

Meeting the Challenges to State Highway Departments

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Highway administrators and engineers are faced with a continuing challenge from a variety of sources.

You all know the “engineers with bulldozers” theme. By this, there is created an image of the highway man destroying all that stands in the way of the laying of broad swaths of pavement in some geometric pattern that satisfies the scientific urge of the engineer but violates the treasured esthetic and historic values of our land.

Then we have representatives of other governmental functional agencies who look with envy on the highway agencies because of their huge highway fund budgets. While the judgments of representatives of such agencies may be more fair than those who play on the “engineers with bulldozers” theme, they none the less raise a specter of concrete vs. bread, or new bridges vs. education, in the interests of diverting highway funds to other purposes.

A challenge quite in contrast with those I have mentioned is provoked by the questioning of progress in meeting highway needs and carrying forward authorized programs—particularly the Interstate System program. Some states and selected areas in states have been pointed out as lagging in completion of the Interstate System. In some instances the competence of highway agencies has been questioned and the historic Federal-state relationship criticized. There have been suggestions for substituting full-scale Federal responsibility for the Interstate System, a most unpalatable suggestion to those who have taken pride in the accomplishments under the BPR-state highway department partnership.

There are challenges, too, from those who view the tremendously expanding urban areas as requiring transportation facilities of a different sort than freeways. These interests want highway money for support of mass transit. It is implied that the urban transportation problem

would be solved with transit development, at less cost and a minimum disruption of people and business.

It is the state highway departments that are being put to the test by these challenges because these departments are, and long have been, the centers of authority and responsibility of major highway development.

It is the state highway departments that are the prime focus of criticism for the same reason.

It is the state highway departments that would be largely affected by changes in the established order which might grow out of these challenges.

There are a number of ways to answer the challenges. And, with varying degrees of success, efforts are being made to *defend* the position of the state highway departments, to *support* the character of the program now under way and to *counter* efforts to divert funds or to impose restrictions on the authority of highway departments. Noteworthy, in this connection, is the recommendation just made to the U. S. House of Representatives Subcommittee on Roads by the American Association of State Highway Officials. The recommendation urges a formal restatement reaffirming the principles of the Federal-state partnership and lists the principles in the form of eleven specific points.

But, to defend, to support and to counter—regardless of the soundness of such activities—are *defensive* actions. And, I'm not going to discuss these for two good reasons. First of all, my primary purpose is to discuss the management improvement project for which we are providing guidance and assistance to the Indiana Highway Department. Furthermore, I think the real answer to the challenges to state highway departments lies in the type of activity associated with the management improvement project. This to me represents a *positive* approach to the challenges to state highway departments.

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When we were discussing the Indiana management improvement project with Messrs. Cohen, Foster and Goodwin in the fall of 1962, Mr. Cohen said he thought we should start "at the beginning—with the planning and programing function." He pointed out that, in his judgment, much that needed improvement in the department operations was dependent on defining a program that was realistic and would be met. These were pleasant words to us because we find this to be the crux of management problems—the lack of defined, realistic objectives and effective communications related thereto.

I can say now that a big step toward the accomplishment of this

objective setting has been made in Indiana, albeit much still remains to be done.

What does this objective setting involve?

First, it requires over-all, long-range objective setting—the target toward which the combined efforts of the department must be directed. We say the basic goal of the organization must be to “develop and operate an adequate state highway system.” But within this context we need to know what the objectives of the organization are—miles, standards of development, and time period for accomplishment.

The Interstate System provides an example of long-range objective setting accomplished at the Federal level. As you know, the Interstate program defines a specific network of roads, to be developed to a clearly-defined set of standards, within an established program time period. If state highway departments are to preserve their authority as highway agencies there is need for them to do the same sort of objective setting for all the road systems for which they are or should be responsible.

Second, the objective setting requires improvement programs geared to the long-range objectives. This involves setting a logical sequence of development of the routes and projects in the long-range plan. It necessitates a correlation with highway revenue provisions and cash flow projections. It must take account of practical considerations involved in state-wide distribution of work, utilization of department forces, and the coordination of highway work with other community developments.

Third, this management process requires that each functional unit in the department—planning, design, land acquisition, personnel, traffic, etc.—have short-term objectives geared to the established program for the department as a whole. It is obvious that the effectiveness of carrying out the department's program is no better than the sum of all the contributions of individual functional units. So they must have their programs—their objectives—set to fit the over-all program. And this applies to service functions, such as personnel and finance, as well as operating functions directly involved with specific highway projects.

Finally, a reporting and controlling process is required that covers the objectives in all of the operating units of the department. Only thus can there be assurance that the planning process will be effective, that objectives once set will be met, or modifications of objectives made as conditions warrant. Again referring to the Interstate program, we see how the reporting and control process works with respect to the long-range plan. The plan was defined by the Federal-Aid Highway Act of 1956 and provision was made for reporting back to the Congress in 1958. The report of 1958 showed an increase in cost from \$27 billion

to \$41 billion. Congress took a new look at the program and at various alternatives, then passed the Act of 1959 which provided additional funds. The original over-all objectives of mileage, standards and completion date were reaffirmed and the program moved forward with financing geared to the over-all objective.

How do we stand now in this management improvement project with respect to these planning, programing, scheduling and reporting activities of the Indiana Highway Commission?

1. We have certain policies directed toward defining over-all objectives.
 - (a) A "highway planning" policy has been developed and adopted by the commission which places responsibility upon the engineering staff to develop, for commission approval, a continuing long-range plan of improvement for the state highway system—and a short-range five-year construction program directed toward accomplishment of the long-range plan.
 - (b) Geometric standards have been developed for rural highways which provide a measure of the adequacy of the present state highway system and also a standard for use in planning and designing needed improvements.
 - (c) Policies have been established defining responsibilities for cooperation with other governmental agencies and political subdivisions of the state in planning for highway improvements and for integrating highway planning with other community objectives.
2. We have a procedure developed for continuing appraisal of the state highway system. This procedure implements the highway planning policy and will provide the essential basis on which the over-all objectives for development of the state system can be established. Reappraisal of the state highway system under this procedure will provide the same sort of reporting and control process as is now being applied to the Interstate System so successfully.
3. We have published a "scheduling guide" which defines specific highway improvements to be accomplished over the next five-year period. The improvement objectives established by the scheduling guide are consistent with available financing.

This guide constitutes the official short-range objectives of the commission in the planning, design, land acquisition and construction of highway improvements. And all organization,

staffing, budgeting and scheduling within all commission units will be directed toward fulfillment of these objectives.

4. We have prepared a production schedule which will establish the objectives of each functional unit in contributing toward accomplishment of the short-range program as defined in the scheduling guide. It provides each unit supervisor with a knowledge of what production is required of his unit and when this production must be accomplished in order to meet the commission's short-range program.

At the same time, an analysis of past performance has provided a series of "yardsticks" for determining the manpower required to accomplish the scheduled objectives for organizational units. This information will give management an opportunity to begin *now* to plan for the manpower it will need over the next five-year period.

5. Finally, a system of reports is being developed which will provide each manager with the information he needs to accomplish his objectives.

- (a) Division and department management will receive detailed reports of the progress being made by their functional units, pinpointing areas where attention should be directed to keep production on schedule and coordinated with other functional activities. Although reports will be furnished by the scheduling unit, emphasis will be placed on acceptance of responsibility for meeting schedules on the functional units themselves.

- (b) Top management will receive a clear, concise production schedule indicating dates for "open to traffic," "letting," "land acquisition completion" and "design completion." Special reports to top management on the program will be made only for those problems on which attention of top management is required. Thus top management will have in clear-cut form the information it needs on the status of the program and will not be given masses of detailed data.

In addition, summaries of significant data on trends, over-all commission accomplishments, research, special studies, etc., will be developed for top management information and review. These must include information on over-all state highway needs and financing.

While we have said the crux of management problems is in planning or objective setting, we are fully aware that the management job is

done basically by people. Well-qualified, highly-motivated people do a good job under most any circumstances. Under good conditions, with well-defined functional responsibilities and interrelationships, good people will do an outstanding job.

During the past year, the Indiana Highway Commission has been the subject of a detailed organization review. The review has been a joint effort of the consultant and a steering committee made up of: F. L. Ashbaucher—(chairman), N. F. Schafer—(secretary), Nelson Steinkamp, F. F. Havey, Martin Hayes, Don Thomas, Charles I. Sheets, Walter H. Frick, C. A. Venable and F. S. Hill.

This committee has guided our work and provided assistance in all phases of the Management Improvement Project.

Several major and secondary organization changes already have resulted from the project's process of critical self-analysis—and an adjustment in the over-all commission organization will be effected in the next few days after many months of detailed evaluation and coordination.

Because of its participation, the commission and its staff now know—from research and analysis—the problems of the past and of the present in a way that will help them avoid the pitfalls of the future.

They have examined their weaknesses and their strong points in many management areas—particularly in organization, planning, finance and personnel administration—with a common goal of greater efficiency and economy.

Other adjustments will be needed in the months and years ahead. This is basic to a continuous process of analysis and improvement.

But progress in the last few months, and firm plans for the next few weeks, are a big step toward developing the capability of the Highway Commission to control its own destiny—its own future course toward highway improvement in Indiana.

Probably most important among recent developments was the decision by the commission to adopt a Career Employment System covering 2,300 positions in the organization.

The Career Employment System now is backed by executive order of the governor, and the many details of implementation are being carried out. It is understood that the Career Employment System will be submitted to the 1965 Legislature with recommendations for statutory provisions in this area.

This is one major phase of the commission's new, complete program of personnel administration. In addition to having the Career Employment System, there now is a Division of Personnel, staffed by pro-

professionals who are experienced and skilled in all phases of recruiting, classification, training and other aspects of modern personnel management.

Another major aspect of the Management Improvement Project has been the development of a management guide. This guide ultimately will contain position guides for every managerial and supervisory position in the commission, plus policies and procedures for major operations and activities.

The guide is really a key element in the Management Improvement Project. It defines the duties of all supervisory positions, the authority and responsibilities of the individuals who occupy these positions, and the relationships that exist with other units in the organization and with agencies outside of the organization. It codifies the basic administrative policies and procedures and lays the groundwork for the formulation of policies and procedures by the individual functional and staff units.

Management theory says we should delegate authority to the lowest practicable level in the organization. This is the way to get decisions made by the right people at the right time. This is the way to develop people for greater responsibilities as managers. But unless we have position guides and codified policies and procedures, too many decisions are going to rise to the top of the organization because of uncertainty and the lack of clear-cut delegations to specific management levels.

This guide has been prepared with the participation of the commission staff. Key people are now at work developing position guides for subordinate positions, plus additional operating policies and procedures.

Position guides, policies and procedures in the management guide resulted from detailed appraisal of the entire commission organization and every function related to the development and construction of highways.

Another result of this complete evaluation was a series of recommendations for changes in the organization structure. This has involved new groupings of functions for a smoother flow of work, a new approach to several activities, new procedures for doing work and reporting progress. It also has involved a number of new appointments and a shifting of certain responsibilities among managers and supervisors.

Again, I emphasize the significance of these accomplishments in major problem areas. There has been study . . . and analysis . . . and now there has been implementation of improvements. All with

participation and real contribution by commission staff and operating personnel, despite the demands of their day-by-day activities.

All of the problems are not solved. And a dynamic organization keeps creating new problems every day. But being developed are an organization, management practices that are geared to a continuing appraisal of operating and personnel problems, and a capability to take constructive management improvement actions.

So where does this put the commission and the state of Indiana?

In a much better position to build modern highways—today and for years to come.

In a position to develop long-range objectives, clearly-defined and regularly updated, and to demonstrate thereby that the highway responsibility is in good hands.

In a position of leadership in the highway field—able to initiate and carry forward programs as the prime focus of highway responsibility in Indiana, working cooperatively both with the cities and counties in the state and with the U. S. Bureau of Public Roads.

And finally, in a position to place the challenges to state highway agencies in their proper perspective.

A well-planned and coordinated highway program, and an efficient and progressive highway organization are beyond challenge. And they will so remain as long as there are aggressive efforts toward continuing self improvements. This is the ultimate objective of the Indiana Management Improvement Project.