Fund)

MUNICIPAL IMPACT Potential savings, see explanation below

STATE AGENCY(S) Department of Transportation

EXPLANATION OF ESTIMATES:

STATE IMPACT: Passage of this bill would not create additional costs to the Department of Transportation because its requirements would have to occur within available appropriations. Since the regional coordination of public transportation is still in the final planning stages, it is not known how much, if any, funding will be available either for the pilot program or for operating expenses for those entities involved in the provision of regional service to the elderly and persons with disabilities. In 1987-88, \$3.0 million was appropriated for the regional coordination effort. Of this amount, from \$2.2 million to \$2.5 million will not be spent in 1987-88 and will be made available for expenditure in 1988-89. Along with the \$.5 million in SHB 5327, the Appropriations Act, from \$2.7 million to \$3.0 million will be available for the coordination effort.

MUNICIPAL IMPACT: To the extent that there might be surplus funds available for transportation services that are currently municipally subsidized, there could be savings to municipalities, the amount of which cannot be determined at this time. It is not known whether surplus funds will be available, and if they are available, how much they will be.