

Transportation Management Associations: Organization, Implementation, and Evaluation

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A national evaluation of transportation management associations (TMAs) was performed. Of 110 TMAs contacted, 64 responded (58 percent). Over two-thirds of all responding TMAs were formed as recently as 1988 or thereafter and almost half were located in the state of California. Most TMAs are organized as private, not-for-profit corporations. The majority of TMA board members represent private firms, and most TMA corporate members are drawn from the private sector. Yet less than half of all TMA revenues came from private sources in 1991, and this proportion is expected to increase to no more than two-thirds in 1995. TMAs typically experience difficulty in recruiting private-sector representatives to serve on their boards, to become full-fledged corporate members, or even to contribute cash or in-kind services to the TMA. TMA goals and objectives typically include a strong emphasis on the implementation of travel demand management (TDM) strategies, almost equal emphasis on reducing traffic congestion and air pollution, much less interest in economic development issues, and very weak support for the promotion or financing of transportation infrastructure improvements. TMA services are often modest in scope, with the greatest emphasis typically being placed on the provision of information to employees and assistance to employers in the promotion of TDM alternatives. Guaranteed-ride-home programs are common among TMAs, but telecommuting and child care facilities have not caught on to quite the same extent. In spite of mounting evidence about the effectiveness of parking management strategies, they have been avoided by most TMAs. It might thus seem that TMAs would not be very successful in changing travel behavior on a large scale. TMA evaluations are undertaken infrequently. Even when TMA assessments are complete, the results often are not granted wide circulation. This suggests that measured changes in travel behavior associated with TMAs probably are slight. On the basis of these findings, it is suggested that TMAs must gain far greater support and acceptance from the private sector and may need to pursue more aggressive TDM strategies if they are to become more successful in any quantifiable sense.

Transportation management associations (TMAs), sometimes also called transportation management organizations (TMOs), are innovative institutional arrangements. TMAs usually take the form of public-private partnerships, often with a strong emphasis on private-sector participation. Their primary mission is usually the adoption and implementation of various types of travel demand management (TDM) strategies, often aimed specifically at reducing traffic congestion, enhancing air quality, or promoting economic development opportunities. TMAs occasionally may promote transportation infrastructure improvements as well.

DATA AND RESEARCH METHODOLOGY

Until a few years ago, only a handful of TMAs were operating in the United States. The most appropriate means of evaluating TMAs under these circumstances was to use the familiar case method (1). As of February 1991, we had identified 110 TMAs nationally as being in the process of formation, organized but not yet operating, or partially or fully operating (2). With this small but rapidly growing population of TMAs to draw upon, it is now possible to conduct a broad-based comparative analysis of TMA activities in different parts of the country.

Most previous TMA evaluation efforts were fairly limited in scope. There have been a few detailed case studies of individual TMAs (3–5) and some comparative analyses within specific regions (6,7). Jackson et al. identified 54 TMAs nationally using the 1989 *TMA Directory*, published by the Association for Commuter Transportation, and surveyed 37 of these in 1990 (8,9). Dunphy and Lin identified 72 operating or organizing TMAs nationally between 1986 and 1990, but limited their detailed case study treatment to those located in three regions—Washington, D.C.–Baltimore, Northern California, and Southern California (10). Diggins and Schreffler in another paper in this Record identify 56 TMAs in the state of California in late 1990 and survey 38 of them.

Of the 110 TMAs that we identified, 65 were located in the state of California alone, 9 more than Diggins and Schreffler had identified less than 6 months before. We mailed a 12-page national TMA survey to the executive directors of all 110 of these TMAs in April 1991. The survey was composed of 25 questions, which requested more than 250 separate pieces of information on various aspects of TMA initiation, organization, financing, operations, and evaluation. As of September 30, 1991, a total of 64 TMA mail surveys had been received, yielding an overall survey response rate of 58 percent. Given the level of detail requested in this survey, that is a highly satisfactory response rate. Responses were received from 31 of the 65 California TMAs (48 percent) and 33 of the 45 TMAs in other states (73 percent). It appeared that older, more mature TMAs were more likely to respond to the survey. Several surveys were returned unanswered, often by TMAs indicating that they were still in the very earliest stages of formation. Most completed surveys listed the TMA executive director as the respondent, though other staff may have assisted them in filling out portions of the survey. The information presented in this paper is based on an analysis of these

64 responses to the national TMA mail survey. In addition to the executive director mail survey, short-form TMA board member mail surveys were conducted simultaneously. A total of 109 TMA board member mail surveys were returned, representing 32 of the 64 responding TMAs.

STATUS AND MARKETS

Many TMAs are still in the process of formation. Nonetheless, a few have been around for 5 or even 10 years and have thus taken on some of the characteristics of maturity. As Figure 1 shows, over two-thirds of all responding TMAs were formed in 1988–1991. Overall, TMAs may be characterized as pre-

dominantly private institutions, usually located in rapidly growing suburban areas, with relatively small budgets and staffs to deal with the ambitious scope of local problems that they report facing.

Overall, 68 percent of responding TMAs were partially or completely operational at the time the survey was completed, and 27 percent were still in the early or late stages of formation. In general, it appears that TMAs take about a year to get organized and another year to begin providing services. Most TMAs formed in 1989 or previously were completely operational, whereas those formed in the last 12–18 months were much less likely to be in any position to provide services (Figure 2). As shown by Diggins and Schreffler elsewhere in

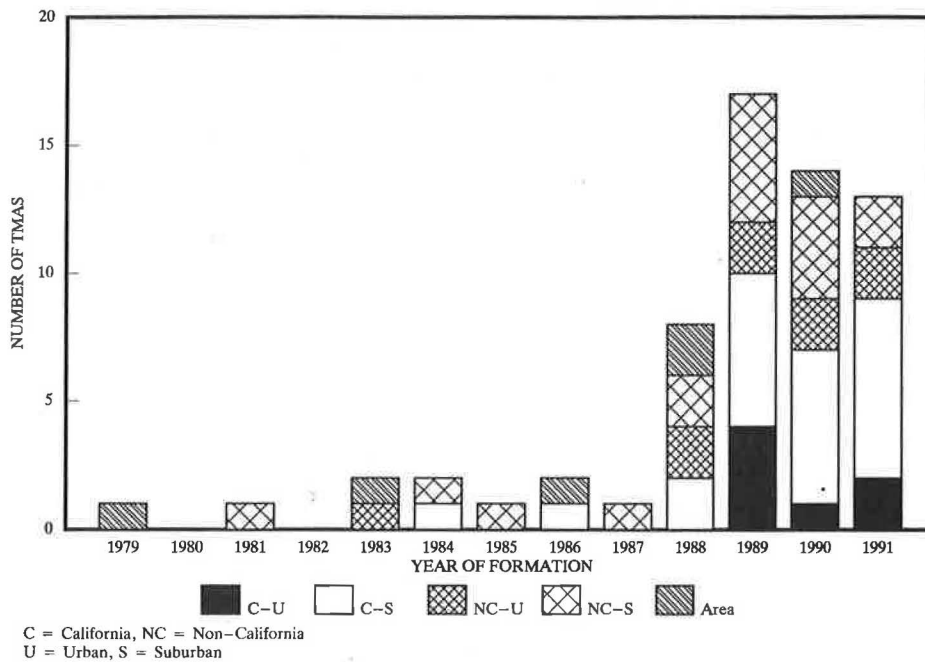


FIGURE 1 Number of TMAs by year of formation and geographic location.

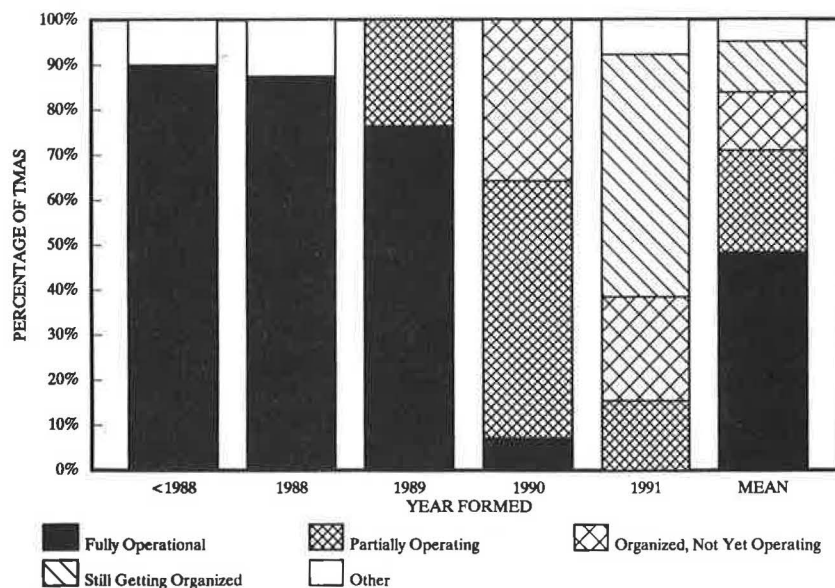


FIGURE 2 TMA operational status by year of formation.

this Record, only 40 percent of California TMAs were fully operational as recently as 1990. California TMAs are somewhat younger and apparently less developed than TMAs in other states, even though the first TMA in the nation, the El Segundo Employers Association, was founded in Southern California in 1981.

TMA market area size varies considerably from one TMA to another, from as little as half a square mile to as much as 500 mi². Included within a typical TMA's market area are about 15 developers, 550 landowners, 1,500 employers, and over 50,000 employees. These figures are representative of typical emerging suburban employment activity centers or groups of such centers. The density of development of TMA market areas varies considerably by location, building occupancy, and percentage of land vacant, but it is generally quite low. Because of low development densities, whether permanent or transitional in nature, there can be a high level of dependence on the automobile for transportation. If transportation infrastructure improvements lag behind, this may contribute to increasing traffic congestion as suburban land development proceeds apace. Most TMAs are located in the suburbs, usually in large, rapidly growing suburban activity centers. A few TMAs have been formed in central cities, including downtown areas, but these are still outnumbered by suburban TMAs.

INSTITUTIONAL FACTORS

Initiation

TMAs most often are created by local actors to deal with local problems. Private employers and developers are identified most frequently as key agents in the formation of TMAs, followed by municipal governments, private landowners, regional ridesharing agencies, and local chambers of commerce (Table 1). State and federal agencies are cited much less commonly as being important in TMA initiation. When asked to identify the single most important person, firm, or agency involved in TMA initiation, executive directors most often mention a specific individual by name (18 percent), followed by cities or counties (18 percent), the regional metropolitan

planning organization (MPO) (11 percent), chambers of commerce (11 percent), and private developers (11 percent). Local chambers of commerce and regional MPOs are identified rather infrequently as being important in TMA initiation, but when involved, are often listed as the key agent. Private employers rarely fill this role.

Leadership

Most TMA executive directors (86 percent) report having a board of directors as their executive policy decision-making body to which they are responsible. The average TMA board has about 14 members, including 12 voting and 2 nonvoting members. On average, eight TMA board members are from private, for-profit firms; three are from private, not-for-profit firms; and three represent public agencies. Over half (54%) of all TMA executive directors sit on their own board. Virtually all board members from private, for-profit firms (97 percent) vote on board matters. The percentage of board members with full voting rights is lower for private, not-for-profit firms (85 percent), public agencies (62 percent), and executive directors (28 percent).

In a separate survey, TMA board members reported the following:

- Main reason for joining TMA board: The most common reasons included addressing local transportation problems, representing the interests of their own organization, assisting in the establishment of the TMA, and serving as a liaison between the TMA and another organization.
- Main contribution to TMA activities: The most common contributions included needed leadership skills, time or money, specific types of expertise, and assistance with public relations.
- Main obstacles to TMA implementation: These obstacles often included getting the TMA up and running, recruiting new TMA members, raising funds to operate the TMA, and increasing public awareness of TMA activities.

Corporate Membership and Dues

Most TMAs (77 percent) have some kind of corporate membership program. The typical TMA has about 26 corporate members, including averages of 19 private, for-profit firms; 4 private, not-for-profit firms; and 3 public agencies. Most corporate TMA members (87 percent) join voluntarily because of the services provided directly by the TMA. The remainder of corporate TMA members are mandatory members, usually as a result of compliance with local trip reduction ordinances or specific provisions of building occupancy permits and rental or lease agreements. Of those TMAs with corporate membership programs, most (82 percent) charge dues. Membership dues generally are assessed per employee for employers, per square foot for developers, and per acre for landowners. The emphasis of most TMA dues programs seems to be on employers, to whom (or to whose employees) most TMA services presumably are directed. Miscellaneous TMA membership categories include local governments and public agencies, transit providers and transportation firms,

TABLE 1 RELATIVE IMPORTANCE OF TMA INITIATORS

Type of Initiator	Not Important	Somewhat Important	Very Important	Greatest Importance
<i>Private Sector</i>				
Employers	15	13	32	40
Developers	23	12	28	37
Land owners	52	12	17	20
Local COC	50	8	18	23
Other private	76	3	10	10
<i>Local Agencies</i>				
City governments	32	27	28	13
Ridesharing agencies	38	17	23	12
Transit agencies	57	18	20	5
County governments	55	22	13	10
Regional governments	65	13	8	13
<i>State and Federal Agencies</i>				
State DOT	47	12	27	15
FTA	65	15	8	12
Other state agencies	77	7	10	7
Other federal agencies	92	3	5	0

Percentage of TMAs. All rows sum to 100%.

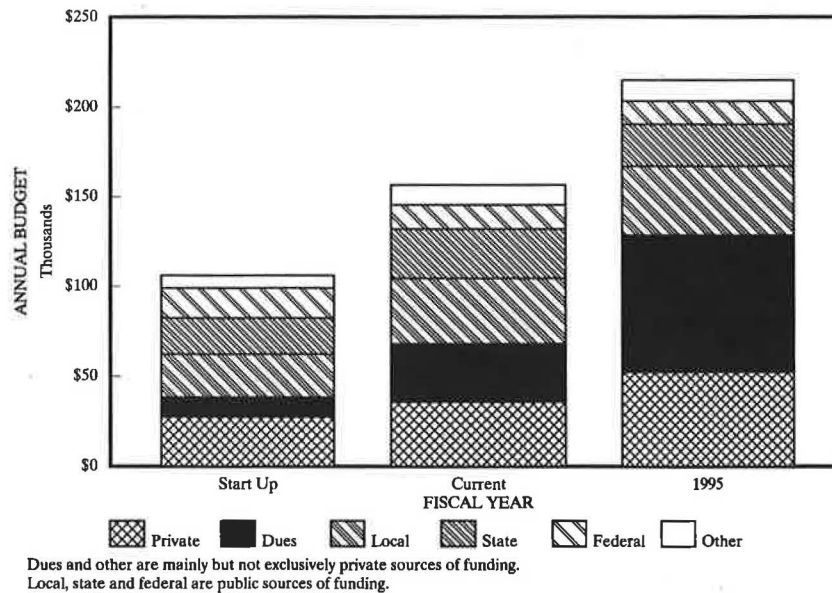


FIGURE 3 TMA annual budgets by source of funding and fiscal year.

individuals, and chambers of commerce. These groups usually are placed into special dues categories, often paying a flat membership fee.

Many TMA employer membership dues rates are actually a combination of a flat fee per firm and a marginal fee per employee, for example, a flat fee of \$350 plus \$2 per employee above 25 employees. Dues rates vary widely from one TMA to another and also may vary considerably for firms of different sizes within individual TMA market areas. The average cost of TMA membership ranges from a net of less than \$1 per employee to \$15 or more per employee per year. In most cases, larger employers pay more per firm than smaller employers but often far less on a per-employee basis. There is less variability in membership dues rates for firms with 100 to 1,000 employees, which apparently make up the principal target market for most TMAs (Table 2).

TMAs may be most useful in serving the needs of small employers within large employment activity centers, that is, those employers too small to develop cost-effective TDM programs on their own. However, current TMA pricing policies clearly favor larger firms over smaller ones. The result could be rather perverse if such pricing encouraged the participation of larger firms, which are capable of developing and implementing their own internal TDM programs, and discouraged smaller firms from participating. Larger firms might actually accomplish less in terms of TDM implementation by participating in the TMA than they would on their own initiative.

TABLE 2 TMA MEMBERSHIP DUES PER FIRM BY FIRM SIZE

Firm Size	Minimum	Maximum	Average	Standard Deviation	Average Per Employee
10 employees	5	2,500	303	486	30.32
50	25	2,500	450	481	9.01
100	50	2,500	599	513	5.99
500	250	5,000	1,914	1,417	3.83
1,000	350	10,000	2,819	2,533	2.82
10,000	350	100,000	12,513	26,768	1.30

FINANCING

Budget

The average TMA has a start-up budget of about \$100,000, a current fiscal year budget of over \$150,000, and hopes to have a 1995 annual budget of more than \$200,000 (Figure 3). In the early years of TMA development, developers typically make the largest private-sector contributions and county governments generally make the largest public-sector contributions. State and federal funds usually take the form of seed grants to fund start-up costs for new TMAs; these funds are not expected to continue past a couple of years for most TMAs. Anticipated growth areas for additional TMA funding by the year 1995 include private employers, membership dues, and other, mainly fee-for-service programs. The most rapid growth in TMA funding is anticipated to occur in the area of membership dues revenues, which have increased rapidly from about \$11,000 at start-up to \$32,000 in the current fiscal year, and are expected to double again to \$69,000 in 1995.

Staffing

The average TMA has 2.7 employees, 1.7 of whom (62 percent) work full time; the remaining 1.0 (38 percent) is part-time. The TMA staff of 2.7 is split among executive director (0.92 person), other professional and managerial staff (0.77 person), and clerical, secretarial, and other support staff (0.98 person). Three-fourths of all executive directors (75 percent) and over two-thirds of all other professional and managerial staff (73 percent) work full time for the TMA. Most TMA clerical and support staff are employed on a part-time basis.

GOALS AND OBJECTIVES

Given the modest financial resources of most TMAs, one might expect rather limited goals and objectives to be the rule

rather than the exception. Similarly, the kinds of services offered by TMAs on such limited budgets should be equally modest. In fact, TMA goals and objectives are often quite ambitious. TMAs generally are not overly specific in quantifying targets for attainment, however, unless operating under the aegis of local or regional trip reduction ordinances. The most important goals of TMAs include implementing TDM strategies, reducing traffic-related problems, promoting economic development, and increasing the capacity of the transportation system (Table 3).

- **Demand management:** The most important TMA objectives often include the implementation of specific TDM strategies, such as the promotion of ridesharing and transit use, or provision of TDM services to employers and employees. Parking management has been shown to be perhaps the most effective TDM strategy (12–13). Unfortunately, parking management was the least important TDM objective of many TMAs.

- **Traffic mitigation:** Next in importance as a TMA goal is the mitigation of traffic problems. First and foremost among these is the reduction of local and regional traffic congestion, followed by reduced local and regional air pollution, compliance with local trip reduction ordinances and regional air quality regulations, and energy conservation. The single most popular TMA goal was reducing local traffic congestion, which surpassed any single TDM objective.

TABLE 3 RELATIVE IMPORTANCE OF TMA GOALS AND OBJECTIVES

Goals and Objectives	Not Important	Somewhat Important	Very Important	Greatest Importance
<i>Transportation Demand Management</i>				
Promote increased ridesharing	7	14	36	43
Provide transport services to employees	9	16	40	36
Provide transport services to employers	9	21	40	31
Promote greater transit ridership	21	16	35	29
Retain or recruit employees	21	31	38	10
Better manage parking demand	35	19	24	22
<i>Mitigation of Traffic Problems</i>				
Reduce local traffic congestion	3	10	38	48
Reduce regional traffic congestion	10	14	41	35
Reduce local air pollution	19	17	34	29
Reduce regional air pollution	21	29	21	29
Comply with trip reduction ordinances	45	10	14	31
Comply with air quality requirements	35	26	12	28
Help conserve energy	31	53	14	2
<i>Land Use/Economic Development</i>				
Allow more office development	33	26	26	16
Allow more commercial development	31	33	21	16
Promote local economic development	21	30	41	9
Improve image of business community	17	45	29	9
Allow higher density development	33	38	21	9
Promote regional economic development	36	33	24	7
Promote regional jobs/housing balance	47	31	14	9
Allow more retail development	53	24	17	5
Increase local land values	55	31	12	2
Allow more industrial development	67	19	10	3
Allow more residential development	74	16	9	2
Promote more affordable housing	81	10	7	2
<i>Transportation Supply Enhancement</i>				
Promote local transit improvements	28	21	33	19
Promote new regional transit facilities	45	22	22	10
Promote local street improvements	47	26	21	7
Promote new regional highway facilities	57	22	16	5
Help finance regional transit facilities	74	14	9	3
Help finance local transit improvements	76	12	7	5
Help finance local street improvements	81	12	5	2
Help finance regional highway facilities	83	10	7	0

Percentage of TMAs. All rows sum to 100%.

- **Economic development:** Somewhat less important to the typical TMA are land use and economic development. Of these, allowing more commercial and office development ranked highest, followed by the promotion of local economic development and development of higher density. Promotion of greater regional jobs/housing balance was ranked in the middle, and promoting more affordable housing was last among all land use and economic development objectives.

- **Supply enhancement:** Transportation supply enhancement is the least favored of all TMA goals. TMAs rated the promotion of transportation supply enhancements moderately high, whereas financing such improvements was given a very low priority. TMAs favor local and regional transit improvements slightly over local street and regional highway improvements.

PRODUCTS AND SERVICES

TMAs were asked if they offered or brokered any or all of 40 different types of TDM products and services. Offering a service implied that the TMA was responsible for all or most aspects of its provision. Brokering a service implied that the TMA only referred the products or services to other qualified service providers. There appeared to be some disagreement or confusion among TMAs concerning this distinction, which is readily apparent from the results. This may have been a survey design problem, a survey response problem, or both. Because of this ambiguity, the results reported here should be treated with some caution.

The most common types of TDM products and services offered by TMAs include information and assistance, program operations, alternative work schedules, and convenience incentives (Table 4). Less frequently offered TMA products and services include financial incentives, facilities improve-

TABLE 4 FREQUENTLY OFFERED TMA PRODUCTS AND SERVICES

Type of Service ¹	Offering ²	Direct ³
<i>Information and Assistance</i>		
Car/vanpool matching information	96	70
Transit route information	88	81
Computerized matching assistance	83	70
Transit scheduling information	77	65
Personalized matching assistance	73	83
Professional transportation coordinators	67	69
New hire orientation meetings	54	73
<i>Program Operations</i>		
Guaranteed ride home programs	71	77
Vanpool programs	63	50
Buspool programs	38	33
Fleet-pool programs	19	44
<i>Alternative Work Schedules</i>		
Flexible work hours	56	48
Staggered work shifts	52	44
Adjustable hours for ridesharing	46	50
Compressed work weeks	46	41
<i>Convenience Incentives</i>		
Carpool preferential parking	58	54
Vanpool preferential parking	58	50
On-site transit pass sales	50	71
Shuttle buses for midday use	46	36
Fleet vehicles for midday use	29	43

¹ Multiple responses possible.

² Percentage of all TMAs.

³ Percentage of those TMAs offering service.

ments, telecommunications (as a substitute for travel), and on-site services (Table 5).

Information and Assistance

A high percentage of responding TMAs provide carpool and vanpool information, transit route and scheduling information, computerized and personalized carpool and vanpool matching assistance, professional transportation coordinators, and new-hire orientations. These services, if available, usually are provided directly by the TMA. These types of services are similar to those long favored by traditional ride-sharing and transit agencies.

Alternative Work Schedules

About half of all TMAs offer scheduling of flexible work hours, staggered work shifts, and compressed work weeks, as well as adjustable hours for ridesharers. Use of alternative work schedules may conflict with promotion of alternative mode choices (13). It is helpful that many TMAs are attempting to obviate this problem by linking the two.

Convenience Incentives

Convenience incentives are somewhat less common. Nonetheless, carpool and vanpool preferential parking is available at over half of all TMA sites. Half of all TMAs offer on-site transit pass sales and almost half have shuttle buses available for midday use. These types of incentives are quite common among employer TDM programs, but have not been shown to be very effective in the past (14).

TABLE 5 LESS COMMON TMA PRODUCTS AND SERVICES

Type of Service ¹	Offering ²	Direct ³
<i>Financial Incentives</i>		
Prizes/awards for ridesharers	44	76
Vanpool subsidies	40	53
Transit subsidies	35	47
Carpool subsidies	33	31
Discount parking for carpoolers	21	20
Discount parking for vanpoolers	19	22
No free parking for drive alone	13	17
<i>Facilities</i>		
Transit facilities	33	25
Bicycle facilities	33	38
Traffic facilities	31	33
Pedestrian facilities	27	39
Highway facilities	23	27
<i>Telecommunications</i>		
Telecommuting	33	31
Teleconferencing	17	25
Teleshopping	17	25
<i>On-site Services</i>		
Child care facilities	19	56
Restaurants/cafeterias	15	57
Automatic tellers	10	20
Dry cleaners	8	50

¹ Multiple responses possible.

² Percentage of all TMAs.

³ Percentage of those TMAs offering service.

Program Operations

Perhaps the most innovative aspect of TMA services is the strong commitment being shown to guaranteed-ride-home programs, which are offered quite frequently, often directly by the TMA itself. Vanpool programs are also fairly common, though many of these are brokered, as is to be expected.

Financial Incentives

Financial incentives are used quite sparingly by most TMAs. The most common of these are prizes and awards for ride-sharers, followed by vanpool, transit, and carpool cash subsidies. Discount parking for carpoolers and vanpoolers is rarely available. Elimination of free parking for employees who drive alone is the least common of all financial incentives. Lack of financial incentives may be due to employer rather than TMA priorities, but is still unfortunate, given that parking pricing has been shown to be one of the most consistently effective strategies for increasing the level of ridesharing and transit use, even in suburban activity centers (15).

Telecommunications as Substitute for Travel

About one-third of TMAs promote telecommuting as an alternative to driving alone. Teleconferencing and teleshopping are far less common. TMA telecommunications-related services tend to be brokered rather than directly provided.

On-Site Services

On-site services are offered only rarely, though almost one in five TMAs does provide access to or information about child care services and facilities.

Facilities Improvements

Facilities for transit, bicycles, local traffic, pedestrians, and regional highway access are provided by very few TMAs. The majority of these TMA products are brokered.

PERFORMANCE MONITORING AND EVALUATION

Given the ambitious goals that TMAs have set for themselves and the length of time that some of them have had to implement their TDM programs, one might reasonably expect TMAs to collect and analyze transportation impact data. Unfortunately, this is far from the case (16). TMA evaluative self-assessments are rare (2). Those that are conducted often do not include any information on measured changes in travel behavior associated with TDM program implementation (8).

Performance Monitoring

Most TMAs agree that performance monitoring and evaluation are important considerations and that measured changes

TABLE 6 TMA EVALUATION CRITERIA

Appropriate Evaluation Criteria ¹	% TMAs Supporting
Changes in employee mode of travel	89
Changes in the number of vehicle trips made	81
Changes in the supply of transportation services	58
Changes in the number of person trips made	45
Changes in the supply of transportation facilities	40
Changes in employee time of travel	34
Changes in the location of activities	23
Other changes	8

¹ Multiple responses possible.

in travel behavior can and should be used to gauge their individual success (Table 6). Changes in employee mode of travel and the number of vehicle trips attracted to the site are far and away the most commonly accepted measures of TMA performance, followed by changes in the supply of transportation services. Less than half of all responding TMAs consider any other performance measures as relevant.

Evaluation

Given the fairly general agreement on the importance of quantifiable TMA performance measures, it is somewhat surprising that 54 percent of all TMAs have never undertaken any type of evaluation. Of those that have undertaken evaluation studies, 69 percent have engaged third parties to provide objective evaluation results, and 31 percent have conducted only in-house performance reviews. The third-party evaluator most commonly relied on by TMAs is a government agency charged with monitoring a public grant or contract, usually as required by law rather than under the initiative of the TMA. Only 19 percent of TMAs engaged in evaluation activities had actually completed their assessments at the time of the survey. Under current budget constraints, almost one-fourth of the responding TMAs believe that they will be able to conduct full-scale third-party evaluations of their performance every year or, barring that, every 2 or 3 years (31 percent). Still, one in three TMAs believes that third-party evaluations can never be done under current budget conditions. One in five TMAs considers that evaluations are never needed, even under ideal circumstances (Table 7). The fact remains that even those TMAs that have completed third-party evaluations appear to be reluctant to share the results with outside parties such as our research team.

CONCLUSIONS

TMAs were first created in the early 1980s, most often to assist concerned private-sector individuals and firms to better manage travel demand. Most such efforts were made in rapidly expanding suburban employment activity centers. TMAs have recently become more popular and more geographically widespread, with the number of TMAs identified at the national level increasing from just over 50 in 1988 to well over 100 by 1991. Most TMAs are organized as private, not-for-profit corporations, and most are initiated primarily through activities of the private sector. Most TMA board members represent private interests, and most corporate TMA mem-

TABLE 7 EXPECTED AND DESIRED FREQUENCY OF TMA EVALUATIONS

Frequency ¹	Under Current Budget	Under Ideal Circumstances
Never	29	20
Less than every three years	16	8
Once every two or three years	31	27
Once a year	24	45

¹ Percentage of TMAs. Both columns sum to 100%.

bers are drawn from the private sector. Nonetheless, difficulty in recruiting new corporate members and generating secured sources of financial support and other commitments from the private sector are among the most common complaints of TMA board members and executive directors alike.

TMAs have ambitious goals and objectives. They tend to focus on demand management rather than on supply enhancement as a means to reduce traffic congestion and air pollution, or to increase the size and density of commercial and office development in suburban activity centers, or to achieve both of those goals. Toward these ends, TMAs often rely on fairly traditional forms of persuasion, such as the provision of information and assistance to employees interested in alternatives to driving alone, rather than on parking pricing and supply control measures. TMA evaluation efforts generally have been limited in scope, and often have not been widely distributed, even when undertaken. This is perhaps understandable, given the limited resources and the types of strategies most often employed by TMAs in efforts to modify travel behavior.

The survey revealed several areas in which TMAs can improve their performance, including the following:

- Private-sector participation: Identify strategies for increasing private-sector participation in TMA financing and operations and expand corporate membership dues programs on the basis of the provision of valued services.
- Program implementation: TMA members and staff need to be better informed about the potential effectiveness of parking management, road pricing, and ridesharing and transit subsidy programs that have been shown to be effective, even in suburban operating environments.
- Performance monitoring and evaluation: More effort should be directed toward serious TMA evaluation, including the production of quantifiable estimates of changes in travel behavior associated with the operation of TMA programs and services and their costs.

With more stable financing and improved services, TMAs may have greater success in reducing traffic congestion and air pollution within their market areas (17). Without these improvements, however, examples of measurable changes in travel behavior associated with TMAs will remain difficult if not impossible to find. To demonstrate their effectiveness, TMAs will need to devote more resources to evaluation efforts. When asked to identify their top three implementation priorities for the next 3 years, TMAs focused overwhelmingly on the provision of additional transit and ridesharing services (Table 8). Shuttle bus services are particularly popular at the moment as new TMA initiatives. Other top priorities include

TABLE 8 TOP THREE TMA IMPLEMENTATION PRIORITIES

Priority	First ¹	Second	Third	Average
Provide more ridesharing services	23	23	11	19
Increase education/marketing efforts	9	15	17	14
Implement new transit services	7	15	13	12
Provide more convenience incentives	14	11	9	11
Increase funding/revenues/staffing levels	5	11	11	9
Provide other new services	5	6	13	8
Achieve regulatory compliance	9	2	11	7
Increase corporate membership	13	4	4	7
Implement new alternative work schedules	2	4	4	3
Adopt new parking management strategies	5	4	0	3
Conduct evaluation studies	2	2	4	3
Implement highway improvements	2	2	2	2
Implement bicycle improvements	2	2	0	1
Other priorities	2	0	2	1

¹ All columns sum to 100%.

additional education and marketing efforts, and increased funding and staffing. Compliance with regulatory measures, increased membership, and parking management are mentioned less often as top priorities. Changing employee travel behavior and evaluating the effectiveness of overall TMA programs was rated highly as a priority by only a handful of TMAs. These priorities may need to change if TMAs are to become able to demonstrate their effectiveness in any statistical sense.

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