

A set of rules governing the activities of drivers and dispatchers is also needed.

A marketing program must be developed. Although advertising is important, the marketing effort should permeate the entire system. Courteous drivers, clean buses, and reliable service are more effective than any advertising campaign.

EVALUATION

The tendency is for the manager to devote all of his or her time and energy to procuring funds and handling the daily crises that must be solved to keep the operation functioning. This leaves little time for ongoing evaluation of the system. But some evaluation is necessary, especially when public funds are being used.

The evaluation process depends on the existence of a set of measurable objectives and also requires data on the performance of the operation. This must be kept in mind during the implementation phase when record-keeping requirements are being established.

Trends in costs and ridership are always needed, but a meaningful evaluation procedure will also include other indicators of the effectiveness and efficiency of the system.

As indicated in Figure 1, the results of the evaluation should be used to determine whether the transportation problem is being solved. Are agency clients receiving increased mobility and has the human-service-agency delivery system been improved by the rural transit system?

ACKNOWLEDGMENT

This paper is an outgrowth of a research effort sponsored by the Office of University Research, U.S. Department of Transportation. The statements and views expressed represent my position and not necessarily that of the Department of Transportation.

**Dr. Saltzman was at the University of California, Irvine, when this paper was prepared.*

Transportation Planning and Implementation in Small Cities and Rural Areas

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The Indiana Mass Transportation Improvement Project is responsible for public transportation planning in the small urban and rural areas of Indiana. The goals of the Indiana Public Transportation Advisory Committee emphasize the public transportation system. In Indiana a unique working arrangement is established in which the mass transportation improvement project serves as the staff for local public transportation operators. The project attempts to combine planning and operations into a total management assistance program. Work currently is being done in nine cities of less than 50 000 population and 26 counties in the state. In rural areas, the transportation advisory committee plays a dominant role in local transportation planning and evaluation. It addresses the community's total transportation needs rather than having local social service agencies think only of their own transportation needs. The Indiana Mass Transportation Improvement Project is establishing transportation advisory committees in all of the state's 18 planning regions. Transportation problems must be addressed by the service or market area, not by political boundaries such as counties. The success of the transportation improvement project is defined by how well it designs and helps implement a public transportation system that serves public transportation needs in the state.

The Indiana Mass Transportation Improvement Project (IMTIP) is responsible for public transportation planning for more than 2 000 000 Indiana residents who live in urban areas with less than 50 000 population. IMTIP is a division of the Indiana University Graduate School of Business' Institute for Urban Transportation. Since 1975 the office of the governor has contracted with the Institute for all small urban and rural section 9 planning work.

IMTIP's operation is guided by the Indiana Public Transportation Advisory Committee. Serving almost as a division of public transportation under the State Planning Services Agency (SPSA), IMTIP is charged with carrying out the goals of the public transportation advisory committee. Its goals are

1. To provide quality public transportation in Indiana adequate to meet the needs of the general traveling public, especially those without ready access to other means of transportation;
2. To provide for the transit needs of special groups, particularly the elderly and handicapped;
3. To provide an alternative to the automobile in a period when the cost of private transportation has increased greatly;
4. To ensure that Indiana cities will be able to attract new industrial, mercantile, warehousing, and other economic activity, and to retain existing enterprise;
5. To help meet state and federal goals for safety, conservation of energy, and control of environmental pollution;
6. To recognize that mobility through high-capacity service in densely populated areas by means of light rail commuter service may be appropriate in certain regions of the state; and
7. To preserve and upgrade existing public transportation services and facilities and to encourage new

Table 1. Current operating statistics, 1977.

City	Population	Planning Status	Fleet			Deficit/Capita		Riders	
			Size	Engine	Age	Amount (\$)	Change (%)	Number	Change (%)
Richmond	43 999	R	10	Gas	6.0	1.79	+0.5	467 204	+17.5
Bloomington	42 890	R	12	Diesel	4.8	6.43	+32.6	486 199	-5.3
Marion	39 607	R	7	Gas	7.7	2.78	+41.1	168 341	-5.2
Michigan City	39 369	R	6	Diesel	27.0	3.59	-41.0	91 000	-48.7
Columbus	27 710	R	5	Gas	4.8	1.87	+68.0	65 807	-6.8
La Porte	22 140	R	6	Gas	4.0	2.45	+12.4	117 666	-7.9
New Castle	21 215	P	-	-	-	-	-	-	-
Wabash	13 379	C	-	-	-	-	-	-	-
Washington	11 358	P	2	Gas	4.0	0.56	-44.0	10 005	-18.6
Total	261 667		48		7.7	3.16	+13.6	1 406 222	

Note: R = Reappraisal, P = In progress, C = Complete.

Table 2. Status of capital grants, 1977.

City	Grant Status	Cost (\$)			Buses			
		Total	UMTA	State	Number	Capacity	Engine	Special Features
Richmond	A	635 817	508 654	61 250	10	20	Diesel	Air conditioning
Bloomington	P	721 738	577 390	65 500	3	12	Gas	Lift equipped
Marion	A	386 287	309 030	38 628	4	25	Diesel	-
Michigan City	P	430 137	344 110	43 013	4	19	Gas	-
Columbus	A	370 103	296 082	37 011	1	10	Diesel	Lift equipped
La Porte	P	300 828	240 662	30 082	4	19	Diesel	Air conditioning
					1	15	Gas	Lift equipped
					5	17	Diesel	Air conditioning
					1	15	Diesel	Lift equipped
Total		2 844 910	2 275 928	275 484	41			

Note: A = Approved; P = Pending.

and innovative forms of public transportation.

IMTIP is responsible for handling both statewide technical assistance including conferences, newsletters, consulting with executive agencies and the legislature, and local technical assistance programs to accomplish the goals of the public transportation advisory committee.

LOCAL TECHNICAL ASSISTANCE

Currently IMTIP works with nine Indiana cities that have fewer than 50 000 population: Bloomington, Columbus, La Porte, Marion, Michigan City, New Castle, Richmond, Wabash, and Washington. IMTIP has completed 5-year plans for eight of the cities and currently is working on a plan for New Castle. IMTIP is also working on a plan for La Porte County. The cities' service characteristics are shown in Tables 1 and 2.

IMTIP also has provided technical assistance for all section 16b2 applications submitted since 1975 by serving as coadministrators with the Commission on Aging and Aged. IMTIP also reviewed the section 147 rural demonstration grant applications and has prepared transportation development programs for 26 rural counties to meet section 16b2 planning requirements.

Currently IMTIP is establishing transportation advisory committees (TACs) for each of the state's 18 regional planning areas. IMTIP will work with the TACs to develop transportation plans to meet section 16b2 requirements.

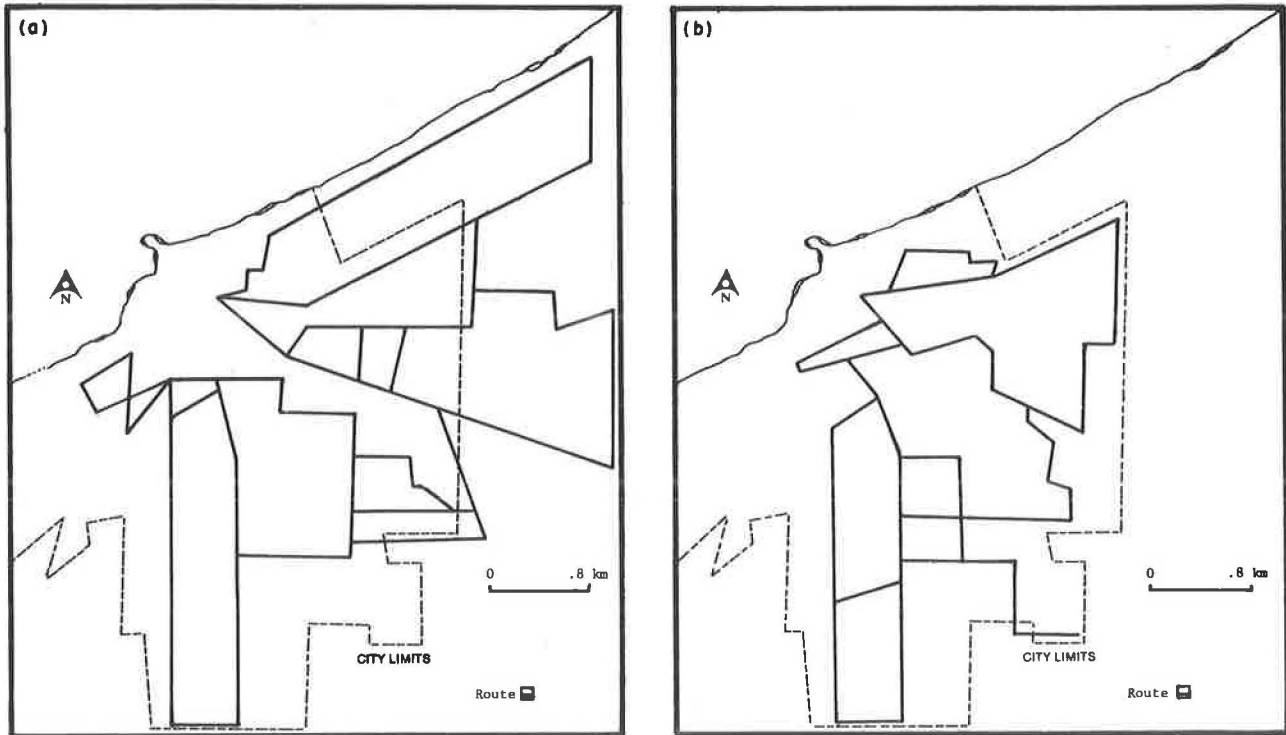
IMTIP's approach is based on the motto: Research is nice, but results are better. Under this philosophy, IMTIP has combined the traditional aspects of planning and operations into a program of management assistance.

Planners and transit operators often do not understand that planning is management of the future. If the planner and operator work together effectively, the operator works daily to achieve the desired results that the planner has projected for a year or more. A plan should have a set of objectives that are realistic and attainable. The objectives also must be quantifiable and consistent with the community's values or goals. A plan that has community support is easier to implement. But a plan also requires control, evaluation, and an ability to adapt to the future. If the planner and operator fail to work together, the plan becomes a document whose sole purpose is to show that it was prepared. IMTIP's approach is to develop comprehensive, 5-year organizational plans for public transportation systems.

The use of TACs on a regional basis helps IMTIP to coordinate human service transportation planning and operations within the service or market area. By addressing human service transportation problems by service area rather than by political boundary (such as a county), the agencies can identify their mutual goal of providing transportation to those who do not have adequate transportation. The primary purpose of the TACs is to enable all human service agencies to realize that their transportation goals are components of the area's unmet transportation needs.

IMTIP's work with the small cities and the TACs is the basis of its local technical assistance program. The local technical assistance staff functions as a staff of transportation operators in the state's smaller cities and rural counties. We provide management assistance for the analysis and evaluation local managers do not have the time to undertake. Our working relationship is based on personal trust and confidence developed during work on a technical study when IMTIP addresses

Figure 1. Michigan City route maps: (a) old route structure (1976) and (b) present route structure (1977–present).



local issues as its own issues.

IMTIP works to instill in the communities and operators the knowledge that our goal is to help them. IMTIP provides the information necessary for their decision making. IMTIP provides the knowledge and skills necessary to help local decision makers make the proper value judgments about their public transportation.

During the first contacts for a technical study, we interview local officials and community leaders to determine the community's attitudes about public transportation. During these interviews, IMTIP asks the government leaders to establish a TAC to ensure citizens' input in the planning and operation of public transportation.

IMTIP then establishes a tentative goal for the public transportation system. The community's transportation resources and needs are examined. To determine the community's unmet needs for public transportation, we develop options for public transportation service that meet those needs. We present the options to the TAC and the local executive and legislative bodies for formal review. Throughout the data collection and analysis, we give informal reports to these groups so they are familiar with the options before our formal presentation. The purpose of the formal review is to ensure that the recommended option is one that can be used. The plan must be manageable and worthwhile. Implementation will be the test of the plan's worth.

IMTIP firmly believes in the principle of home rule. Documentation of the technical study is not completed until community approval is granted.

After a city accepts a technical study, IMTIP assists in the preparation of a capital grant by ensuring that the required assurances are signed and that the rules and regulations are met. IMTIP corrects problems before the city submits the grant to the Urban Mass Transportation Administration (UMTA).

IMTIP continually evaluates the plan and refines and expands it as needed. With this integrated process, In-

diana's small cities will provide more responsive, cost-effective public transportation to their citizens.

As part of IMTIP's assistance program to small cities, development of a generic marketing program has begun. The goal of this program is to institutionalize public transportation as part of small-city life. Citizens must be aware of the transit service and its benefits before they will use it. The marketing program includes a public information program, route and schedule designs, and system graphics.

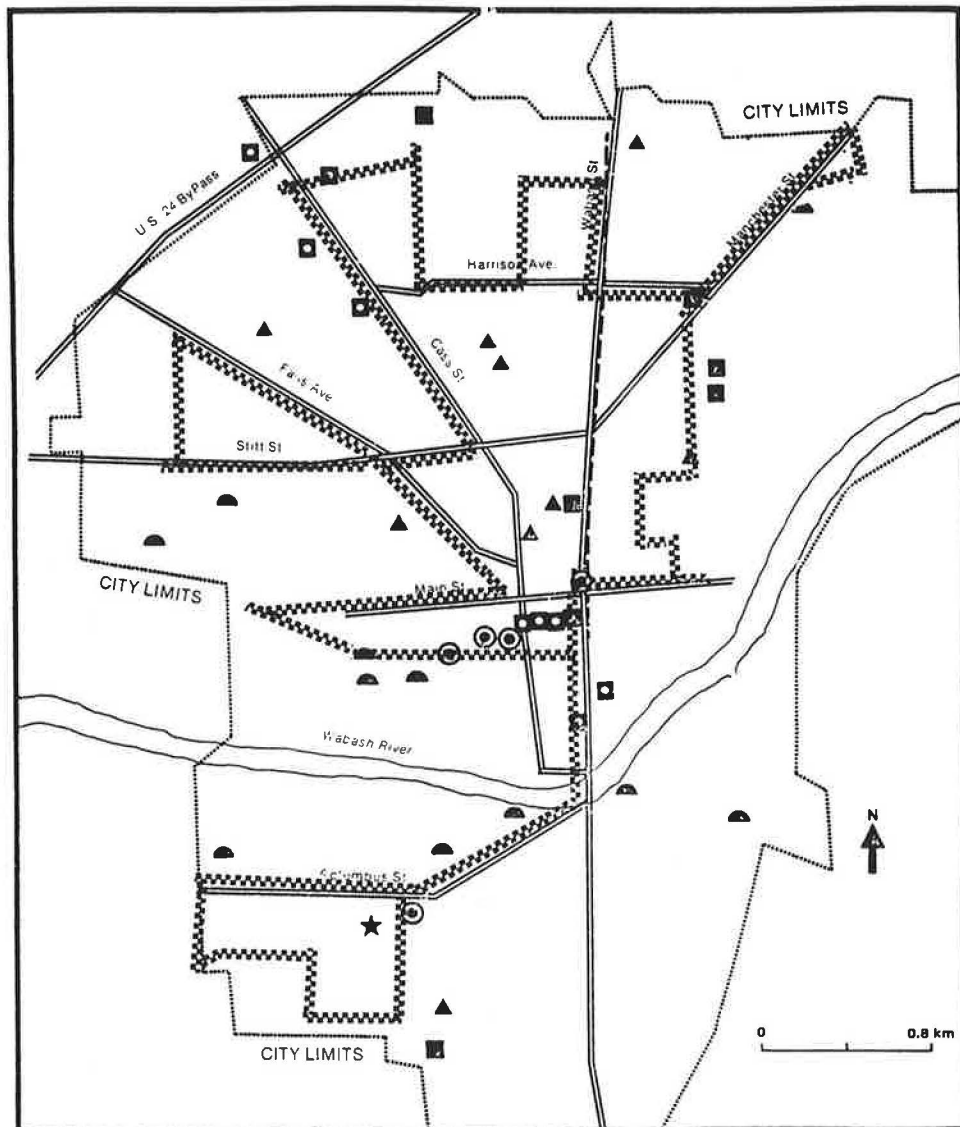
SMALL CITIES

Many of the improvements recommended by IMTIP for small urban public transportation systems have been adopted:

1. In Bloomington—A load-factor analysis proved the need to use medium-sized buses on the system's most popular route. Currently the Indiana University campus bus system and the city system are considering the establishment of a transfer pass between the two systems, which only interface on the edge of campus.

2. In La Porte County—IMTIP is currently conducting a technical study to consolidate three other technical studies for areas within the county. Michigan City and La Porte are only 17.7 km (11 miles) apart in the highly populated northwestern corner of the county. IMTIP has completed studies for the city-owned systems in each city. In addition, IMTIP prepared a study of the Chicago, South Bend, and South Shore Railroad (South Shore) that runs across the northern part of La Porte County through Michigan City. The county-wide study will suggest options for commuter and shopping trip service in the northwestern corner of the county and will link this service with the South Shore's service along with coordinated human service agency transportation in the rest of the county. By expanding and integrating planning boundaries, IMTIP is attempting to use the synergism

Figure 2. Wabash route map.



of the new area to support a more rational public transportation system.

3. In Michigan City—Where finances are limited, service has been restricted to four routes from 6:00 to 10:00 a.m. and 2:00 to 6:00 p.m., and one route from 10:00 a.m. to 2:00 p.m. (see Figure 1). The city was providing service to its suburbs. When the system was analyzed, IMTIP discovered that the city was not charging the suburbs the actual cost of the service provided. When the suburbs balked at paying the actual cost, IMTIP designed a system to serve only the city on four routes from 6:00 a.m. to 7:00 p.m. at no additional operating cost. Now the citizens of Michigan City are getting more service for their money.

4. In Marion—The bus fleet the city had and its route structure both were deplorable. IMTIP persuaded the city to delay implementing a more direct route structure until reliable vehicles could be placed into service. The city agreed there was little to be gained by changing a poor system, often with missed runs into a good system with often missed runs.

5. In Wabash—The private operator provided one circuitous, fixed-route system for a \$14 000/year subsidy from the city (see Figure 2). He was making only 65 to 70 trips/d. The relatively high subsidy for a city

of limited resources of \$0.75/passenger forced IMTIP to examine other transportation alternatives. IMTIP recommended providing a subsidy to the user. The privately operated taxi, the bus operator, and human service agencies would design their services to meet the needs of the transportation disadvantaged. The city already has revised its taxi ordinance and started to negotiate with the taxi operator to establish a fare subsidy for the rider.

TRANSPORTATION FOR THE ELDERLY AND HANDICAPPED

In planning public transportation for elderly and handicapped people, UMTA and IMTIP are concerned about the lack of citizen participation in the development and implementation of service and the duplication of expensive services that human service agencies provide. IMTIP has promoted greater local participation by encouraging the development of TACs that are a strong representation of local service providers, users, and community leaders. The primary objectives of these TACs is to search for methods to avoid duplication of efforts and to promote cooperation in fuel purchase, maintenance service contracts, and insurance policies.

The use of TACs in these rural counties allows human service agencies to have more input into the planning process than is possible with traditional transportation planning. In addition, the agencies are able to understand the total transportation problem and how their service fits into it.

Plans are being prepared, or have been completed, in 26 of the state's 82 rural counties. As stated earlier, emphasis has been switched to doing plans according to the boundaries of the regional plan commissions. TACs have been started in nine counties.

IMTIP's role in these elderly and handicapped studies is that of moderator and consultant—to help the human service agencies identify transportation problems and then show them what their contribution is to solving the problem. The emphasis of this approach is on the end

product—a coordinated public transportation service that satisfies the unmet travel demands of the elderly and handicapped. The agencies' values and perspectives have to be changed, which requires IMTIP to design the transportation system to achieve specific, mutually agreed on objectives.

CONCLUSION

IMTIP's success is measured by how well we satisfy the needs of our clients (service agencies, to provide effective and efficient public transportation. IMTIP's goal is not just to produce a plan but to produce a plan that is implemented because it is compatible with the communities' common purpose of providing the public transportation that the community wants.

Statutory Barriers to Coordination

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This paper reports on an initial investigation of statutory barriers to coordination, especially concerning transportation, evident in seven pieces of federal legislation. Using data collected from three American cities, the study found that most of these statutes encouraged or mandated various forms of coordination. All included provisions that could prove to be barriers to coordination, such as inconsistent federal-local matching ratios, differing definitions of a handicapped individual, differing planning cycles among the programs included in this study, and state and local interpretations of federal audit provisions.

Much investigative research has been done during recent years on existing coordinated transportation systems. Many studies noted some degree of statutory or regulatory barrier to coordinating transportation services, but later works show that many of the earlier assumptions in that regard (e.g., eligibility and commingling of client groups) may have been overstated.

Ecosometrics has had extensive experience with agencies administering transportation and social service programs at the federal, state, and local levels. We have found that many such agencies are reluctant to even attempt to pool resources into a coordinated transportation system, due mainly to administrative or fiscal constraints (e.g., conflicting accounting, billing, and reporting procedures) or regulatory barriers.

For example, it has been noted that programs that reimburse clients for transportation on an individual basis require detailed, accurate records of each client's trip in terms of trip purpose, fare for transportation, and so forth. Thus, separate reporting systems and special billing systems would be required for a coordinated system. Transportation projects that include resources pooled from several different federal programs must also maintain separate accounting systems for each participating program in order to be adequately prepared for federal, state, or both, project audits. These requirements place an enormous administrative burden on a transportation system that is also attempting to overcome state and local barriers to coordination. Agencies that attempt to orchestrate such coordinated transportation efforts can be severely hampered by these requirements. If an integrated accounting, billing, and reporting procedure could be developed that would be

applicable to large urban settings as well as smaller cities with relatively unsophisticated service delivery systems, much of the current reluctance to pool resources for coordinated transportation might be overcome.

Based on our experience in the field, we believe that the regulatory barriers to coordination can be traced to one of three sources:

1. Statutes that generate the regulations,
2. Interpretation of those statutes at the federal level that result in the regulations, and
3. States' interpretation of federal regulations and their guidelines or rulings that are superimposed on the federal regulations.

We have been given the chance to test our assumptions with respect to the statutory and regulatory barriers to coordination and the unified billing and accounting systems. In November 1977, Ecosometrics Incorporated contracted to conduct a study of the feasibility of coordinating human services and public transportation in three American cities of differing size: Roanoke, Virginia; Philadelphia, Pennsylvania; and San Antonio, Texas. A major component of that study is an analysis of the statutory and regulatory barriers to coordination. The federal statutes selected for study were those that governed those programs appearing most often in the baseline data we collected during sampling visits to the three cities. The analysis will be reviewed by relevant local- and state-level agencies and by key personnel in each of the federal agencies administering the program in question.

We are also preparing model unified accounting and billing systems for coordinated transportation to be reviewed at the federal, state, and local levels.

We have completed the statutory barrier analysis; the findings are discussed in this presentation.

The following statutes for barriers to coordination, as well as provisions that encouraged coordination, were reviewed:

1. Urban Mass Transportation Act of 1964, as amended;