

Linking Strategic Planning and Budgeting: A Case Study of the New Jersey Department of Transportation

CHRISTINE BISHOP-EDKINS AND THOMAS A. BIRKLAND

Strategic approaches to planning and management in the public sector are becoming accepted. Clearly, formal long-range planning that simply projects current trends into the future is wholly inadequate for managing government agencies in an environment with ever-changing political, economic, and legal considerations. Indeed, the benefits of strategic approaches to managing business are well demonstrated in the public sector. The implementation of strategic plans through the annual budget process is discussed. During the past year and a half, the New Jersey Department of Transportation (NJDOT) has developed a strategic planning process under the direction of a strategic planning task force consisting of the commissioner of transportation and other senior management. Over the course of the process, department and division level missions, objectives, and strategies were drafted. On the basis of these, implementation plans were developed that linked planning intentions to the resources needed and available to carry out programs. With the addition of budget-oriented performance measures to the implementation plans, the strategic planning and budgeting processes were joined. A key addition to the implementation plans for future cycles is the inclusion of resources dedicated to resolving critical issues faced by NJDOT.

The New Jersey Department of Transportation (NJDOT) was established by the state legislature in 1966 as the nation's first state department of transportation. In addition to designing, constructing, and operating nearly 2,250 mi of state highways under its jurisdiction, the department also works with counties and municipalities to provide for secondary roads. Because New Jersey is located between two major metropolitan centers, New York and Philadelphia, the department must facilitate the flow of people and goods by coordinating its efforts with a number of independent agencies and authorities, some of which span two states. As a consequence, the department is responsible for a broad range of activities that make it central to most transportation decisions in New Jersey.

Like many departments of transportation, NJDOT must manage a highly complex and varied system. The state's 34,041-mi state and local highway system is the most intensively used in the nation; the number of vehicles using each mile of highway per day is more than 3.4 times the national average. With the exception of two years with gasoline shortages, highway use has increased every year since the 1960s, and it is expected to continue to increase through the 1990s (1,p.31). The system involves not only highways, but also extensive bus and rail operations for public transportation, aviation, and bicycle fa-

cilities. After a lengthy hiatus, ferry services are reemerging to carry commuters between New Jersey and Manhattan. In addition to moving people, New Jersey's transportation system enables the shipping and receiving of large volumes of goods by highway, water, rail, and air.

Today, the major focus of the department, ensuring the safe and efficient movement of people and commodities throughout the transportation network, presents a number of challenges and important issues. Providing transportation no longer means simply designing and building roads. Rather, transportation managers must be aware of and address a wide range of issues and trends relating to land use, growth and congestion, environmental quality and quality of life, and the economic consequences of transportation decisions. Because of the combination of its large population yet small geographic area, New Jersey feels these forces perhaps more immediately and intensely than do many other states. In recognition of the need to address and respond to these issues, strategic planning and management were initiated at the NJDOT.

Over the past several years, a number of public sector organizations have adopted strategic planning and management techniques. Despite significant barriers to implementing techniques that are more compatible with private sector aims, state departments of transportation and public transportation agencies are finding that strategic planning and management provide an opportunity to improve public planning and managerial effectiveness (2,3).

OVERVIEW OF STRATEGIC PLANNING AT NJDOT

Strategic planning at NJDOT was initiated by the commissioner of transportation in January 1987. The reasons for initiating strategic planning were numerous. First, NJDOT recognized the need to anticipate and respond to future demands in a changing transportation environment, that involves increasing demands and more constrained resources. Strategic planning was expected to yield better justifications for state and federal funding requests, as well as a more effective allocation of these resources to high-priority initiatives. Second, the department needed a way to manage the continuing transition from its role as a highway department to a transportation department, with broad responsibility for and participation in statewide transportation planning and policy making. Establishing a department-wide vision of its mission and future would express this transition and serve to unify a large, diverse, and complex organization. Finally, in

Bureau of Strategic Planning, Division of Transportation Policy, New Jersey Department of Transportation, 1035 Parkway Avenue, Trenton, N.J. 08625. Current affiliation: C. Bishop-Edkins, 10 Harvest Lane, Perkasio, Pa. 18944. T. A. Birkland, P.O. Box 85493, Seattle, Wash. 98145.

an effort to ensure that the department was well managed and effective, NJDOT management sought to provide the highest degree of accountability. This could be demonstrated by providing useful, measurable performance indicators within the context of an overall strategic planning framework. In early 1988, a consultant presented the department with a reorganization proposal that provided the basis for a plan approved by the governor in April 1988.

An important element of the reorganization was the establishment of a Bureau of Strategic Planning in the Division of Transportation Policy in July 1988. One of the first tasks of the new bureau was to develop a strategic planning work program. After reviewing the experiences of other states, the bureau structured a fairly traditional strategic planning process at NJDOT. As with many public agencies that implement strategic planning, NJDOT established a committee to provide senior management oversight. The committee, called the "strategic scanning task force," comprised the deputy commissioner, the assistant commissioners, the chief of staff, and the executive assistant to the commissioner. Its first task was to draft the department mission, objectives, and strategies (MOS) statement for FY 1990. From little more than a mandate and a department MOS statement, NJDOT has made significant progress toward implementing and institutionalizing strategic planning. Nearly 30 divisions, offices, and other units, assisted by the Bureau of Strategic Planning, drafted their own MOS statements that supported the department-level mission. This process allowed managers and key staff to analyze and describe their overall purpose, clients, and work products. It also was an opportunity to express desired levels of work achievement.

After completing the MOS statements, the divisions and various other units prepared implementation plans (IPs) that translated their MOS statements into detailed, measurable action plans for FY 1990. In May 1989, it was determined that IPs would serve as budget planning documents for FY 1990 and subsequent years.

REASONS FOR LINKING STRATEGIC PLANNING TO BUDGETING

Moving from strategy formulation to implementation is critical to strategic planning efforts. Implementation involves a myriad of skills which involve coordinating, managing, and motivating many individuals (4,p.245). However, a strategic planning system achieves its full potential only when it is integrated with other control systems such as budgets (5,p.95). Steiner and Miner, who also emphasized the importance of linking planning and budgeting, stated that it is "the most universally used and central basis for translating strategic decisions into current actions" (3,p.35). In fact, the most successful implementation of strategic plans in the private sector has been accomplished with linkages to the budget cycle (6,p.10).

The NJDOT discovered that integrating strategic planning and budgeting is an important characteristic of successful strategic planning. Originally, the bureau expected only to introduce various strategic planning elements to the department managers during the first cycle. But since the implementation of these elements began to parallel existing budgeting re-

quirements, the commissioner requested that the strategic planning and budgeting processes be immediately integrated. By linking the two processes, the NJDOT has allocated resources to predetermined department and division priorities as expressed in the MOS statement's mission, objectives, and strategies. Although such an unanticipated early fusing of strategic planning and budgeting was not accomplished without difficulties, nevertheless, it was a positive occurrence in the evolution of strategic planning and management at NJDOT.

NJDOT BUDGET CYCLE

The New Jersey budget process involves the governor's office, the Department of the Treasury, the legislature, and the individual agencies. The budget process must meet the internal needs of department managers while fulfilling requirements imposed by the New Jersey Office of Management and Budget (OMB) in the Department of the Treasury. The typical budget process begins well before the beginning of the fiscal year, with the governor's office and OMB analyzing programs and costs before developing planning and budget targets. These targets are incorporated in a planning and budget circular, which is distributed to each department in April, 14 months before the beginning of the fiscal year. At the same time, the various departments of the state prepare long-range plans on the basis of instructions and projections distributed by OMB in February. These long-range plans are submitted to OMB on April 30, and are used as background for the preparation of the planning documents, which are submitted to OMB in mid-July. The planning documents provide OMB with the agency's goals and objectives, a sense of current external impacts, evaluation data, and reallocation and reduction contingency plans. In addition, the planning documents provide for priority requests, which are appeals for funding that constitute substantial increases in funding over the base budget for new or expanded initiatives. OMB uses these two elements to analyze the agency funding request, and the agencies negotiate with OMB in September on a recommended budget. In October, the agencies submit their final budget request, which is reviewed by OMB and the governor, and presented by the governor to the legislature in late January. The legislature holds hearings on the budget in March, so that the budget is in place as required by law before the fiscal year begins on July 1.

For budgetary purposes, the department is organized into 32 budget centers. For the most part, the budget centers are the same as the divisions, although, in some cases, a division and assistant commissioner's office are contained in one budget center. However, in the construction and maintenance area, the budget centers correspond to bureaus rather than divisions. In general, implementation plans are drafted for each budget center.

The internal budget process and its products are, in many ways, driven by outside requirements imposed by OMB. The New Jersey OMB has for several years required agencies to submit budgets and supporting documentation using strategic planning terminology; however, formal agency strategic planning was not a prerequisite to the preparation of such documents. With the introduction and advancement of strategic planning at the NJDOT, the relationship between strategic

issues and the resources needed to address these issues will become clearer and help to ensure that external actors in the budget process are aware of the issues that drive the department's budget.

STRATEGIC PLANNING ELEMENTS

As was described earlier, all divisions drafted MOS statements. Once these were in place, the Bureau of Strategic Planning recognized that the statements must be accompanied by detailed, measurable plans for implementation. Because implementation requires the use of resources, budgeting information was expressed in IPs. As shown in Figure 1, the IP consists of a spreadsheet developed in Lotus 1-2-3, with columns of information. The first two columns contain the objectives and strategies developed in the statements. In the third column, managers were required to list the various activities or the specific work that was to be accomplished to implement the strategy. For each activity, managers were asked to provide a performance measure to relate sources to results and to estimate the cost of pursuing particular strategies. This latter requirement was accomplished by allocating their total staff among the activities, expressed as person-years. Because salaries constitute the overwhelming expenditure in the operating budget in all areas except for some construction and maintenance operations, person-years were used as a proxy for all costs, including materials, supplies, and other nonsalary items.

Originally, the bureau asked that the person-years be developed unconstrained by budget considerations. However, when it became clear that the IPs would become the budget document work plans for FY 1990, it was necessary to ask that the divisions use their actual authorized staffing level and allocate their actual staff resources accordingly. Their FY 1990 dollars, derived from the spending plan developed jointly by each budget center manager and the department's Budget Division, were allocated among the strategies proportionally, on the basis of the staff time allocation. Although not a perfect method for estimating the costs of activities, the technique is useful for revealing the relative costs of strategies and activities, and, in many cases, demonstrates both the time and money that is spent on routine tasks.

Integrating strategic planning with budgeting at the NJDOT occurred much more rapidly than had been expected. Because

the strategic planning process was put into place and advanced fairly quickly, it started to parallel other existing management and budgeting tools. In particular, the IPs contained most of the information required by the department's Budget Division in the annual budget cycle. By the time it became necessary for budget center managers to provide resource information in the IP, it became clear to senior management that the maintenance of substantially similar budgeting and planning systems was needlessly duplicative and time consuming. In May 1989, the deputy commissioner suggested that the two processes be merged. The processes were combined, as shown in Figure 2, and the Bureau of Strategic Planning and the Budget Division staff briefed budget center managers on their responsibilities in providing budgetary information.

As strategic planning evolved internally, staff examined the budget process administered by OMB and implemented by the Budget Division. The important elements of strategic planning were designed to conform as closely as possible with existing systems, to preserve historical continuity, and to make managers more comfortable with the new process. The transition from the previous budgeting system to the new strategic planning and budgeting system was relatively easy because in most cases there was a one-to-one correspondence between the divisions that prepared the plans and the budget centers. The significant exception was the construction and maintenance units of the department.

STRATEGIC PLANNING AND BUDGETING FOR CONSTRUCTION AND MAINTENANCE

The construction and maintenance (C&M) units are organized, for the most part, according to four geographic regions as shown in Figure 3. Each region performs construction, maintenance, materials, and electrical engineering, and the managers of these units report to a regional C&M director. Central office oversight is provided in Trenton by the Division of Engineering Support and the Office of Operations Engineering. Unlike other divisions, budget center managers do not correspond to division directors, but, instead, to bureaus. For example, the manager of the Bureau of Maintenance Support supervised six budget codes that cut across divisions and regions. The responsibility includes not only maintenance support and maintenance engineering, part of the central office division, but also the maintenance and electrical units of all four regions.

<u>OBJECTIVE</u>	<u>STRATEGY</u>	<u>ACTIVITY</u>	<u>PERFORMANCE TARGET</u>	<u>PERSON YEARS</u>	<u>APPROP.</u>
1. Maintain assigned State highway system at an acceptable quality level to assure the safety of all users.	1. Maintain the highway lighting and signalization system at an acceptable level.	1. Ensure the timely response to and correction of all highway emergencies.	1. Respond to all calls within 8 hours.	1. 25	1. \$130.9
		2. Perform all group relamping.	2. Relamp 50% of 2000 traffic signal intersections and 1000 street light units.	2. 30	2. \$200.2
		3. Construct and maintain electrical facilities on the local highway system.	3. Inspect and service 172 signals & repair bi-monthly.	3. 50	3. \$30.0
	2. Perform routine landscape maintenance in accordance with standards.	1. Implement roadside mowing, spraying program, shrub and tree maintenance, and wildflower and other special planting programs.	1. Achieve 50% of the theoretical workload. Accomplish 2,200 miles of curb and guiderail spraying; 26,000 acres mowed.	1. 20	1. \$100.5

FIGURE 1 Example of implementation plan.

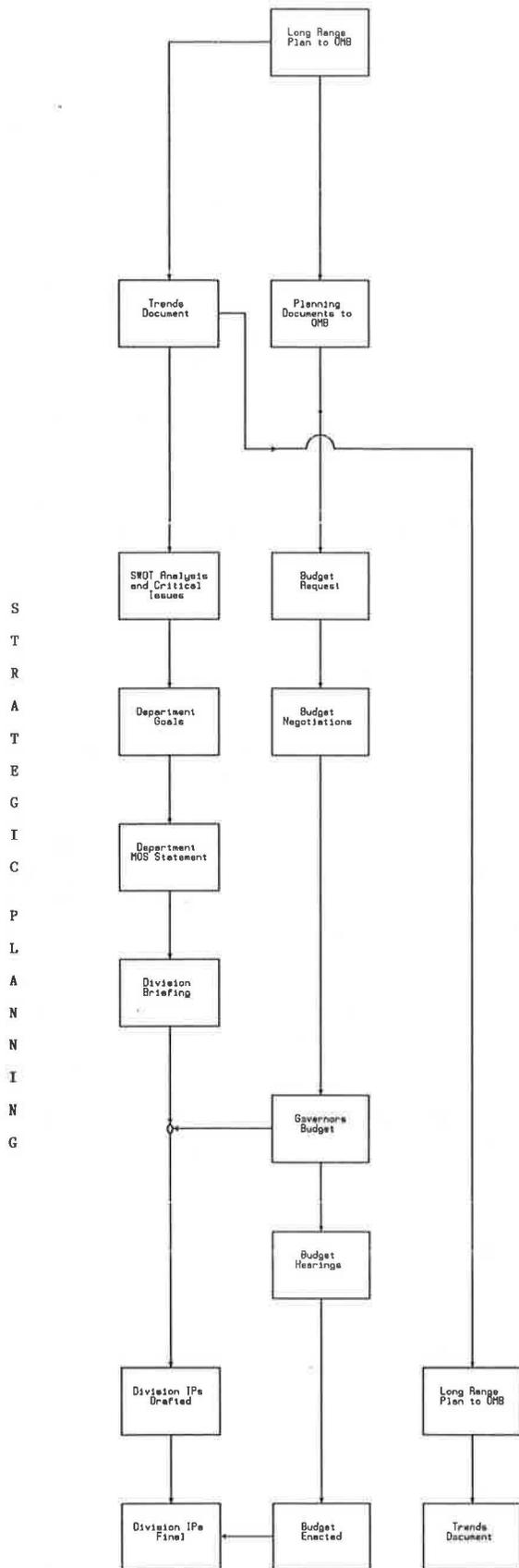


FIGURE 2 Strategic planning and budgeting cycle.

As in other areas of NJDOT, MOS statements were drafted according to function. Recognizing that all four regional offices were functionally similar, the regional directors all met to draft one MOS statement. In Trenton, the Office of Operations Engineering and the Division of Engineering Support drafted separate MOS statements, and strategic planning proceeded in a fashion similar to that of other divisions in the department.

This system worked reasonably well before budgeting was linked to the strategic plans; however, when the linkage occurred, it became clear that implementation planning according to function would be impossible. Originally, it was believed that each strategy would correspond to an individual budget code. Budget managers quickly indicated that there was no such correspondence and that each strategy could be addressed by one, two, or even eight budget centers. This problem was resolved by assembling all three draft IPs—those of the regional offices, operations engineering, and engineering support—and assigning the appropriate budget code or codes to each strategy. The plans were sorted by budget code, and draft IPs were developed for each budget center. These products will provide an excellent basis for future planning.

RESULTS

In general, the first combined strategic planning and budgeting documents were superior to previous work plan budget documents. One of the greatest benefits of the process was the improvement of performance measures. In the past, many measures did not necessarily highlight the most important work of each division. Also, the chosen measures often did not demonstrate the most meaningful aspects of performance. The strategic planning initiative forced managers to rethink measures; improved performance monitoring was the result.

Specifically with regard to the construction and maintenance area of the department, it became clear that there were three functional areas to concentrate on for strategic planning: construction and administration, equipment, and maintenance. In the case of maintenance, there were six separate budget codes; however, because the plans share common objectives and many common strategies, this new process allows managers to compare similar strategies across different functions. For example, maintenance managers will be able to compare training strategies in road, bridge, electrical, and landscape maintenance areas.

COMMON PROBLEMS AND SOLUTIONS

In any new and complex management initiative, problems are inevitable. Many of the problems experienced in the first cycle at NJDOT were caused by the newness of the process, while others were caused by the speed at which strategic planning and budgeting were joined. Whatever the reason, these problems should be of interest to any agency instituting strategic planning. Fortunately, none of these problems appear to be so severe as to be ultimately insurmountable.

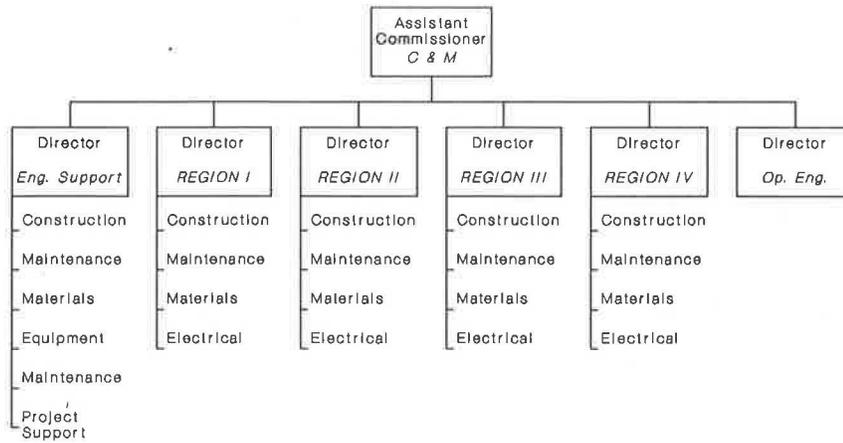


FIGURE 3 NJDOT Construction and Maintenance Division (simplified).

Inadequate Planning

A well-defined process must be in place before strategic planning is presented to managers. In the case of NJDOT, the process evolved as it occurred, which led to ad hoc planning. This was largely caused by a perceived need to institute the planning program as soon as possible, to seize the initiative while widespread enthusiasm still existed, and to gain valuable experience from the first year. While a certain degree of flexibility is important in instituting any new management tool, the unit responsible for developing and monitoring the process must be allowed the time for planning and preparation. The lack of planning caused the direction of the process to change a number of times, much to the annoyance of participants. Obviously, completing future cycles will be easier because the bureau has had a full year to define a process. However, to aid participants even further, a strategic planning handbook has been prepared.

Vague Staff Responsibilities

Because the integration of strategic planning and budgeting required coordinating the Bureau of Strategic Planning with the Division of Budgeting, there was some confusion among the divisions as to roles of budgeting and strategic planning staffs. In general, budgeting was most concerned with performance assessment and actual resource numbers. Strategic planning, on the other hand, worked to ensure that strategic thinking, in the form of MOS statements and IPs, preceded the development of budget documents. Confusion on the part of the divisions ranged from substantive problems, such as not translating performance measures from the old to the new system, to an unclear understanding of where to submit planning materials. In the next cycle, the Bureau of Strategic Planning will be clearly defining roles and responsibilities and working as a team with budget analysts.

Unclear Purpose of Process

When budgeting and planning functions reside in different parts of the organization, it is necessary for the purpose of

each process to be clearly delineated. To successfully join strategic planning and budgeting, the individual and combined purposes of each process must be understood by managers. Some divisions at the NJDOT were unclear about whether strategic planning was a new management tool or simply a new twist on the budget process. The MOS statements were perceived as strategic, but the IPs were considered to be little more than detailed budget documents.

One of the major thrusts of the upcoming new cycle is to make the division and the department participation more strategic and therefore, more distinct from budgeting. In the next cycle, submissions being made to OMB will be much more solidly grounded on strategic issues. These issues themselves will be thoroughly analyzed through a more structured environmental scanning process than had existed before. The Bureau of Strategic Planning recently published a document entitled *Trends Affecting the New Jersey Department of Transportation*, which analyzes important social, economic, political and technological currents that will influence the department's policies and operations in the 1990s. Information from this environmental scan was used to conduct a strengths, weaknesses, opportunities, and threats (SWOT) analysis with the assistant commissioners. The product of comparing the department's internal capabilities and shortcomings to external forces is a set of 10 critical issues. These issues, which by their definition must be addressed to ensure that the department's mission and objectives are achieved, include topics from managing congestion and mobility to ensuring management development and employee skills enhancement. Associated with each critical issue are key strategic goals to be attained by the department over the next fiscal year. Revisions of the department and division MOS statements that outline relatively timeless mission and objectives, as well as priorities, will reflect the outcome of these analyses. Likewise, division IPs will incorporate strategies and resources that support the achievement of these goals.

As the strategic direction accommodates shifts in internal policy and external factors, all MOS statements will change to reflect these priorities. Consequently, the IPs express the allocation of resources devoted to achieving priority items. They contain 1-year budget requests and estimated resources needs for the next fiscal year. Managers will be instructed to

prepare needs budgets, continuation budgets, or cutback budgets based on OMB projections on the fiscal condition of the state. Any new start items will be funded on the basis of their conformance to priorities outlined in the MOS statements and IPs.

These initiatives and others will demonstrate to managers that the strategic planning process is a tool that enables management to set priorities and that the IPs and the budgeting process are an expression of this work. In an effort to link the two processes, the bureau unintentionally promoted an overemphasis on resources, such as people and dollars, at the expense of addressing strategic issues. A better balance will be struck between these two elements in future cycles.

CONCLUSIONS

Like most organizations, public or private, NJDOT has discovered that strategic planning is a valuable tool for setting overall direction and priorities in a changing environment. In the first year of using strategic planning techniques, NJDOT found that drafting a department-wide MOS statement that articulated the mission, major objectives, and strategies of the department was critical. Using this statement as a framework, the various divisions drafted supporting MOS statements and detailed work programs in the form of IPs. The IPs formed the basis for implementing the MOS statement through the allocation of budget resources and the measurement of performance. Despite its difficulties, the NJDOT adopted the IPs as an internal budget document. Once the strategic planning and budgeting processes are completely synchronized with OMB's budget request timetable, much of the information will be used to develop the annual department long-range plan required by OMB. In addition, the bureau has determined that the documents are used for a

variety of management purposes including monitoring manager performance.

While the department is achieving implementation of its strategies using a joint planning and budgeting process, the implementation is, to a certain extent, mechanical. The Bureau of Strategic Planning intends to deemphasize formal process in future cycles and to focus instead on identifying strategic issues and successfully implementing strategies to address them. As the literature discusses, implementation involves a variety of factors aside from linkages to the budget process. New additions to the process, highlighting internal strengths and weaknesses, external trends, and critical issues, will advance this effort.

REFERENCES

1. *Regional Transportation: Current Conditions and Future Prospects, An Interagency Assessment*. North Jersey Transportation Coordinating Council and New York Metropolitan Transportation Council, New York, April 1989.
2. E. W. Harned, L. M. Proctor, L. H. Bowser, and K. M. Chase. Development of a Strategic Management Process: A Case Study of the Pennsylvania Department of Transportation. In *Transportation Research Record 1028*, TRB, National Research Council, Washington, D.C., 1985, pp. 47-53.
3. Z. A. Farkas and M. Ayele. *A Guide to Strategic Planning for Transit Properties*. UMTA, U.S. Department of Transportation, Dec. 1988.
4. F. R. David. *Fundamentals of Strategic Management*. Merrill Publishing, Columbus, Ohio, 1986.
5. D. Gray. Uses and Misuses of Strategic Planning. *Harvard Business Review*, Vol. 64, No. 1, Jan.-Feb. 1986.
6. D. L. Sorkin, N. B. Ferris, and J. Hudak. *Strategies for Cities and Counties: A Strategic Planning Guide*. Public Technology, Inc., Washington, D.C., 1984.

Publication of this paper sponsored by Committee on Strategic Management.