

Institutional Dimension of Transportation System Management: A Bottoms-Up Approach

David W. Jones, Jr., Institute of Transportation Studies, University of California, Berkeley

When federal rule makers speak of institutional arrangements, they are thinking of formal and orderly procedures to implement policy objectives. When local policymakers speak of institutional arrangements, they are thinking of practical ways to capture federal funds, satisfy local constituents, and exert community leadership. These two views of institutional arrangements—the top down and the bottom up—do not coincide. The usual result is ritual compliance—dressing up opportunistic local decision making in the clothing of federal mandate and the language of systems planning.

Local response to the transportation system management (TSM) regulations of September 1975 is a classic case of ritual compliance at work—at least in many metropolitan areas. Most areawide TSM plans have been pieced together by reporting projects that have been planned at the local level and then sorting them into the official categories [40 Federal Register 42 976 - 42 984 (1975)]: actions to make more efficient use of existing roadspace, actions to reduce vehicle use in congested areas, actions to improve transit service, and actions to increase internal transit management efficiency. Thus, as it has been practiced by most regional agencies, TSM has been a list-making and documentation exercise. Planning has occurred at the local level; stapling has occurred at the regional level (1-4).

Federal transit and highway officials had something different in mind when they first promulgated the TSM regulations. Federal officials believed, as expressed in guidance for TSM planners prepared jointly by the West Coast regional offices of the Federal Highway Administration and the Urban Mass Transportation Administration (UMTA) and distributed at workshops in TSM hosted by the California Department of Transportation in 1978, that

TSM planning should take place within a region-wide context. Area transportation goals should be formulated or restated, existing conditions and problems assessed, alternative strategies developed and evaluated, and a preferred priority set of improvements identified. This regional perspective is essential to avoid duplicative or conflicting TSM projects and to avoid TSM strategies which might contravene other established goals.

A similar view of TSM was expressed by C. Kenneth Orski:

The TSM requirement is much more than individual low-capital, short-range actions being taken to manage each component of the system or even the set of all those actions. More significantly, it is the mechanism established to set objectives for managing the system, the process of selecting specific goals and implementing strategies, and the technical planning activities undertaken to inform that process. This concept of TSM leads to definition of three functional components of TSM:

- (a) institutional arrangements for getting all the relevant actors together and producing viable TSM plans, since no single actor can be given responsibility for all of the pieces;
- (b) technical planning activities to monitor system performance, identify problems and opportunities, identify optimal packages of actions associated with possible goals and assess their feasibility, and determine the points of trade-off or complementarity between different goals and actions; and
- (c) implementation and evaluation activities that determine and carry out the detailed design and planning for actual installation or initiation of each planned action and that measure the response in order to insure optimal performance with respect to its goals.

This view of TSM and the appropriate organization for the TSM planning process has led federal officials to view the TSM plans developed to date as inadequate, cosmetic, and unresponsive. Such an assessment was inevitable, given the questions federal representatives ask when they evaluate TSM elements (TSMEs) and TSM plans:

1. What was the process or procedure for developing the TSM strategies?
2. Does the TSME reflect overall area goals and objectives, policies, and strategies, as well as more-specific TSM objectives against which TSM improvements can be judged?
3. What was the range of TSM strategies evaluated and proposed?
4. Was there areawide assessment of the effectiveness of a combination of TSM strategies?
5. Were preproject planning studies conducted or proposed to evaluate the effects of individual strategies?
6. Do mechanisms for monitoring improvements exist?
7. What was the involvement of transit operators, state and local jurisdictions, regulatory agencies, private businesses, and citizens?
8. Was there coordination with the U.S. Environmental Protection Agency transportation control plans where applicable?
9. Was there endorsement of the TSME by the policy committee?
10. Are the recommended TSM strategies compatible with the long-range transportation plan?

Assessed against these questions, the TSM planning process looks like what we have called it: ritual compliance. This, of course, annoys the architects of TSM in UMTA. But it does not trouble me.

The real dilemma in TSM planning is not local compliance, but the expectations of federal officials—expectations that are unrealistic and inappropriate. The federal rules embody a textbook version of systems planning. But textbook-style systems planning has very little to do with the way decisions are actually reached in metropolitan areas. Nor has it historically had much to do with planning that leads to successful implementation (5).

Planning has always been most effective when it is conducted by people who

1. Know from practical experience what works and what does not work,
2. Have developed the trust of political leadership,
3. Understand the in's and out's of financing implementation,
4. Are sensitive to community values and can communicate plans in the language of interest groups and community needs, and
5. Are responsible for accomplishing implementation and accountable for its impacts.

In short, TSM planning will be as effective as the people involved in it. Their technical expertise, their communication skills, and their sensitivity to the values

of their community will make or break TSM.

If you accept this view of what makes for effective planning, the institutional arrangements necessary for successful transportation system management follow logically. TSM should attempt subvention of planning funds so as to

1. Upgrade the traffic-operations expertise of transit agencies and highway departments;
2. Engage major employers in traffic mitigation;
3. Allow local communities to develop plans to protect residential neighborhoods and areas of heavy pedestrian activity from traffic intrusion; and
4. Cultivate a concern with traffic mitigation in the local agencies that plan urban development, issue building permits, and review environmental impact reports.

In this conception of TSM, regional agencies would be involved in the procurement of planning from agencies that have implementation powers and are responsible for living with the results of implementation. It would not involve an elaborate exercise in regional goal setting, the convening of areawide task forces, or an active role in operational planning for the metropolitan planning organization (MPO). MPOs would procure planning by subvention of funds to action agencies—or a consortium of action agencies. They would plan for planning, rather than develop plans themselves.

This approach posits that the key to successful TSM is the commitment of the implementing agencies and the involvement of the community constituency with which they are engaged. Community involvement and agency commitment are not likely to occur if TSM planning is conducted as a systems planning activity at the regional level. The systems planning game is simply too distant, too abstract, and too heavily overlaid with the heritage of modeling to produce the consensus necessary for implementation.

Let me anticipate the reaction of federal rule makers to this line of argument. Many would say, I suspect, that an areawide approach is necessary to coordinate TSM planning with energy-conservation and air quality planning. Therefore, it is critical that TSM, transportation control planning, and energy-contingency planning be lodged in the same regional agency so that efforts are not duplicated.

The answer to this line of argument is that TSM measures will not have consequential impacts on fuel consumption and air quality. Estimates of the energy-conservation and air quality impacts of aggressive implementation of the full menu of TSM actions usually indicate reductions of one or two percent of total regionwide vehicle travel (6-9). And when affordability and acceptability constraints are added to the analysis, the fuel savings and pollutant reductions that can be achieved through TSM are reduced to negligible.

There is no merit in coordinating TSM with air quality and energy-conservation plans if coordination cannot deliver significant results.

Let me anticipate a second reaction from federal rule makers: that TSM should be coordinated with long-range planning and therefore should be lodged with the agency responsible for long-range planning. This argument has merit. But coordination can be accomplished from the bottom up as well as from the top down. As MPOs procure TSM planning and implementation from action agencies, they can adjust their assessment of long-range needs accordingly. Thus, local accomplishment in TSM would lead to the lessening of regional investment needs.

A third federal concern can also be anticipated—that TSM must be an essential element of planning for

fixed-guideway transit and must therefore be located in the regional agency that is engaged in alternatives analysis. One of the origins of federal commitment to TSM was the judgment that priority treatment of buses and carpools on freeways may offer a cost-effective alternative to rail transit on exclusive rights-of-way. Thus, as Orski noted in his opening remarks at the 1976 Transportation Research Board Conference on Alternatives Analysis, Hunt Valley, Maryland, alternatives analysis posits that making more efficient use of existing road space should be evaluated as an option to major investments in right-of-way and rail transit. The dilemma with this argument is that few urban corridors have sufficient transit service or transit demand to support exclusive bus ways, much less rail transit. In most metropolitan areas, priority entry at metered freeway ramps is the strategy best suited to the level of transit service that can be anticipated, even in the future. This means that corridors in which a trade-off between rail transit and exclusive bus way is germane can be treated as unique cases. The institutional arrangements for TSM should not be organized around the exceptional case, but rather based on the routine demands of traffic management, parking management, and employer-based traffic-mitigation planning.

Finally, a fourth federal concern can be anticipated—that a bottoms-up process driven by no explicit regional objectives cannot be easily monitored and evaluated. Without well-defined objectives, the cost-effectiveness of competing projects cannot be assessed and programmed optimally. This argument is difficult to rebut because formal measures of cost and benefit have never played a large role in transportation planning and programming (2, 10). Rather, planning decisions have been guided by sensitivity to community wants and budget tolerances. And programming has been guided by balancing the competing claims of competing jurisdictions. Thus, the calculation of costs and benefits has been more instinctive and political than systematic and formal. This being the case, it has been viewed as appropriate to give decision-making authority to elected officials who are accountable and whose reelection depends on their sensitivity in interpreting what their communities want and can afford. [This philosophy of governance is embedded in the official TSM regulations, but local has been interpreted to mean local officials assembled in a regional forum. It is the responsiveness, constituent composition, and equity of regional forum arrangements that are the issue (1).] Unless the planning and programming process is changed radically, it should remain the responsibility of those closest to community needs.

Let me summarize the arguments made here:

1. The TSM plans developed by MPOs have disappointed federal reviewers and rule makers.
2. The federal view of TSM is at variance with the planning practices and decision processes of metropolitan areas.
3. Successful TSM planning does not require an elaborate areawide process based on textbook-style systems planning.
4. The key to successful TSM planning is the people involved: their expertise, their access to the political process, and their sensitivity to community values and needs.
5. MPOs can foster TSM by subvention of planning funds and procurement of project design from action agencies.
6. TSM cannot deliver consequential energy savings or pollutant reductions; therefore, the planning process

for TSM should not be structured around these objectives.

7. TSM should be coordinated with long-range planning, but this can be accomplished by adjusting long-range investment plans in light of local-level TSM accomplishments.

8. The number of regions and corridors that face trade-offs between rail transit and exclusive bus lanes is limited. The TSM process should not be structured around these exceptional cases but rather around the routine requirements of traffic management, parking management, and traffic mitigation.

9. Given the TSM measures most likely to be effective and command community support, the institutional objectives of TSM should be to (a) upgrade the traffic-operations expertise of transit agencies and state highway departments, (b) engage major employers in traffic mitigation (ride sharing, parking management, and work-hour rescheduling), (c) allow local communities to develop plans to protect neighborhoods and pedestrian areas from traffic intrusion, and (d) cultivate a concern with traffic mitigation in local land use planning and the environmental impact report process.

10. These objectives can be most effectively accomplished if MPOs procure planning from action agencies, rather than develop TSM plans at the systems level.

REFERENCES

1. Comptroller General. Report to the Congress of the United States: Stronger Federal Direction Needed to Promote Better Use of Present Urban Transportation Systems. U.S. General Accounting Office, CED-79-126, Oct. 4, 1979.
2. D. W. Jones, Jr. The Politics of Metropolitan Transportation Planning and Programming. Institute of Transportation Studies, Univ. of California, Berkeley, 1977.
3. E. Deakin and others. Transportation Systems Management: A Review of Current Activities. Center for Transportation Studies, Massachusetts Institute of Technology, Cambridge, Dec. 1976.
4. M. Meyer and R. Gakenheimer. Options Chosen in TSM Plans. Center for Transportation Studies, Massachusetts Institute of Technology, Cambridge, Feb. 1977.
5. D. W. Jones, Jr., and E. C. Sullivan. TSM: Tinkering Superficially at the Margin? Journal of the Transportation Engineering Division, Proc., ASCE, Vol. 104, No. TE 6, Nov. 1978, pp. 817-834.
6. A. A. Altshuler, J. P. Womack, and J. Pucher. The Urban Transportation System: Politics and Policy Innovation. Massachusetts Institute of Technology Press, Cambridge, 1979.
7. D. C. Kendall. Carpooling: Status and Potential. Transportation Systems Center, U.S. Department of Transportation, Cambridge, MA, June 1975. NTIS: PB 244 609/4SL.
8. G. S. Cohen. TSM Actions: A Study of Energy Costs. Planning Division, New York State Department of Transportation, Albany, 1979.
9. W. L. Garrison and D. W. Jones, Jr. Energy Conservation in Urban Transportation. Institute of Transportation Studies, Univ. of California, Berkeley, 1979.
10. D. W. Jones, Jr. Caltrans: The Road to Transition Is Paved with Uncertainty. California Commission on Government Economy and Efficiency, Sacramento, 1977.