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### Authors

Fielding, Gordon J.  
Lyons, William M.

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# **Performance Evaluation for Discretionary Grant Transit Programs**

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Gordon J. Fielding <sup>1</sup>  
William M. Lyons <sup>2</sup>

<sup>1</sup> School of Social Sciences and  
Institute of Transportation Studies  
University of California, Irvine

<sup>2</sup> Transportation Systems Center  
U.S. Department of Transportation  
Cambridge, Massachusetts

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Institute of Transportation Studies  
University of California, Irvine  
Irvine, CA 92697-3600, U.S.A.  
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## ABSTRACT

Discretionary grant programs have been popular with State legislatures as a mechanism for extending the benefits of transit programs to small cities and rural areas as well as stimulating innovations in urban areas. This article analyzes state discretionary grant transit programs in California and Minnesota using the criterion of effective administration. The purpose is to develop a framework for understanding administrative problems that result when state discretionary transit programs do not have adequate objectives. Without explicit objectives, selection, monitoring, evaluation, and overall management is weak. Project performance is reduced and scarce public funds are wasted. Recommendations include: that legislatures make explicit the mission and goals of discretionary programs; that administrative agencies define measurable objectives and administrative guidelines; and that local grant recipients be granted funds only after specific objectives and performance standards have been presented.

Although this research is based on the Minnesota and California discretionary grant programs, the framework is general and applicable to other states. The intent is not to advocate or reject the discretionary method or to criticize programs in these two states. Rather, the purpose is to clarify problems, and to make recommendations to strengthen the discretionary method as a viable alternative for allocation of state transit funds.

#### Discretionary Allocation Procedures

The distinction between discretionary and non-discretionary or formula allocation methods is a matter of degree, rather than precise categories. In discretionary programs state agency administrators exercise choice in subsidy decisions whereas in non-discretionary programs, funds are allocated according to some formula such as population or proportion of annual deficit. Discretionary programs are attractive for states with specific program objectives. Examples of such objectives include demonstrating innovative transit techniques, providing service to target groups, such as the elderly, or focusing on particular transit related problems, such as automobile congestion during peak hours.

Although administrative discretion may be unconstrained by formulas, there are degrees of constraint caused by formal rules or informal influence. Even a program based on reimbursement of deficits, as in Minnesota, is discretionary only to the degree that funds are available for the program. When local requirements are less than or equal to funds, decisions are not required and the program is non-discretionary.

However, when demand is greater than funds, administrators are forced to accept or reject everything from line items on budgets, to cost overruns and entire projects. The California transit demonstration program, authorized under Senate Bill 283, (California Statutes of 1975, Chapter 1130) is more discretionary since it allows greater administrative choice within the funds appropriated. Legislative and agency goals are general, there are no match requirements, and project selection is primarily subject to informal criteria.

#### Administration of Discretionary Programs

To understand the administrative problems caused by inadequate objectives in state discretionary programs, it is necessary to consider the activities of and relations between the state legislature, the state administrative agency, and the local grant recipient. Figure 1 is a generalized model of these activities and relations. By enabling laws, the legislature determines a policy direction and the long-range goals for the program. The legislature also approves funding. Legislative goals might include improved mobility for the transit disadvantaged, development of rural paratransit, bus replacement, or reductions in automobile pollution, congestion, and fuel consumption.

The agency should follow this policy direction, and develop specific program objectives, and guidelines and procedures to administer the program. These objectives are derived from the legislative goals, and are stated in specific, often quantified terms. Guidelines and procedures, particularly for project selection, should reflect

legislative priorities, and provide for the orderly implementation of the program. Agency discretion is subject to the enabling laws and the agency's own regulations.

Applicants--counties, cities, and transit districts--are informed of program objectives through agency guidelines. To assure selection of their projects, applicants conform to agency objectives, and indirectly to legislative goals. The agency then accepts or rejects applications using criteria defined in the guidelines.

The overall administration of the program involves a system of interrelated elements. Figure 1 illustrates the interdependence of goals and objectives at the three levels. For example, a rural transit district's objective to provide 2,000 annual trips for elderly residents to nutrition centers would be consistent with a legislature's goal to meet the needs of the transit dependent, and an agency's objective to coordinate and improve services provided by several social service groups.

Agency objectives and project guidelines which aid in selection of local recipients and in the development of performance objectives and standards and procedures for monitoring performance. Through these procedures the legislature intends to achieve maximum transit performance. Performance includes two elements--efficiency and effectiveness: efficiency concerns the processes by which transit services are produced, particularly through the relationship of inputs to produced outputs.<sup>(1)</sup> Effectiveness concerns the extent to which service consumed corresponds to the goals and objectives established for it by government (Figure 2).

Clearly stated objectives are essential when discretionary grants are intended to demonstrate transit techniques. A project that has vague or ambiguous objectives is valueless as a demonstration. Since the goal of any demonstration is to learn something, it is essential that outcomes be evaluated according to these objectives. Only when we understand why a particular outcome resulted and how it affected the project's objectives will we learn something about the technology or technique being demonstrated. (2)

Failure to provide explicit objectives causes problems within the objective-setting subsystem, and ultimately reduces overall program performance. The California and Minnesota programs illustrate the validity of this assertion. Problems that result from inadequate objectives are identified and changes are recommended in: 1) project selection; 2) project evaluation; and, 3) monitoring and accountability.

#### California and Minnesota Programs

Although the California SB 283 and the Minnesota Department of Transportation (Mn/DOT) deficit subsidy programs have important differences, both employ procedures that approximate the objective-setting and administrative model in Figure 1. Also, both are examples of different types of discretionary programs. In each state, legislatures set program policy and goals, Mn/DOT and the California Department of Transportation (Caltrans) develop program objectives and guidelines, and local recipients set project objectives in their applications.

The Minnesota deficit subsidy program allows less administrative discretion than that of California. Funds are available only for operating costs, and a one-third local funding match is required. Agency administrators have discretion in project selection and determination of levels of support. Mn/DOT administrators make frequent decisions on whether or not to fund cost-overruns and new or continuing projects. This degree of "discretion" will increase as local demands increase and administrators are required to make more decisions.

#### CALIFORNIA SB 283 PROGRAM

In 1975 the California Legislature passed SB 283, (California Statutes of 1975, Chapter 1130) which established a three-year program providing funding assistance for demonstration projects. The program included the following sections:

- 1) Section 5 - Bus Transportation Demonstration Projects:  
(\$2,000,000)
- 2) Section 6 - Rural Public Transportation Demonstration Projects:  
(\$1,000,000)
- 3) Section 9 - Public Transportation Projects: (\$1,000,000)

The Legislature set several goals for the program. Projects were to include but not be limited to projects to determine:

- 1) Disincentives for motor vehicle and low-occupancy motor vehicle use.
- 2) Programs for low-mobility groups.
- 3) Effects of rules on transportation systems.
- 4) Effects of publicly owned transportation systems competing with private systems.



- 5) Improved transit management.
- 6) Coordinated service techniques.
- 7) The feasibility and demonstration of a single-coordinated social service delivery system.

Funds were also allocated for rural projects to include but not be limited to, Dial-A-Ride services and other paratransit systems capable of offering flexible scheduling and routing and of being operational within six months of approval.

SB 283 directed Caltrans to adopt guidelines for allocation of funds, and project evaluation. The Caltrans guidelines repeated the above objectives, specified the content of applications, and listed project eligibility and selection criteria.

Applications were to include the following:

- 1) A statement of what is to be demonstrated and expected results and benefits.
- 2) A description of project activities.
- 3) Data establishing a need for the project.
- 4) A project schedule and plans for continuation beyond the demonstration period.
- 5) Identification of participating organizations.
- 6) Proposed project budget and a breakdown of fund sources.
- 7) Description of how project will be monitored and the guidelines for project evaluation.

Projects were to be selected based upon a rating assigned using criteria including:

- 1) Relative cost-effectiveness.
- 2) Consistency with local and regional plans.

- 3) Compatibility with community needs.
- 4) Quality of proposed evaluation guidelines.
- 5) Relevancy of expected results and benefits of the project to other localities.
- 6) Degree of innovation.
- 7) Ability of the applicant to manage, monitor, and report on the project.

### Project Selection

The SB 283 program developed agency objectives and application guidelines consistent with legislative goals and required applicants to specify objectives. Problems arose in selecting projects. The selection criteria were not strictly related to the legislative and agency goals and when they were, relied upon subjective criteria. For example cost-effectiveness is the weakest concept in transit performance measurement. It confuses input with consumption measures so that low cost, but underutilized projects are regarded as favorably as high cost, heavily utilized projects. Also, "consistency with local and regional plans" and "compatibility with community needs" are too subjective to have been useful in project selection. Projects were selected that were inconsistent with goals and objectives, that did not meet local needs, or that were proposed to meet non-existent needs. Limited success of the initial demonstration projects can be explained by poor project selection, as well as by problems of monitoring, evaluating and administrative control.

One SB 283 project used its grant to continue funding an existing recreational bus project. Contrary to the proposal, the project was

neither a demonstration of an innovative transit technique, nor was it clearly directed toward a transit dependent group. The project's objective to "expand the horizons" of a low income group was too vague to determine whether enough expected benefits would be gained to justify funding. More details must be provided on the types, numbers, and needs of individuals to be served. For example, the project did not distinguish target from non-target riders and transit funds were used to subsidize on-going recreational service to the general public. Although these results should have been detected through monitoring and evaluation, improved project selection based on clear and accurate objectives would have restructured this project.

Other projects were approved with unrealistic and overly ambitious objectives. A project to research constraints to paratransit, and to collect data on current and duplicated service and unmet needs, set objectives far out of proportion to its funding. By selecting a project that could accomplish only a fraction of its stated objectives, Caltrans reduced its ability to direct funds toward a demonstration of specific applications.

Projects were also approved with vague and ambiguous objectives. A regional agency project to coordinate demand responsive transportation provided by local social agencies confused ends and means. "Coordination" was listed as an objective, without stating how improvements over existing services or satisfaction of community needs would be achieved. The intended objective--to reduce duplication and costs of existing service--had to be implied. Existing duplication was

not shown in the application, nor were measurements taken to establish that the project successfully reduced costs. Confusion among participating groups over what coordination actually meant resulted in disagreement over what the project was intended to accomplish. Only at the project's completion was it apparent that: 1) many services had been coordinated before the project; 2) several agencies were disinterested in coordination as defined by the regional agency; and, 3) participating agencies did not separate transportation costs from total agency expenditures, making it difficult to evaluate cost efficiency.

Other projects faced serious problems because of a failure to define needs and other relevant background information in the application. This occurred despite guideline requirements that information be provided on needs, participating organizations, and other data "necessary . . . to evaluate the application." A brokerage project had low ridership because its subsidized rides suffered from competition from existing free service provided by the transit district and social agencies. The project relied heavily on referrals from apartment managers, taxi companies, and social service agencies. Refusal of these groups to cooperate, competitive services, and problems under a previous project at the same site should have been determined before the grant was made. Caltrans might have used this information to conclude that brokerage should have been demonstrated at another site.

Project selection should have required clear and consistent objectives, demonstration of existing needs and cooperation of involved groups, and an understanding between Caltrans and recipients of how

performance would be demonstrated. Applicants should also have been requested to submit information on project constraints. By approving projects with unrealistic or ambiguous objectives, Caltrans reduced its ability to control specific transit applications to be demonstrated under the program, and to monitor project progress.

Political influence was also responsible for selection of some projects. In discretionary programs, administrators are under considerable pressure to "spread the projects around." Clearly defined, quantitative objectives and selection criteria limit the political role in project selection. They can assist a state agency to respond professionally to requests by elected representatives.

#### Project Evaluation

Problems associated with evaluation are related to the failure to define needs and objectives. Evaluation is not possible unless there are standards or targets against which to measure actual performance. Thorough evaluation requires: 1) explicit objectives, quantified whenever possible; 2) techniques for measuring both the efficiency and effectiveness of each project; and, 3) appropriate data collection and reporting. If a project is designed to provide elderly persons with trips to social service agencies, this performance must be targeted in objectives, measured, and evaluated. Efficiency indicators of miles and hours and costs per mile and hours of service are important, but do not give a complete picture of effectiveness-services consumed by or needs met for the target group.

Many projects were funded without clear evaluation criteria, contrary to guideline requirements. One project provided objectives that met program requirements, but not evaluation criteria. In review of this project, it was not possible to determine cost-effectiveness. Another project had cost control objectives that could be evaluated with efficiency measures. However, evaluation was limited because there were no target cost standards to define acceptable performance.

Inadequate data reports also limited evaluation. Outside funds were combined with SB 283 funds, and program funds were spent in ways other than those specified in applications. Consequently, it is difficult to distinguish what SB 283 inputs produced particular outputs. Inadequate budget requirements and lack of periodic audits reduced data available for evaluation. As a result, important conclusions on applications of transit techniques to specific types of communities were ultimately lost.

#### Control and Accountability

Periodic data reports and agency monitoring would have revealed that one project offered service indiscriminately to the general public, rather than exclusively to the target group. It would also have been possible to predict cost overruns on some projects and the exhaustion of a 12 month budget in 9 months on another project. In one project, program costs were not distinguished from normal operating costs, making it difficult to distinguish project from general funds, and to determine exactly what was accomplished. Early detection of these problems through periodic monitoring and comparison of actual to expected performance and

expenses would have allowed Caltrans to work with local managers to make adjustments. In many cases this might have resulted in improved performance.

The structural lines between Caltrans, their district offices, and regional planning agencies are not strong lines of control and accountability. The administrative responsibility of each agency for the program is not clear. Regional agencies certified projects for consistency with short and long-range plans, but had no formal role in project development or monitoring. District offices assisted in preparation of applications, but faced possible conflicts of interest when asked to monitor projects, since they solicited and sometimes designed projects. Recipients were largely left to themselves. With no matching local funds required, there was little motivation for local control.

The SB 283 program's control and accountability problems indicate that neither state nor local management was effective. Both were diminished by the program's structure. Community involvement and concern was less likely because no local funds were spent. Local operators lacked clear incentives to administer competently or to improve performance. And performance criteria were seldom defined in a way to facilitate control or evaluation.

#### THE MINNESOTA EXURBAN SUBSIDY PROGRAM

The 25 "exurban" transit projects subsidized by the Minnesota Department of Transportation (Mn/DOT) under the Public Transit Operating

Assistance Program (1977-1979) illustrated similar problems to those described for California. Excluded were all Twin Cities metropolitan transit operations, and all projects funded under the Paratransit Demonstration Program. During the 1977-1979 biennium, \$4 million was allocated and used to assist these "exurban" systems with operating expenses. For the biennium, these subsidized systems provided for 8,505,000 bus miles in 161 transit vehicles carrying approximately 14,178,000 unlinked passenger trips.

These projects can be divided into two types. The first is regular fixed-route, including projects as diverse as the 101 bus system in Duluth and the single bus system in Becker County, which follows a fixed but different schedule each day. The second is paratransit, including projects as diverse as subsidized taxi and volunteer driver programs, Dial-A-Ride, and route deviation projects.

Legislative goals for the program are stated in Minnesota Statutes (1976), Section 174.21. These are to increase vehicle occupancy, to reduce the use of single occupant vehicles, and the associated congestion, pollution, energy consumption, highway damage, and other costs, and to increase the productivity and efficiency of transit systems.

Objectives relevant to the regular route program are stated in the 1978 Mn/DOT State Transportation Plan. These include:

- 1) coordination of transportation service;
- 2) cooperation with intercity bus lines;
- 3) alleviation of transportation problems of the elderly and handicapped;



- 4) encouraging and sponsoring ride sharing programs.

Mn/DOT has final authority to grant financial assistance not to exceed two-thirds of the operating deficit to the exurban projects, and may require local contributions as a condition for receiving the grant.

Typically projects receive annual grants for two-thirds of their operating costs. However, the program is partly "discretionary," since recipients must apply annually, and receive grants subject to Mn/DOT approval. Administrators exercise discretion over costs including budget line items, service changes, overruns, and new projects.

Mn/DOT has responsibility to establish the procedures and standards for review and approval of applications, and for evaluating and monitoring performance (Minnesota Code of Agency Rules, Vol. 14 Sections 1.4025-1.4028). Each application for a grant must include a description of local organizational structures, a management plan, and a financial statement.

#### Project Selection.

The Mn/DOT program was unable to limit selection and allocation to projects with objectives that were clear, realistic, and consistent with program objectives. Local objectives were formed independently, since recipients lacked a clear idea of Mn/DOT program objectives. Small projects often had unstated or very general objectives. Many objectives must be implied from route and fare policies which appeared to direct service to particular groups. Grants to subsidize service to elderly, handicapped, and low income student groups were clearly consistent with

Mn/DOT's objectives. Other grants used to provide tourist shuttles and 10¢ rides to middle income commuters were not clearly consistent with program objectives. One planner stated that the goals of his project were to survive, to be viable in the future, and to maximize receipt of state and federal funds. If these projects had other unstated objectives, or if results were intended to be consistent with Mn/DOT objectives, this should have been explicit.

The Mn/DOT program required less information than Caltrans did of its applicants. Mn/DOT required a needs statement, but what it received was of varying quality. The range was from a consultant's formal needs assessment, detailing trip patterns and age and income group mobility, to a brief letter from a local official with an opinion on local needs. Incomplete needs assessment was a particular problem when a project had objectives that were not clearly consistent with those of Mn/DOT. Grants to subsidize a group such as middle income commuters in one community, and not in others, must be justified by documenting particular congestion, pollution, or other local problems.

Mn/DOT lacked prioritized objectives and guidelines which would have assisted in project selection and amendments. Guidelines would have allowed administrators to make more routine decisions and to justify them.

#### Evaluation Problems

Mn/DOT evaluation also was limited by lack of specific performance standards for each project and data reports which precluded comparison because definition of data items was not consistent between projects.

Evaluation was primarily of efficiency, which can be indicated through simple ratios. Mn/DOT required all projects to report data on revenues, operating costs, and service outputs of passenger trips, vehicle miles, and in some cases, vehicle hours. Input-output ratios provided useful information on current costs and trends and a reasonable evaluation of those projects with objectives to provide rides to large numbers of passengers in the most economical manner. The result of overall evaluation was a table of performance measures for all projects. This encouraged unfair comparison between the low passenger cost of urban projects with the high costs of rural projects. Objectives other than cost items were not successfully evaluated. For example, Mn/DOT was not able to evaluate how well projects satisfied objectives that direct service to target groups, such as transit dependents, or to target destinations, such as social service centers.

#### Control and Accountability

As with the California program, the links between Mn/DOT and its grant recipients did not represent strong lines of control and accountability. This is in contrast to the structure and roles represented in Figure 1.

Mn/DOT expected that concern for community funds invested would result in local control and evaluation of transit services. However, several factors reduced local control. Local staffs and techniques were limited, and evaluation was usually limited to ratio measures. Mn/DOT allowed recipients and recipients allowed their contractors to proceed

independently until complaints occurred. This resulted in a form of "crisis management," rather than routine evaluation, anticipation of problems, and timely agency intervention. Mn/DOT exercised some control through good personal relationships between individuals representing the agency and the recipients. However, this is not a reliable source of management control.

#### OBJECTIVES AND EVALUATION

California and Minnesota case studies illustrate how administrative problems occur when objectives are not explicit. As a result, selection, monitoring, evaluation, and overall management of projects is weak. Ultimately project performance is reduced and scarce public funds are wasted.

##### Project Selection

The process through which significant and realizable projects are distinguished from weak projects is diminished by unclear policy directions and goals from legislatures, vague agency objectives, and incomplete guidelines. Priorities for goals such as reduced pollution, demonstration of innovative techniques, or target group mobility should be communicated by the legislature to the agency either through legislation or with the appropriation. The agency should develop specific and quantified objectives to meet the legislature's program goals, and administrative procedures for implementing the program. Lack of legislative direction forces agency administrators to set policy

through decisions that should be made at a political level. It creates a climate in which administrators are cautious about making decisions resulting in tentativeness and inconsistency that deters progress toward state goals.

Weak projects can be selected even when there is an attempt to state clear goals and objectives and to provide selection criteria. Failure to collect thorough and accurate information on the community background for the proposed project can result in approval of redundant proposals or the continuation of experiments which have failed. Information is required on community needs, participating and affected groups and their attitudes toward the project, and whether similar projects have been attempted and results. Complete needs assessment and identification of constraints is expensive and controversial, and will not be undertaken unless applicants believe that this information will help to qualify their project.

State agencies face two important constraints in their attempts to improve project selection. First, local information and state audits for accuracy are limited by lack of resources. Second, despite thorough information and concise objectives, there is no assurance that project operators will attempt what they have set for themselves, unless there are incentives and monitoring. However, agencies contribute to selection difficulties with imprecise objectives. Without explicit program objectives and guidelines, applicants neither feel obligated nor able to state objectives other than superficially.

Evaluation: The evaluation of discretionary programs is not possible without standards against which to measure performance. Without explicit

agency objectives, the legislature cannot evaluate the program. And without specific targets for each project, it is not possible to evaluate performance and provide a complete description of accomplishments.

Performance evaluation requires analysis of efficiency, effectiveness and impact (Figure 2). In both California and Minnesota, evaluation was primarily of efficiency as indicated through input-output ratios. Objectives other than efficiency were not successfully evaluated, although they were specified in authorizing legislation. Evaluation of impacts, such as reducing automobile use, improving environmental quality, or demonstrating innovative techniques must be completed, if these are the results that the project sought to achieve. Although it will always be difficult to measure these impacts, it can be accomplished, if measures are defined when submitted for funding.

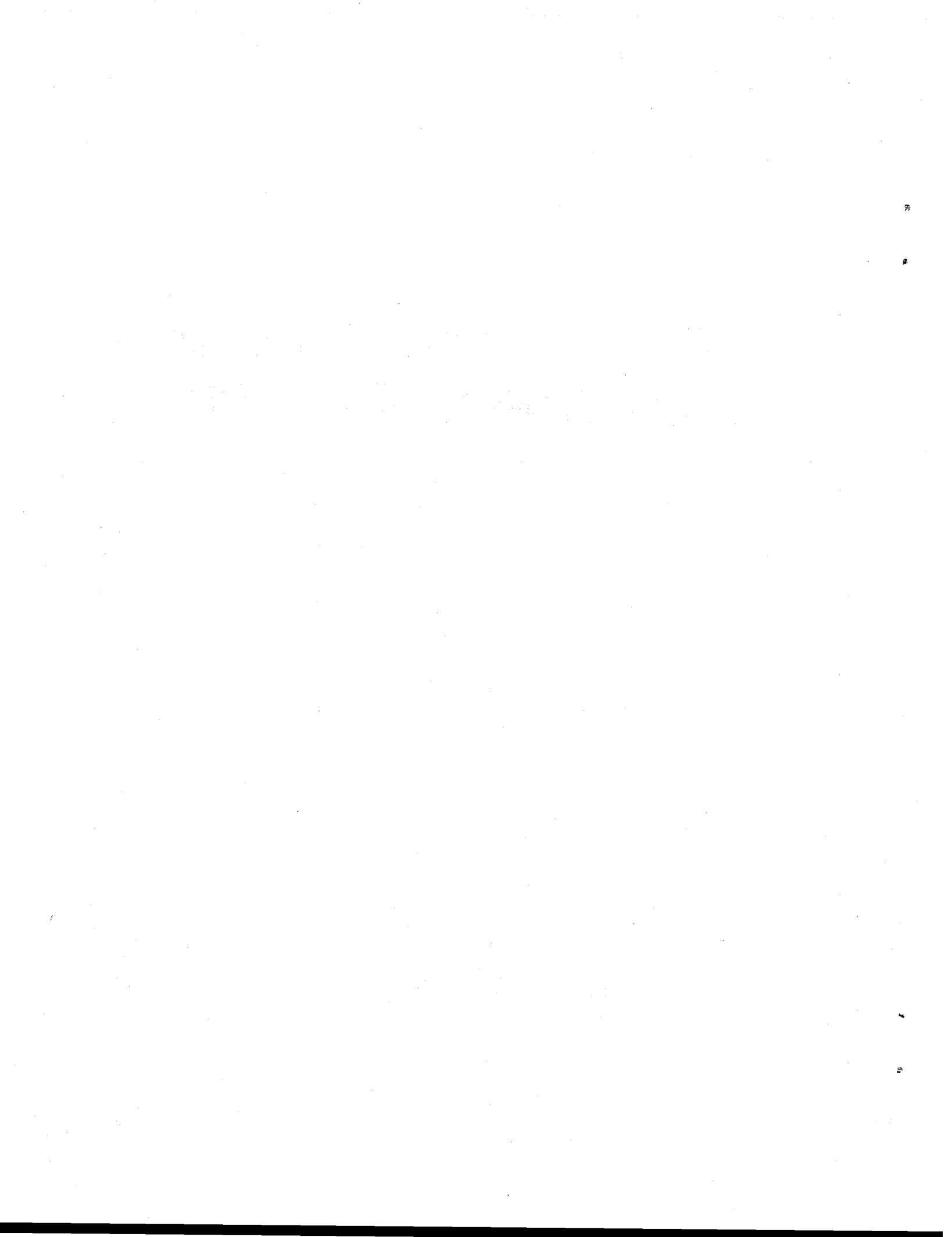
Expenditure of scarce funds for one project rather than another cannot be justified, and conclusions on important demonstrations cannot be reached, without evaluation of effectiveness and impacts. This can only be done by establishing explicit program and project objectives, because effectiveness and impact indicators evaluate accomplishment against some guideline or standard. Explicit objectives can be expressed in terms of performance measures, including standards for trips or miles of service to be provided for target groups. The same performance measures can then be used to measure results. Merely stating what happened is insufficient. We need to understand why performance guidelines were or were not achieved.

There should be a formal evaluation before applications are approved. Objectives selected must have measurable results and there must be a clear understanding of expected performance. Reports should be required which are performance oriented, periodic, and provide complete information on expenditures. There should be a quarterly monitoring of expenditures to assure that funds are spent for the purposes for which they were allocated. Each discretionary program should have an audit guide developed for this purpose. Evaluation should be continuous and permit the state to assist project managers as problems are detected.

REFERENCES

1. G.J. Fielding, R.E. Glauthier and C.A. Lave. Performance Indicators for Transit Management. Transportation, Vol. 7, 1978, pp. 365-379.
2. P.W. House and D.W. Jones. Getting it Off the Shelf: A Methodology for Implementing Federal Research. Boulder, Colorado: Westview Press, 1978, pp. 154-155.





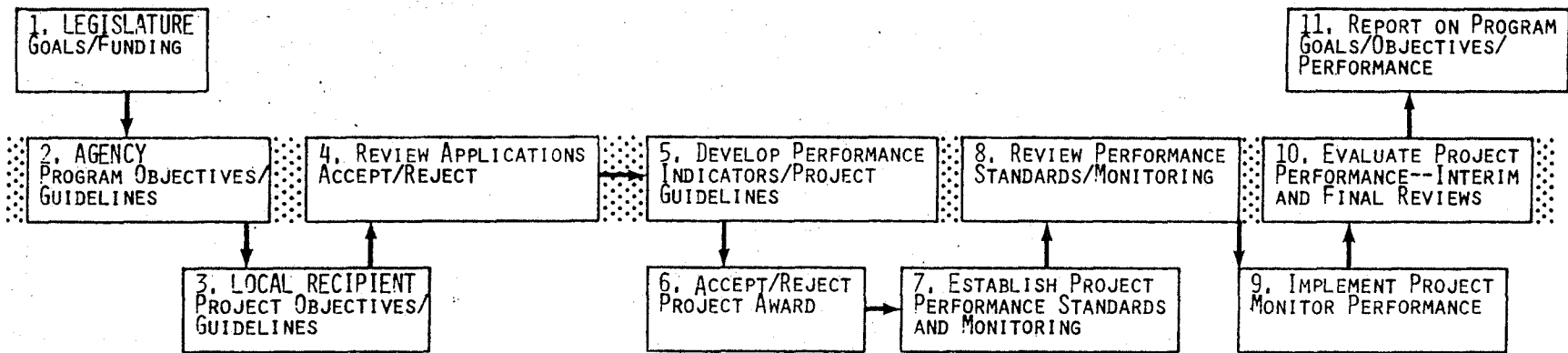


FIGURE 1 DISCRETIONARY GRANT PROGRAM MODEL

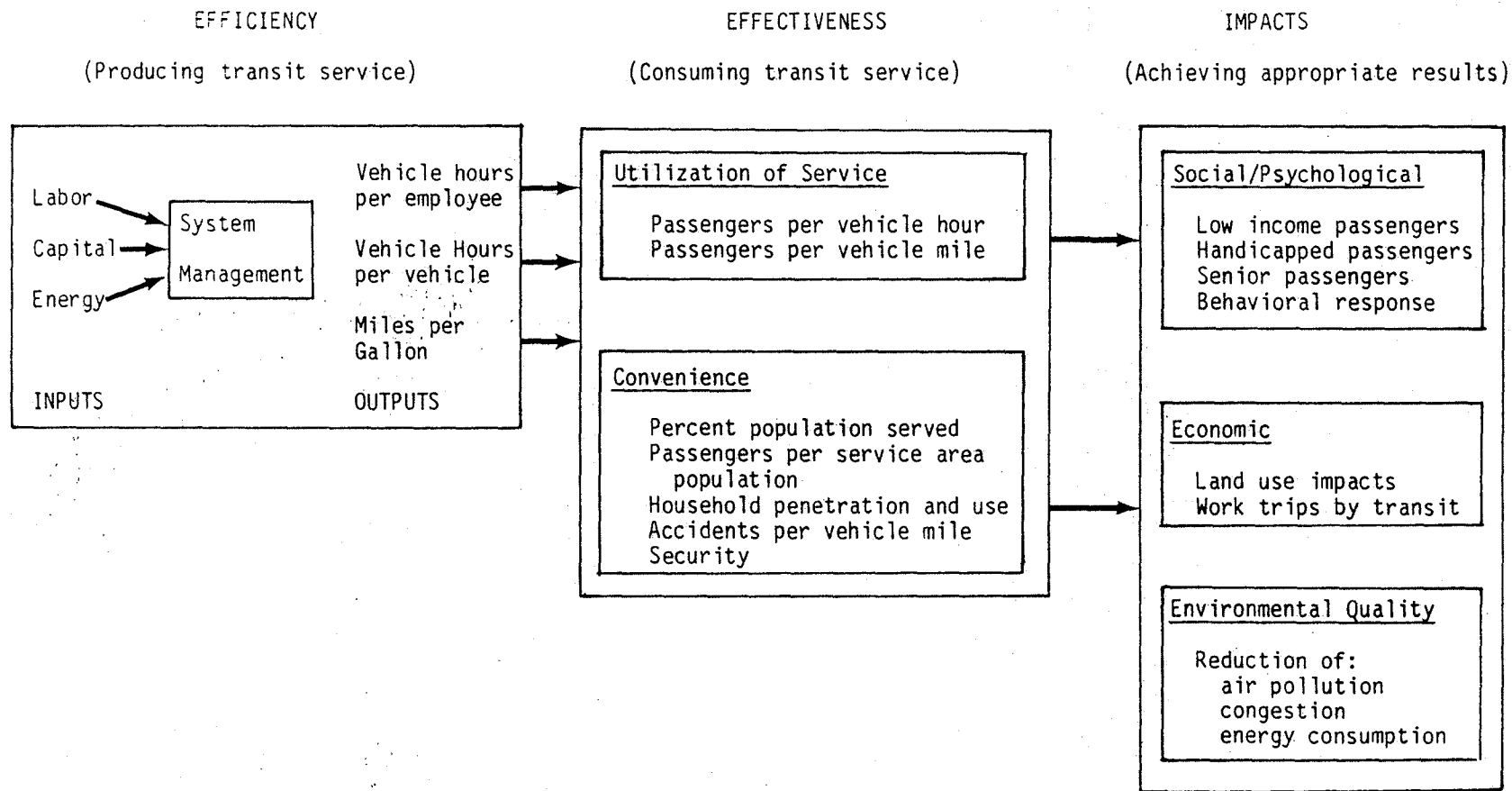


FIGURE 2. FRAMEWORK OF SYSTEM PERFORMANCE