

The critical word in the above sequence of activities is "add." It has long been recognized that a shopping center does not rely wholly on newly generated trips but to some degree picks up trips that were already in progress or diverts them from a short distance away. Conventional wisdom suggests that newly generated trips form the bulk of traffic to a new shopping center and that ignoring the other trips is a sensibly conservative approach, akin to the engineer's factor of safety.

In a paper by Slade and Gorone (1), however, limited research at one center in Washington, D.C., showed that only 35 percent of trips were newly generated and that 65 percent were merely diversions of trips already on the road network. Further research is needed on this. It is interesting to note that as part of the Traffic Authority surveys of shopping centers, shoppers were questioned whether the particular center surveyed was the only place in which they intended to shop. On average about 50 percent of the shoppers indicated that they would be shopping elsewhere as part of their shopping trips, which suggests that current procedures for assessing the impact of these developments do indeed need reviewing.

CONCLUSIONS

The generation models presented in this paper are somewhat limited inasmuch as they offer a simplistic static solution to what is in reality a complex dynamic phenomenon. However, it is considered that they are an improvement to the status quo and will give more useful predictions than those based on more historical and subjective bases. Although the applicability of these results in countries other than Australia has not been investigated, it is hoped that the results nevertheless will be of some assistance in furthering general research on land use traffic generation. It is also hoped that the information presented will assist in the development of more realistic parking standards.

REFERENCE

1. L.J. Slade and F.E. Gorone. Reductions in Estimates of Traffic Impacts of Regional Shopping Centres. ITE Journal, Jan. 1981.

Publication of this paper sponsored by Committee on Transportation and Land Development.

Public Management in a Time of Declining Resources

RICHARD P. BRAUN, ROBERT C. JOHNS, AND CATHY L. ERICKSON

In Minnesota, as in many states, construction, maintenance, and operating costs are increasing while highway revenues from gasoline consumption are decreasing. The result is a severe budgetary crisis that requires retrenchment of the organization. The retrenchment process at Minnesota's Department of Transportation (Mn/DOT) involved several different approaches. Convincing the state's highway users and Mn/DOT's employees of the necessity for making large cutbacks was deemed essential, and numerous ways of accomplishing this were used. At the heart of retrenchment are decisions about who is to be laid off and what activities and projects are to be scaled down or terminated. The department used various methods to earmark such reductions. Finally, because pressure to meet established informational and decision-making needs heightens during retrenchment, developing and putting to use tools such as computer systems and packages becomes more important.

Transportation agencies today are faced with the problem of how to make the transition from growth to decline. It is an adjustment that will have to be made in virtually all of the public sector as programs are reduced. The age of rapid growth is giving way to the age of slowdown, as Kenneth Boulding has labeled it (1). The public sector, which has expanded enormously over the last four decades, can no longer presume increasing revenues and expenditures. However, almost all public management strategies are predicated on expansionist assumptions (2).

In transportation the peak of highway construction was in the 1950s, 1960s, and 1970s. The U.S. Interstate system was developed. The states built, expanded, realigned, and connected trunk highways and constructed bridges and bypasses. With this gigantic effort came an unparalleled expansion of the public work force.

Minnesota's construction peak came in 1967 to 1969. In 1973 the Arab oil embargo caused oil sup-

plies to diminish and gasoline prices to rise throughout the rest of the decade. To economize, drivers bought small cars that got better gasoline mileage. The gasoline tax has been the principal source of Minnesota highway funds, but because the amount of revenue is a function of the amount of gasoline used, economizing has dealt a critical blow to the state's highway revenues.

Gasoline consumption in Minnesota is expected to decrease an average of 2.2 percent annually through the late 1980s. In the 6 years preceding the embargo, gasoline consumption in Minnesota increased an average of 5.8 percent annually. If that trend had continued, state gasoline revenues, including the three gasoline tax increases approved by the state legislature since 1972, would have totaled \$2.68 billion between 1973 and 1982. Instead, gasoline revenues for the 10-year period totaled \$2.04 billion. Economizing in Minnesota has resulted in \$640 million less in highway revenue during the 10 years.

At the same time that gasoline consumption was dropping, construction, maintenance, and operating costs were increasing. Higher oil prices after the 1973 embargo meant rapidly rising building and maintenance costs because of the oil in materials such as asphalt and concrete and the fuel use of heavy equipment.

As a result Minnesota's highway construction cost index soared in the last decade and a half. From a base of 100 in 1967, it climbed to 292 in 1981. An additional index reflecting cost of maintenance and operations, based on a nationwide average, rose to 218 in 1978 from a base of 100 in 1967.

Inflated construction costs are reflected in the cost of completing the Interstate system. In Minnesota seven sections totaling 40 miles remain unfinished, and the cost is estimated to be \$767 million. The cost of the 860 miles that have been built was \$1.6 billion. In 1958 the estimate to complete the system statewide was \$750 million.

The budgetary crisis in transportation is severe, and the situation will not improve in the near future. Efforts to significantly increase revenues have not been successful.

NEED FOR RETRENCHMENT

Initially measures such as a hiring freeze, deferred maintenance, and eliminating the so-called fat can be used to mitigate an imbalance of expenditures and revenues. If the imbalance is small or temporary, these measures might be effective enough to carry the organization over a rough period.

However, when the deficit is large and permanent, real retrenchment is necessary. This means that the organization must be turned into one that is smaller and consuming fewer resources while remaining functional and effective.

The decisions that must be made are extremely difficult. When should the move be made from interim solutions like a hiring freeze and deferring projects and maintenance to making cuts in staff and programs? Who will be laid off and when? What projects and programs will be scaled down or terminated?

As unpleasant as these questions are, avoiding them and relying on short-term expediencies can only exacerbate the problems of a large, permanent decline. Acknowledging the reality of the financial crisis and the necessity of making large reductions is a crucial stage in dealing with a deficit. To be sure, hurdling what Levine calls the Tooth Fairy Syndrome--the belief that the decline is temporary and the cuts will be restored soon by someone--is no small accomplishment (3).

MANAGING RETRENCHMENT AT MINNESOTA DEPARTMENT OF TRANSPORTATION

The change from an expanding to a contracting organization happened rapidly at the Minnesota Department of Transportation (Mn/DOT). In fall 1978 a comprehensive transportation plan was drafted based on historical funding and inflation trends. Six months later, because of a dramatic decrease in funding from declining gasoline consumption and an unexpectedly high inflation rate, 61 construction projects totaling \$122 million had to be canceled. In May 1980 an additional 60 projects totaling \$130 million were canceled. These events initiated the retrenchment process at Mn/DOT.

Managing a contracting organization is different from managing one that is growing. New kinds of decisions, choices, and strategies are necessary during retrenchment. At Mn/DOT managing retrenchment was separated into four stages: education, reduction of projects, reduction of number of employees, and improved decision making.

Each of these stages will be examined. Use of education to convince the public and the organization's employees and managers of the necessity for making large reductions will be described. The sections on reduction of projects and personnel explain how cutback decisions were made. Finally, for improved decision making some of the computer systems and packages that have been developed to aid decision making and meet informational needs are described.

EDUCATION

Education is aimed at three groups: the public, who are the users of the state's highway system; Mn/DOT employees; and Mn/DOT managers.

Educating the Public

Educating the public is an essential component of managing retrenchment. There are two major stages in this process. The first is for the manager to recognize the impending decline and the inevitability of large cutbacks. If he is unwilling or slow to do this and relies on short-term solutions such as deferring repairs or preventive maintenance, the organization's long-term physical plant and its workability may be endangered. It is in the manager's own interest, too, to begin the task of managing the decline, thereby establishing on his terms how the organizational contraction is to be directed. The effects of remaining in the short-term expediency phase can be disastrous (4).

In order to see that major cutbacks are needed, the public manager must understand the long-term trends and the sources of the organization's resources and analyze patterns and shifts that affect the funding. Preparing for the decline requires considerable data collection, analysis, and anticipation of legislative and congressional action and public desires.

Explaining to the public that major cuts are essential and that the slowdown is permanent is the second stage. This is a problem because the public believes that trimming inefficiencies and paring the work force are enough to meet the budgetary dilemma. The difficulty of the task is illustrated by the following observation (4, p. 12):

In this political environment, it is in the interest of few leaders to accept the reality of retrenchment, let alone to state that reality publicly. The messenger who attempts to explain that a long-term decline is beginning may be first ridiculed and then shot. The elected leader who reports that resources will no longer continue to grow and that cutbacks must be made may be voted out of office. The appointed administrator who disrupts his agency with similar news may lose the support of his staff, his effectiveness as an organizational leader, the confidence of his superiors, and finally his position.

At least two obstacles impede convincing the public that a decline is long term. One obstacle is that generally the public is insulated from the legislative process. They do not understand the dynamics by which the transportation department obtains its revenues nor do they know how funding relates to programming. Retrenchment is an appropriate and necessary time to generate public awareness of the complexity of the processes and relationships.

Another obstacle is that the general public is often a special or even vested-interest group with a pet project. Consider that there are numerous groups that were at one time promised better roads, new bridges, or a bypass, only to see these projects canceled for two, three, or four construction seasons. It is important to realize that something is being taken away even though it was only a promise.

At Mn/DOT the course of action was to flood the public with the facts of retrenchment. Behn observes that this greatly improves the chances of successfully convincing the public (4, p. 16). Media exposure and public involvement were used to deliver messages about the cutback. Continuous, or

at least frequent, media exposure is especially effective in the beginning stages of retrenchment. It can be accomplished through television spots, for example, within the nightly news programs, through radio, and especially through newspaper coverage. For example, the plight of the state's highways and the problems of financing repairs and new construction were examined in a six-part series in one of the major Twin Cities newspapers. Public involvement such as citizens' meetings and speeches to a variety of large and small groups offers direct and more personal opportunities to explain the state's financial straits and what is being done to meet the problems.

Convincing Employees

The public manager cannot lead his organization through a major retrenchment without the cooperation of at least some major components of the organization. That cooperation will not be gained until members of the organization are convinced that the decline is real and imminent. Hence an essential element of leadership at this time is convincing the members of the organization to accept the reality.

Public employees are no less ingrained with a growth ideology than the general public, and their acceptance of retrenchment likewise will be slow. In addition there are reasons why as employees they will tend to resist the changes that retrenchment will bring: a misunderstanding of the situation and its implications, a belief that the consequences will not be beneficial to employees, and a belief that the changes do not make sense for the organization (5,6).

One of the most common and effective ways to overcome resistance to change is to educate people about it beforehand. Early communication of the need for and the logic of cutbacks in the organization helps to prevent the suspicion, misunderstandings, and resentment that often result when information is held back.

The education process at Mn/DOT involved the use of in-house informational tools, group presentations or meetings, and audiovisual presentations. The Mn/DOT informational tools included the monthly departmental news-and-feature magazine, short and lengthy memos, and open letters to all employees. Presentations or meetings involved groups of all sizes; cutback meetings were held with assistant commissioners, office directors, and section managers, who in turn held informational sessions with their own, smaller units. Opportunities to speak before a large group are infrequent and perhaps not the ideal way to deliver a cutback message, but they were used when they did arise, as at the annual employees' meeting, which occurred early in the transition period. What proved effective was a half-hour audiovisual presentation that described historically how Mn/DOT found itself in a financial dilemma and where it was going from there. The presentation was seen by employees in small groups of 20 to 40.

Convincing employees is a matter of continually confronting them with the reality of retrenchment and the necessity of more modest expectations. Although there are many issues in the organization that are not of great interest to its members, this is not true of retrenchment because everyone is affected. Decisions are of immediate, personal interest to everyone. Employees will become involved more readily because of this interest.

Convincing Managers

The managers in an organization may be the most cru-

cial element in accomplishing a smooth and efficient transition. This is because of their role in the planning process, in carrying out plans and policies, and in supervising and managing their own employees. They must be convinced early of the reality of retrenchment. However, among managers there is a hesitancy to slow down because of the need to provide lead time in planning activities and projects.

The most important aspect of convincing managers is lowering expectations. Development of highway projects has become an extremely lengthy process. Beginning preliminary design and engineering activities on a project implies a commitment of major state and federal resources for as long as 12 years. However, once the project has been started, money might be available for only a fraction of that time, if it is available at all. Unfortunately a number of highway projects one-fourth or one-half completed already exist. As a result, at the time that a project is being planned it is imperative to be confident that the funds needed to complete it will be available. It is a matter of realistic expectations and an awareness that planning too far in advance for something that may not be finished wastes public money.

Thus expectations must be lowered. Clearly plans for a project could no longer be drawn up today or next year under the assumption that funds for it would become available in 4 or 6 years. This illustrates the fundamental planning message that must be conveyed: be as certain as possible when planning a project that it will be possible to finish it. The alternative at the least is bad management. If this message is conveyed successfully, not only will staff plan intelligently because they understand and accept the need for cutbacks, but also there will be a core of leaders to help direct and manage the retrenchment.

EMPLOYEE REDUCTION

Allocating Cutbacks

In spite of attrition, hiring freezes, and elimination of vacant positions to achieve a reduction in force, Mn/DOT in the late 1970s was faced with effecting sizable employee layoffs. Decisions about who is to be laid off and what activities and projects are to be scaled down or terminated are at the heart of the retrenchment process. The answers to these questions will determine the new structure of the organization. It will be this structure and its workings that will reveal whether or not the retrenchment was successful. Is the organization doing things and doing them well despite being smaller and using fewer resources than before?

No packaged or standardized formula will determine what employees and services are more expendable than others. That answer as well as the decision-making process will differ in each organization. But the dilemma is the same: How can one cut services, decrease expenditures, and still maintain or even increase efficiency?

Across-the-board cuts are an appealing method of allocating reductions in an organization. Sharing the pain by distributing cuts in equal shares to all units has a superficial equity, and as a result it is popular among managers. It is readily justifiable, socially acceptable, and involves few decision-making costs. But it is in the final analysis a short-term strategy aimed at short-term economies. Its insensitivity to unit size, unit effectiveness, and the importance of each unit to the central mission of the organization is reason for not using it except in the early stages of re-

trenchment (although it is often suited to a minor or temporary decline).

It is tempting to rely on across-the-board cuts as a panacea. But they are likely to be an attempt to avoid targeting cuts and making hard choices. For this reason, they are seldom management's best response to financial pressures (7,3,4).

It has been said that targeting cuts is a difficult job that tends to be avoided by all but the most brave or foolhardy public officials (3, p. 182). Nevertheless, it is the only road to take in periods of major decline. The first order of business when the need to plan for retrenchment arrives is to review the organization's functions and objectives to determine whether they are still appropriate and whether new ones created by the new situation are also appropriate. It is also important to set priorities that will be used to target the cuts in the organization.

Activity Analysis

In one effort to allocate cutbacks, Mn/DOT in 1980 developed and carried out an activity self-analysis project that could be used specifically to earmark potential activity reduction that would achieve a like employee reduction. Envisioned as an in-house contingency plan, the project consisted of four study phases. Phase 1 involved project planning, orientation of peer facilitators, development of guidelines for activity definition, and orientation presentations. Phase 2 involved data collection by the facilitators of information from each office (in the central unit, called the central office) and district (transportation offices located throughout the state) on the activities performed, the outputs or products of each activity, the clientele, and the percentage of work done for other state agencies, counties, and municipalities. Especially important were questions about the source or reason for the activity (i.e., why do we do it?), the impact of stopping or greatly reducing the activity, and the personnel required to perform it (measured in full-time equivalents or person years).

Phase 3 provided the office directors and district engineers an opportunity to analyze the data collected on their own unit's activities to ensure that all major activities had been identified and that the data accurately reflected work accomplishments. Those activities from their unit that could, if future conditions warranted, be eliminated or scaled down were identified. In addition, they considered whether activities could be consolidated, whether some work should be shifted to other governmental units, whether any activities might be better or more logically performed by the private sector, and whether decentralized activities (those performed in the districts) should be centralized, or vice versa.

In phase 4, the assistant commissioners reviewed those activities ranked in the bottom 10 percent as prepared by their subordinate offices and districts. They then prepared their composite divisional recommendations for potential activity elimination and reduction, which were presented in separate meetings to the Deputy Commissioner for his final decisions.

The result was a set of recommendations for activity elimination and reduction for each Mn/DOT division. For each recommended activity reduction, a potential savings in employees was given.

Developing and carrying out the project was extremely time-consuming. Completion of phase 4 was roughly 9 months after the project began. For this reason, projects of this kind must be started long before the need to make large cutbacks occurs if the

results are to be used effectively in the retrenchment process. Because of the unique project design, Mn/DOT has been able to use the results to allocate cuts to its units in order to achieve a reduction in the work force and to continue to carry out the important activities and functions of the units.

Consolidating Functions

In another effort to allocate cuts, Mn/DOT has been examining consolidation of functions where duplication and overlap exist. For example, the main function of the district offices has been highway and bridge construction, and each has a full complement of engineers, surveyors, and employees who specialize in design, rights-of-way, and contract administration. The reduction of construction projects has raised a number of questions. For example, is there a need for large right-of-way offices? Should all districts have full design capabilities? Should all districts have full engineering capabilities? Should some district functions be transferred to the central office? Preliminary conclusions indicate that the answer to the first three of these questions is no.

Mn/DOT's long-range plans are to consolidate divisions, offices, and other units wherever possible in order to reduce personnel at all levels and, secondarily, to produce a realistic organizational structure. In early 1982 the Planning and Public Transportation Divisions of Mn/DOT were consolidated, and additional divisional consolidations are being examined.

Employee Mobility

Retrenchment inevitably erodes morale. During a sharp decline, the employee questions the value of his contribution to the organization. He may also sense a loss of personal control over his future. Under these conditions it is difficult to counteract morale problems.

Attention to employee mobility is an effective way of helping to maintain interest. As vacancies occur in the organization, they may be filled through lateral transfers of employees from other divisions, offices, or units. At Mn/DOT the course of action was to make job postings conspicuous and to aggressively encourage employees to consider transfers. This course is beneficial to the organization and to the employees and still adheres to cutback guidelines (i.e., the hiring freeze).

PROJECT REDUCTION

Priority Ranking of Objectives

In the past the prime mission of the department was expanding the trunk highway system. Recent financing problems have forced the reshaping of this mission to that of protecting roads already built. In the main, Minnesota highways are not in good shape. Most were built to withstand up to 35 years of use, assuming that they received two resurfacings during that period. However, 20 percent of the trunk highways have had no major rehabilitation in 50 years, and 75 percent have had no major rehabilitation in 25 years. As a result, road repairs now have higher priority than new construction.

Preparing for retrenchment centers on the need to review objectives and set priorities. For example, with declining revenues should Mn/DOT's objectives include supporting information centers, rest areas, landscaping, noise walls, and long-range transportation planning? There need to be priorities between objectives. These are not linear priorities per

se: First do A, then B, then C. Rather, one works on all of the adopted objectives, and when two objectives compete for the same resource, the objective with the higher priority comes first (work on all 50 projects in a program but when any two projects compete for the same funds, concentrate on maintenance projects first and allow system expansion projects to slip in the schedule). In other words, it means not putting all the resources on A until it is finished and then shifting the resources to B, and so on.

Funding Levels

In an example of ranking objectives by priority and emphasizing opportunity costs, Mn/DOT developed and presented to the 1981 state legislature four spending packages, or levels of work that could be accomplished with specified funding. Each option described what work the department could do and what it could not do given a certain amount of authorized spending. The levels represented priority-ranked objectives; for example, the objectives listed in level 1 (the bottom level of least spending) have higher priority than the objectives in the second, more expensive, level, and so on.

Briefly the four levels were as follows:

1. Deterioration: If the level of highway spending is not increased, Mn/DOT will have to reduce spending by \$51 million by laying off employees and saving on material and will have to trim repair and maintenance efforts; some Interstate projects will not be funded, and no highway bypasses or four-lane trunk highways will be built.

2. Patch and repair: Given \$223 million in new spending, Mn/DOT can continue its current maintenance effort, largely maintain the current level of resurfacing and reconditioning, greatly increase major rebuilding, and provide for repair and replacement of bridges; Interstate construction will receive much more money, but no new construction will be done on major trunk highways.

3. Preservation: If \$327 million is authorized, more major roads will be rebuilt, 30 miles of new non-Interstate highways will be built each year, and Interstate construction will proceed rapidly; in addition, some of the \$250 million worth of projects deferred in the last 2 years can be carried out.

4. Limited development: With \$432 million Mn/DOT can accomplish many deferred projects, build more bypasses and 65 miles of new non-Interstate highways each year, and greatly increase major road repairing.

A distinct advantage of presenting a budget request as a set of alternatives is that it points out the opportunity costs of not authorizing a given amount of spending. For example, if the patch-and-repair option is not approved, the state's highways will not undergo adequate maintenance, resurfacing, and reconditioning; that is, the system will then decay even further. This will be the cost of not authorizing the required \$223 million in new spending. At each level the costs are clearly stated in the spending options.

The legislature authorized \$206 million in new highway spending, somewhat less than that for the patch-and-repair level.

IMPROVING DECISION MAKING

Although it is more difficult to develop and carry out improved analysis capabilities, control and information systems, and hardware and software systems during hard times, it is then that the need for them

is also greatest. The loss of lead time, the inability to experiment, and most of all the need to minimize mistakes make efforts to aid decision making and to meet established information needs important. Toward these ends, Mn/DOT has made efforts in recent years to expand and accelerate the development and installation of new computer systems and packages. Primary among these are the transportation information system, FHWA's investment analysis packages, and the pavement management system.

Transportation Information System

The transportation information system (TIS) is a computer system that maintains, updates, retrieves, and reports a large number of transportation data items. Five subsystems of TIS are currently in operation: roadway, accident, traffic, bridge, and railroad. The data base is large, but access to the information is easy through dial-up terminals at off-site locations. A simple, user-oriented command language enables its use by nontechnical staff. Basic report formats allow numerous options.

At first TIS was used mainly by the traffic engineering unit and the districts for accident analysis. Currently the accident subsystem offers the most sophisticated analysis methods. TIS has been used increasingly for analysis not related to accidents. For example, it has been used heavily for analysis of federal-aid and functional-class mileage for route systems and geographic regions. In addition, TIS data are used to produce FHWA-required reports and special requested reports for various Mn/DOT units such as maintenance, government relations, and finance. Complex reports, which were once difficult or virtually impossible, are now frequently requested.

Investment Analysis

In order to develop budget requests and allocate available funds, the ability to assess and interpret large amounts of data relative to the physical condition and travel patterns of existing roads is crucial. A computer package was sought that would provide the ability to quickly and effectively assess the impact of various funding levels on the condition of the highway system; assess the funding levels required to attain or maintain a particular set of safety, condition, or performance standards; and summarize the results of these assessments with graphic displays.

The Performance Investment Analysis Process (PIAP) was acquired from FHWA for possible use at Mn/DOT. Testing revealed a number of problems with the package. Mn/DOT is currently working with FHWA to develop the Highway Performance Monitoring System (HPMS) investment package, which is similar to PIAP but incorporates improvements suggested by Mn/DOT. Mn/DOT is one of two states that will test the HPMS package in spring and summer 1982.

Pavement Management System

A pavement management system (PMS) is currently in the developmental stage at Mn/DOT. PMS, once implemented, will be a set of tools or methods that will assist in finding optimum strategies for providing and maintaining pavements in a serviceable condition over a given period of time. At the program level, PMS will provide information valuable in the development of a statewide program of maintenance or rehabilitation. It will be a tool to study making optimal use of available resources. By comparing the benefits and costs of several alternative pro-

grams, the program having the least total cost, or greatest benefit, can be identified. At the project level, alternative design, construction, maintenance, or rehabilitation activities for a particular section or project within the program are considered. When the benefits and costs of the alternative activities are compared, an optimum strategy providing the desired benefits or service levels at the least cost can be identified.

The need to institute a PMS is not as critical when an adequate budget for rehabilitation is available. Sections can be evaluated yearly and required rehabilitation can be scheduled whenever the need is observed. In retrenchment, however, proposed actions must be carefully evaluated with regard to current needs and costs and to the consequences of any action on future needs and costs.

CONCLUSION

Retrenchment means less of almost everything: less money, less construction, fewer services, fewer employees, fewer winners, fewer options, less time. It should therefore come as no surprise that retrenchment also brings less enjoyment of managing. It is difficult to tell people that there simply is no money to build them a safer road. It is difficult to tell 300 employees that they will be laid off.

The necessity of budgetary discipline and cutbacks is new to public organizations, but in the private sector retrenchment-type problems generally are commonplace. During hard times it is important to look at the tactics employed by others and to apply appropriate techniques and ideas. The skills required to manage a shrinking organization are not only different from but are likely greater than those required to manage growth (1). In the private sector some valuable lessons have been learned that can be applied in the public organization.

The foremost premise is to face up to the situation. Managers must put aside the idea that the era of fiscal constraints will go away and that if they hold out long enough, hard decisions will not be necessary. Decisive action should be taken as early as possible to minimize negative effects. Timing becomes critical during hard times; there is actually no time to lose.

Mistakes must be eliminated altogether. It is possible to be wrong once in a while when resources are plentiful, but it is not possible to make a mistake during austerity. This can be prevented by not committing too far ahead for something that may not get done but contingency plans should be ready if

funds become available. Attention should be given to new techniques, tools, methods, and practices. The best answers to the decisions to cut back may be the result of using new analytical tools and computer software systems.

It is especially important to concentrate on

1. Convincing managers of the permanence of the decline and educating them about the hazards of mismanagement,
2. Convincing the public that cuts must be deep and widespread, and
3. Involving the organization's employees in the retrenchment process and preparing them for change.

The greatest, and most basic, need is to accept the challenge of managing decline. It is tougher than managing growth. The problems will not of themselves disappear. The era of growth and abundant resources is gone, but transportation is still as vital as ever. It must be managed regardless of the fiscal situation.

REFERENCES

1. K.E. Boulding. *The Management of Decline*. Change, June 1975, pp. 8-9, 64.
2. C.H. Levine. *Organizational Decline and Cutback Management*. *Public Administration Review*, July-Aug. 1978, pp. 316-325.
3. C.H. Levine. *More on Cutback Management: Hard Questions for Hard Times*. *Public Administration Review*, March-April 1979, pp. 179-183.
4. R.D. Behn. *Leadership for Cutback Management: The Use of Corporate Strategy*. Presented at the National Conference of the American Society for Public Administration, San Francisco, April 1980.
5. J.P. Kotter and L.A. Schlesinger. *Choosing Strategies for Change*. *Harvard Business Review*, March-April 1979, pp. 106-114.
6. L.W. Mealiea. *Employee Resistance to Change: A Learned Response Management Can Prevent*. *Supervisory Management*, Jan. 1978, pp. 16-22.
7. C.W. Lewis and A.T. Logalbo. *Cutback Principles and Practices: A Checklist for Managers*. *Public Administration Review*, March-April 1980, pp. 184-188.

Publication of this paper sponsored by Committee on Manpower Management and Productivity.