Joint Institutional Transportation Systems Management Program

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In San Francisco, as in many cities, institutions located in residential neighborhoods outside the downtown business district generate traffic and parking conditions that pose concerns for area residents and for the institutions themselves. An approach to transportation systems management (TSM) undertaken by the city of San Francisco and a consortium of 14 major institutions in response to the transportation problems of institutions in urban residential neighborhoods is described. The objectives of the joint TSM program are to reduce automobile parking and traffic impacts by means of low-capital-cost measures such as ridesharing, public and private transit services, parking management, and marketing incentives and to foster economies of operation through the institutions' cooperative efforts. The successful implementation of TSM measures at three of the participating institutions demonstrates the validity of the approach and provides a means for the early evaluation of the total program.

The San Francisco Department of City Planning and a consortium of 14 major institutions (nine hospitals, four colleges or universities, and a private insurance company) located in neighborhood districts are participating in the San Francisco Joint Institutional Transportation Systems Management (TSM) Program. The objectives of the TSM program are to reduce automobile parking and traffic impacts at each institution by means of low-capital-cost measures such as ridesharing, public and private transit services, parking management, and marketing incentives and to achieve greater impact through cooperative efforts among the participating institutions.

This joint-action TSM program, initiated and run at the institutional level, is the first of its kind in the nation and is a test case for potential application to other cities throughout the country.

PROGRAM ORGANIZATION

The overall program is organized into four phases:

1. TSM plan development,
2. Transportation broker training,
3. Program implementation, and
4. Evaluation.

Phase 1: TSM Plan Development

The first phase identified appropriate TSM actions, set working goals, and served as a reference guide during the implementation phase. Specific steps in the development of the TSM plan are to

1. Compile available transportation data and information;
2. Conduct and analyze employee travel surveys;
3. Survey existing and planned public transit to the facility, use of on-site parking, traffic conditions in the areas, and transportation programs;
4. Identify and recommend TSM measures appropriate to each institution, stressing practical actions and joint efforts; and
5. Set TSM program goals and specify implementation activities.

Phase 2: Transportation Broker Training

As a requirement of program participation, each institution designated at least one individual, a transportation broker, to assume responsibility for implementation of the TSM plan. Concurrent with the planning study, a transportation broker training course was conducted; it involved 10 classes of 3-4 h each. The course covered all aspects of TSM, including ridesharing, carpooling, vanpooling, club buses, parking management, transit, marketing, and institutional-management responsibility. Experts and managers of these various types of systems served as guest lecturers.

Phases 3 and 4: Program Implementation and Evaluation

The final two phases of the overall program are in process. The implementation phase has already begun under the direction of the transportation brokers. It will take several years to fully implement the plans and to accomplish their goals, but much of the groundwork is being laid in the first year. The fourth phase, that of evaluation and program monitoring, will be a continuing task.

EXISTING CONDITIONS

Employment

Employment varies considerably among the institutions. The largest single employer, the University of California at San Francisco (UCSF), has some 5700 faculty and staff members. Most of the other institutions employ 1000 to 2000 employees. In terms of total site population, however, the campuses of City College of San Francisco and San Francisco State College far exceed all other institutions since they have student enrollments of approximately 25 000 each.

Work Schedule

The various hospitals surveyed operate around the clock with several fixed work shifts. A smaller portion of their employees are on standard daytime work schedules than is the case with other types of employers. Similarly, daily and semester attendance patterns of college students and faculty members can be irregular and can include a significant number of nighttime travel activities.

The variation of employee work schedules has important effects on ridesharing and transit potential since it makes it more difficult to match commuting times on a regular basis and since significant travel takes place at night, when transit service is curtailed. Two institutions have adopted flexible work schedule policies designed to make it easier to share rides and to use transit service.

Means of Commuting

At all institutions except UCSF and Fireman's Fund, employees commute primarily by single-occupant automobile. Similarly, only at City College and UCSF do less than half the students drive alone. In most cases, public transit is the second most frequently reported means of commuting (typically somewhat less than one-fourth of the employees and students). In the case of City College, however, more than half of its students use public transit on a regular basis.

Carpooling exists at all institutions but only to a relatively limited extent. Buspools are operated at only two of the institutions--UCSF and Fireman's Fund--and significant numbers of vanpools operate only at UCSF.

Residence Locations

The nature of transportation services available to employees is highly dependent on residence location. Almost two-thirds of the hospital employees live within San Francisco. Fireman's Fund and campus employees have a greater tendency to live outside the city; for the most part, students tend to live in the city (indeed, virtually all City College students reside in San Francisco).

General residence is correlated with mode choice for commuting. The greatest use of single-occupant cars for commuting is by employees who live outside the city, particularly on the peninsula. This reflects the lengthy and difficult transit access from those areas.

POTENTIAL FOR TSM IMPROVEMENTS

The process for determining potential TSM improvements at each institution consisted of

1. Identification of existing transportation deficiencies,
2. Review of employee perceptions about transportation alternatives,
3. Consideration of neighborhood concerns about parking,
4. Consideration of the implications of the San Francisco Municipal Railway (Muni) five-year plan,
5. Identification of candidate TSM measures, and
6. Evaluation of TSM potential and development of the TSM program.

Existing Transportation Deficiencies

Assessment of the institutions' existing transportation services reveals the following general areas for improvement:

1. Ridesharing--Although a few of the institutions promote carpools, vanpools, and buspools, there was general need for incentives to be provided and pooling programs made visible to employees.
2. Public transit--Because the institutions are located away from the downtown focal point of local and regional transit services, they are difficult to serve well by transit. Although deficiencies are specific to each institution, in general it is observed that direct crosstown service is lacking and that in many cases access to regional transit systems requires more than one transfer or a circuitous trip.
3. Parking--At all institutions, parking is heavily used and spillover onto neighboring residential streets occurs. In many instances, parking is provided free or at low cost to employees, and no preference is given to carpoolers.
4. On-site marketing--In general, the institutions currently do little to inform employees of alternatives to the single-occupant car or to encourage their use.

Employee Perceptions About Transportation Alternatives

The travel survey asked questions about employee attitudes and interest in ridesharing and in transit. The responses reflect a general interest in any form of ridesharing, provided work schedules would be satisfied. A significant number of employees were dissatisfied with transit reliability, service frequency, directness of service, and, in certain areas of the city, safety.

Neighborhood Concerns About Parking

One of the major concerns being addressed by the TSM program is parking spillover into residential areas. Interest within San Francisco for neighborhood residential parking programs is strong and will probably continue to grow over the next few years.

Muni Five-Year Plan

Major transit service improvements are scheduled or proposed in the next five years; some of these could significantly benefit the TSM program participants. The Muni five-year plan contains recommendations for a comprehensive restructuring of Muni transit routes. The existing radial system that focuses on the downtown would be reoriented toward a grid system that would concentrate more service into north-south and east-west routes. This would greatly improve crosstown transit service and reduce service duplication to the downtown area.

EVALUATION OF TSM POTENTIAL AND DEVELOPMENT OF TSM PROGRAM

Various TSM measures were evaluated in light of the nature of each institution and its workforce, potential to resolve identified transportation deficiencies, and potential for implementation at the institution. Inappropriate measures were screened out and a comprehensive TSM program was developed that was tailored to the specific needs and constraints of the particular institution.

Candidate TSM Measures

A comprehensive range of TSM measures was considered:

1. Ridesharing--carpools, vanpools, buspools;
2. Transit--modifications to Muni five-year plan proposals (or interim route changes) to improve service to specific institutions and special shuttle services to supplement Muni;
3. Parking management--measures to favor carpool parking priority, short-term parking, parking-fee changes, bicycle-parking provisions, etc.;
4. Traffic operations--low-capital-cost measures to improve intersection operations and parking-lot access and egress;
5. Marketing--on-site transportation-information dissemination, advertising, and promotion of alternatives to the car; and
6. Administration--transportation brokers, employee transportation committees, and ongoing program evaluation.

Goals for the TSM Program

It is important to set goals for the TSM program that address the major transportation concerns at each institution and that are realistic. Two concerns are most apparent: those of parking and of traffic congestion. These concerns are shared by both the institutions and neighborhood residents, and the problem is frequently an existing one rather than one keyed to projected growth.

The primary goal of the TSM program, then, should be to reduce parking and traffic generated by the institution's population by attracting more

commuters to ridesharing and to mass transit.

Specific target levels were suggested for each institution. Essentially, the goal is for a significant reduction in the number of single-occupant automobile drivers to each institution, since the private car is the predominant means of transportation to most institutions among both employees and students.

EARLY EVALUATION

UCSF

UCSF is at the forefront in terms of its commitment to reduce impacts through TSM measures. UCSF's transportation program consists of carpool rider matching, vanpools, buspools, shuttle-bus service, marketing parking management, and other measures to promote use of these services. UCSF has committed three transportation coordinators to implement and administer the various transportation services offered. In addition, committees on parking and transportation deal with campus-related transportation issues as an ongoing activity.

The UCSF transportation program has reduced overall vehicle traffic generated by the campus by 8 percent in relation to levels that would be expected in the absence of the program. The program effected a 2 percent net reduction from 1974 traffic levels, even though campus population has grown by 5 percent since that time. The reduction in traffic generated has reduced parking space needs, vehicle miles of travel (an indicator of energy consumption and automobile-pollutant emissions), and user costs. Approximately 1200 employees and students (20 percent of the UCSF population) participate in 6 buspools, 30 vanpools, and 200 carpools, compared with some 200 persons in carpools and no buspools or vanpools in 1970. Overall, two-thirds of the daily employee, student, and visitor trips to UCSF are not made in single-occupant automobiles.

Fireman's Fund

Fireman's Fund has successful club-bus and vanpool programs that account for more than 40 percent of employee work trips. At present, 2 club buses, 3 vanpools, and 105 carpools are operating at the facility. Another 15 percent of the employees use transit. Thus, the ridesharing program is at a level equal to the goals for other institutions.

Children's Hospital

Children's Hospital has had a transportation broker implementing TSM measures for the past year. The program at Children's Hospital, assisted by neighborhood permit parking and parking-management measures in their garage, now includes 60 three-person carpools, monthly transit-pass sales of 100, a paratransit shuttle system that is in the process of being implemented, new-employee orientation, extensive marketing, and the placing of Children's Hospital employees in joint carpools, vanpools, and buspools cooperatively with at least six other participating institutions. Of about 750 day-shift employees, Children's Hospital estimates that close to half use ridesharing, transit, or other nonautomobile means to make their work trip. One unique feature at the hospital is a 15-person carpool. Since nursing and other work assignments at the institution are so variable with respect to day and time, whichever members of the pool are working that day meet at a specific staging point and take only as many vehicles as are needed to get the group to work.

CONCLUSIONS

Several unique features of the San Francisco TSM program deserve highlighting. First and foremost, this is a working program, not a planning exercise. This TSM program reduces automobile trips, makes more efficient use of present resources, promotes ridesharing and transit, improves neighborhood relations for the respective institutions, and provides a valuable employee benefit. The continuing day-to-day work of the transportation broker is the heart of the program. The enthusiasm and commitment of the broker determine the relative success of the program. The program is ongoing; continuity is maintained through a cooperative transportation brokers' association.

Second, a collective program is much more effective than focusing on a single cure-all such as carpools or express buses. Ridesharing, transit marketing, parking management, and new-employee orientation are all cumulative in their impact.

Third, joint actions by institutions located relatively close to one another make feasible measures that, if undertaken by an individual institution, would be clearly unsupportable for want of a sufficient number of users. For instance, the requisite numbers of individuals to form a buspool or vanpool can be grouped readily from travelers to two or three institutions separated by a few city blocks. Similarly, sufficient patronage to justify express suburban transit links can be developed if the service is tailored to link groups of institutions with the corridor. Although there are substantial variations among characteristics and needs of travelers to the various institutions, joint action makes it possible to offer more types and levels of service and to make such service responsive and attractive to greater numbers of people.

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