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Regulating Traffic by Controlling Land Use: The Southern California Experience

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INTRODUCTION

American attitudes toward transportation planning have recently undergone significant change. For three decades after the end of World War II, public policy emphasized the construction of new highway and transit facilities in order to remove the backlog of needs which resulted from the combined effects of depression, a war economy, continued urban growth, and accelerating automobile ownership. For the most part, there was consensus among transportation policymakers that their primary goal was to accommodate growth by constructing facilities which would have adequate capacity to handle future demand. It was understood that land use patterns and economic development were the sources of traffic, yet there was general agreement that transportation policy should aim to accommodate forecast land use and economic growth rather than to regulate them in order to control traffic.

Views of transportation policymakers have been changing under pressure from increasing growth and traffic congestion, coupled with growing limits on transportation budgets, and increasing opposition to highway construction by environmental coalitions and community groups. Now, policymakers frequently argue that "we can't build our way out of our problems," and that attempts to accommodate growth solely by increasing transportation system capacity impose greater costs on communities than are warranted by their benefits. In the seventies, this shift in emphasis gave rise to "transportation system management," the augmentation of capacity through low-capital-cost approaches such as traffic signal synchronization and reserved lanes for high occupancy vehicles. In the early eighties, "transportation demand management" was also emphasized, including efforts to promote ridesharing and transit use by workers through a variety of subsidy and incentive programs. In the late eighties this growing movement toward management rather than facility construction has emphasized changes in land use policy and the spatial redirection of economic growth to control traffic at its source. This represents a change in basic direction for transportation planning, and nowhere in the United States has this shift of emphasis been more dramatic than in Los Angeles.

There is international interest in recent efforts to accommodate growing traffic congestion in Los Angeles through demand management. This is especially true because these programs differ dramatically from the earlier emphasis on facility construction. This paper will summarize several of the programs recently initiated in Los Angeles. It will then evaluate some dimensions of the programs, and conclude that while they respond to a political climate of perceived crisis, the adopted programs have thus far been enacted without adequate technical analysis of their likely consequences. The final section argues that the programs may produce results which will fall short of achieving their

goals, and that much more attention should be given to the analysis and evaluation of transportation control programs.

FUTURE TRANSPORTATION POLICY OPTIONS IN SOUTHERN CALIFORNIA

The world sees Los Angeles as the epitome of the sprawling automobile-oriented metropolis, which has built thousands of miles of high-speed freeways and maintained relatively low density residential and commercial areas despite rapid growth. In recent years, however, Southern California has actually been in the forefront of efforts to formulate transportation policies which control traffic rather than accommodate it by facility expansion. The main motivation for this change in orientation is the huge expense which would be entailed if forecast population and traffic growth were to be accommodated by new highway and subway construct-ion alone. Also important is the region's severe air quality problem. Significant progress has been made in cleaning up the air by controlling industrial polluters and substantially reducing emissions from each new automobile added to the regional fleet. Growth in the number of cars and in the mileage driven by each threaten, however, to soon undo the progress made so far. Regional land use, transportation, and air quality planners are outdoing one another in the promulgation of plans and policies designed to reduce traffic by controlling economic growth, activity patterns, and land use.

The Southern California Association of Governments (SCAG), for example, has recently distributed a draft Regional Mobility Plan (1988), which projects a 42% increase in the region's daily trips between the years 1984 and 2010, with morning peak-hour vehicle-miles of travel (VMT) increasing by 69%, and afternoon peak-hour VMT by 71%. As a consequence of this growth, the study projects that if current facilities are relied upon through 2010, for every lane-mile of freeway on which there was peak-hour congestion in 1984, there will be 22 congested lane-miles by 2010. Average system-wide speed is projected to drop from 31 miles per hour in 1984 to 19 miles per hour in 2010, and by that target date the planners estimate that half of the time spent in travel will be spent in delay. Such dire predictions are common in regional transportation reports which are intended to spur a variety of political responses. What is unusual is the array of possible policy responses listed in the report.

The planners who prepared this study evaluated four basic regional strategies for coping with the forecast growth, providing data which will help regional policymakers arrive at a preferred course of action. Strategy one emphasizes facility construction. If adopted it would cope with the projected growth by building more than 5,000 new lane-miles of freeways, more than 2,000 new lane- miles of

bus and carpool lanes, and 367 miles of rapid transit routes. The planners note, however, that this program would involve a capital cost of 111 billion dollars, whereas current and projected funding programs could be relied upon to provide only fourteen percent of the resources needed for highway capital projects, and only 12 percent of the projected cost of transit construction projects. The public operating costs of the regional transportation system would be 96 million dollars per year, and under current funding programs only seventy percent of the highway and eighty percent of the transit operating costs could actually be funded.

The shortage of funds to implement a capital intensive program is a major impetus for the development of alternatives to that plan. In addition, there is the growing feeling among citizens that building more highways and transit lines is socially and environmentally disruptive, and likely to fuel a spiral of new development which would eventually lead to the requirement for still more infrastructure.

While the Regional Mobility Plan stops short of advocating which course of action should be chosen, it presents three alternatives to the first strategy which are clearly designed to avoid "building our way out of the problem." Strategy Three, for example, proposes to meet the transportation needs associated with future growth through travel demand management and by achieving a greater "jobs/housing balance," thus reducing the need for travel, especially at peak hours. This possible transportation and land use plan includes only 875 lane-miles of new freeway construction, along with less than a thousand miles of exclusive lanes for high-occupancy vehicles, and the rapid transit mileage is increased to 400. But, this policy option contemplates controlling the location of new jobs and residences so that twelve percent of all the region's new jobs (some 360,000 positions) would be redirected as a matter of policy from areas which are considered housing poor to areas which are considered housing rich; and that six percent of the growth in housing units (some 150,000 dwelling units) would be redirected by policy from areas which are considered job-poor to areas considered job rich. In addition, this plan would depend on increased use of transit and ridesharing, and increased use of modified and flexible work hours to reduce daily peak-hour single occupant auto trips by several million.

Compared to exclusive reliance on building transportation facilities, this alternative would reduce capital and operating costs significantly. But regional bodies lack legal authority to impose upon local governments, land owners, employers and real estate developers the requirement that they redirect the location of new development or mandate transit and carpool use by their citizens and tenants. Lacking such authority, can regional agencies convince local governments, employers, real

estate developers, and others that it is in their best interest to act cooperatively toward this end? If past experience is indicative of public attitudes, the absence of clear authority to impose such programs on local governments will make it extremely difficult to implement them.

While strategies one and three are the extreme examples, the remaining two possibilities discussed in the Regional Mobility Plan involve different combinations of the construction and growth management approaches. The choices facing Southern California are thus clear, but unsettling. Planning must either emphasize facility construction with no assurance of funding to implement adopted plans; or it must emphasize controls on land use and travel choices in the absence of assured legal mechanisms by which to enforce changes in locational and travel behavior. The political climate at the moment is leaning toward a blend of the two approaches with most emphasis on the latter. Several bodies in the region have already adopted programs which limit or control land development for the purpose of controlling traffic.

ADOPTED LAND USE AND GROWTH CONTROL MEASURES IN SOUTHERN CALIFORNIA

The citizens of Los Angeles and their representatives at several levels of government have already enacted several land use and environmental regulations which aim to control growth and limit development approvals to the extent that new building is consistent with existing highway capacity, or where developers contribute financially to the enhancement of transportation capacity.

Proposition U:

The voters of the City of Los Angeles, in a general election held in November of 1986, approved a measure entitled "Proposition U," which reduced allowable development on most land zoned for commercial development. Most of the so-called "strip commercial" zoning in the city was affected, along its arterial streets and boulevards, where many of the city's shopping facilities and an increasing amount of its office space are located, although certain designated high-density centers were explicitly exempted from the "downzoning." The measure halved allowable development in these zones by lowering the floor area ratio for new development to 1.5:1 from its previous value of 3:1. Thus, in an area where a new building could previously contain usable floor area of three times the buildable lot area, it can now only consist of one and one-half times the buildable lot area. Voters in all areas of the city, of all ethnic groups, and of all income levels, approved this measure by a majority of about three to one, and most interpretations link approval of this measure primarily

with public concerns over growing traffic congestion. The commercial zones affected by the zoning change were seen to be the source of a large proportion of the city's peak-hour traffic and the voters sensed a consistent worsening of rush hour congestion. The voters were also concerned about the "spillover" of parked cars into residential neighborhoods which abut the commercial strips along the city's major boulevards. When shoppers, office workers, doctor's patients, and others find inadequate parking in the commercial structures, or prefer to seek free on-street parking rather than paying for parking in the commercial developments, the streets of surrounding residential neighborhoods sometimes become clogged by autos which belong to non-residents, adding to the residents' perception that the commercial development is bringing with it a severe traffic congestion problem. Enthusiastic voter approval of the reduced zoning of Proposition U was a response to such concerns.

The TRIP Program:

Another measure recently passed by the Los Angeles City Council is the Traffic Reduction and Improvement Program (TRIP). The council approved a blanket, or "framework" ordinance which makes it possible for the council henceforth to designate, by a majority of two-thirds, any community or neighborhood a "traffic impact area." When an area is so designated, a set of procedures is invoked resulting in special land use controls and development impact fees within the designated areas. These are intended to mitigate the impacts of trips which are generated by new developments there. The designation of a traffic impact area requires the city to spend one year devising a transportation specific plan for the impacted area, during which development permits may be issued only with the explicit approval of the council. When the year-long planning effort is completed, the council adopts, by separate ordinance, the transportation specific plan which was devised during the planning period. While the plans differ depending upon the specific areas to which they apply, they have certain general characteristics.

First, the plans require that any new non-residential development above a certain size (usually 10,000 square feet) meet a specific requirement that the developer calculate the trips caused by the development using specified trip generation rates. The developer must then plan to "mitigate" the effects of those trips. The required mitigation has two components. First, the developer must take action to reduce the afternoon peak hour trip generation of the project by at least 15%, for example by offering vanpool and carpool programs, or subsidizing the purchase of monthly transit passes for employees while reducing on-site parking. Secondly, the developer must agree to pay, prior to construction of the project, a one-time fee per remaining unmitigated afternoon peak-hour trip

produced by the project. The fee is deposited in a trust fund which is specific to each impact area, and which may be used by the city for the construction of projects included in the impact area's transportation specific plan, which will improve traffic conditions there. Included are street widenings, installation of computerized traffic signals, construction of remote parking facilities served by shuttle buses, and extensions or expansions of public transit routes, all of which have been enumerated in the transportation specific plan for the impact area.

The fee which must be paid has varied from one designated impact area to another, but has been at least $2,000 per predicted daily afternoon peak trip, and as much as $6,000 per afternoon peak trip, depending upon the area. If a developer can propose a demand management program to reduce generated trips by more than the required 15%, application can be made for a reduction in the required fees. For example, should the developer propose to reduce trips by 20% rather than the required 15%, the fee may be reduced by an amount equal to that which would be paid for 5% of the trips. However, if the developer accepts such a fee reduction and the trip reduction program falls short of the required goal, he must later pay "triple damages," in the form of a fee equal to three times what would have had to be paid prior to construction of the project.

Another feature of the specific ordinances for the impact areas typically provides that large projects must be broken into phases, with later phases being approved for construction only after earlier phases have been successful in achieving required trip mitigations.

Regulation XV:

A third program which has been implemented to regulate traffic has been imposed by the Southern California Air Quality Management District (SCAQMD), which has recently had its regulatory authority strengthened by the California legislature. Under Regulation XV, which went into effect on July 1, 1988, and which applies to all or part of six counties in Southern California, each employer of 100 or more employees must insure that its work force achieves a certain "Average Vehicle Ridership (AVR)" for journeys to work which occur between 6:00 a.m. and 10:00 a.m. The AVR is calculated by dividing the number of employees arriving at the work site by the number of autos arriving at the work site during those hours. This is done regardless of whether or not the employees actually use automobiles for their journeys to work. To the extent that workers use public transit, bicycles, walk, carpool, or vanpool to work, they have a positive effect on the employer's AVR. The regulation specifies that different AVR levels must be achieved at different locations, taking into account the fact that transit service is well developed downtown and sparse in low density

suburbs. An employer in the central district of the City of Los Angeles, for example, must achieve an AVR of 1.75, while in outlying areas a level of 1.5 or 1.3 is the target. Even the lower figure is a significant improvement over levels of 1.1 which were common in parts of the region prior to the adoption of the program.

Each employer of 100 or more workers - and there are more than 5,000 such firms and institutions in the affected region - must file with the SCAQMD an official document which presents an estimate of its AVR prior to the filing date, and must also include a plan by which the company or institution will meet the required AVR level within one year. The measures in the plan may include subsidized ridesharing for employees, the purchase by the employer of monthly transit passes for employees, the provision of bicycle parking and showering facilities, etc. At the end of the year, if the company has not implemented the plan it is subject to a fine. If the company has implemented the plan but has fallen short of its required AVR, it is not deemed to be in violation of the regulation, but must revise its plan and implement the revisions within the next year. Regulation XV also includes the requirement that each employer designate one staff member to be the program coordinator, and that the designated individual participate in a training program to insure that he or she is familiar with the regulation, with regional transportation options, and with air quality program goals and requirements.

Assessing the Impacts of the Control Measures:

The three measures reviewed in this section are indicative of the kinds of programs emerging throughout the United States with the goal of reducing traffic congestion by means other than the construction of highway and transit facilities. The first, and simplest in concept, is a direct land use regulation. By lowering the allowable intensity of development, trip generation is reduced in an effort to lessen the pressures of growth on existing highways and transit lines. The second example, the TRIP Program, is typical of many efforts around the country which place the financial costs of infrastructure needed to support new development upon the owners and developers of the land. These programs, frequently termed "exactions," are also being used increasingly, in a period of fiscal stress, to induce developers to pay for social services such as child care and recreational facilities. The third example, the SCAQMD's Regulation XV is far more extensive, in that it places a burden for the reduction of traffic on all employers of 100 or more workers throughout the region, whether they are engaging in new development or not; whether they are growing or contracting in size or economic activity.

Only time will tell whether programs of these types will succeed in reducing traffic congestion in Los Angeles. It will literally take decades to measure whether many of the intended consequences actually occur, because real estate development is a slow process and the intended benefits of the first two programs must await the decisions of land owners to redevelop land which is currently in use. Indeed, the existence of the new land use controls may itself slow the process by which the land market gives rise to periodic redevelopment of parcels.

In the remainder of this paper, I address a closely related question, and that is whether transportation planners presently possess the capacity to even measure the contributions which these programs might eventually make to public welfare. If we cannot measure the potential effectiveness of these programs, we must wonder whether they will survive legal challenges and political opposition which are certain to mount in the coming years, especially if the examples set in Los Angeles are followed by similar programs elsewhere.

INADEQUACY OF TECHNICAL ANALYSIS IN FORMULATING THESE PROGRAMS

Regional transportation planning in the United States for decades has been characterized by elaborate mathematical simulations and systematic quantitative evaluation. When transportation planners emphasized facility construction, the cost-effectiveness of alternatives was typically evaluated using modeling studies which loaded the projected growth in traffic for twenty or thirty years onto networks, and measured forecast flows, congestion, and delay against facility construction and operating costs. The recent changes in policy have, in contrast, been evaluated hastily, primarily on the basis of their political feasibility, and nearly without regard to their likely technical consequences. Under political pressure to do something quickly in response to the growing problem of traffic congestion, actions have been taken in the absence of analytical studies which might have shown that the policies are as likely to fail as they are to succeed. Many of the programs are dependent upon quantification of the impacts which they are intended to bring about, but they specify forms of quantification which are so gross that they are bound to be challenged. Thus, the rules promulgated under these programs prove to be extremely arbitrary when considered in analytical terms. It is likely that those who become subject to them will litigate on the basis of the arbitrary nature of the rules' requirements, and it remains to be seen whether their technical failings will result in the downfall of the programs. In the meantime, policies recently adopted in Southern California should be carefully monitored by researchers so that the successes and failures which do occur can provide a basis of

knowledge leading to more sophisticated strategies and more appropriate analyses of their consequences in the future.

Can Selective Downzoning Reduce Traffic Congestion?

As mentioned earlier, Proposition U halved the allowable density of commercial development on most of the land zoned for offices and stores located along the major boulevards of the City of Los Angeles. This reflects a consensus that growth in traffic on those boulevards and on the nearby freeways must be curtailed, and it also reflects the obvious truth that higher densities of commercial activities on a site generate more trips than do lower densities. But, if the demand for commercial activities in the region remains strong, much of that growth may be redirected by the policy toward the regional centers which were exempt from downzoning, and into the outlying suburban centers beyond the jurisdiction of the program. The result of this redirection of commercial growth may be a lengthening of work trips and shopping trips to the designated centers and outlying suburbs. Thus, communities which have experienced commercial downzoning in order to reduce the number of trips destined for them, may well experience increases in through trips which will be in the future destined to the areas which are allowed to develop. Regrettably, the downzoning may deprive the city of tax revenues which might be used to relieve traffic congestion through construction programs, while not relieving it of the traffic which the downzoning was intended to prevent.

Traditional transportation demand modeling can be used to investigate whether or not the redistribution of commercial activity resulting from the zoning changes will lead to increases, decreases, or no change in traffic given a total level of regional commercial development. Such analytical studies were not performed, however, and the public voted for the proposition on the basis of assertions that it would lead to reduced traffic. The passage of time may well prove those assertions false, and it would still be useful to conduct analytical studies of the traffic impacts of the rezoning in order to anticipate the program's consequences and to base future policy choices on more realistic assessments of the likely land use consequences of Proposition U. It would also be important to monitor changes in land use and traffic which occur during the coming years to gauge the impacts of Proposition U.

Can the Effects of a Single Development on Traffic Be Predicted?

The specific transportation plans which are prepared under the TRIP program require the owners of new commercial developments to reduce the trip generation of their facilities by at least

fifteen percent of what it would be in the absence of such mitigation requirements. This requirement is dependent upon the ability of traffic engineers or transportation planners to estimate in advance of construction how many trips a project will generate, and to estimate with some precision how much of a reduction in this quantity can be achieved by the mitigation program. The developer must pay a fee of many thousands of dollars per daily peak hour trip in advance of the construction of the project despite our inability to estimate these quantities with any precision.

Transportation planning methods, including trip generation analysis, were developed primarily for application to aggregate regional transportation planning. They are most effective when applied to regional policy questions, and least accurate when estimates are made for individual intersections, street segments, or buildings. Our ability to predict the trip generation of an office building or shopping center in advance of construction is so coarse that errors in estimation may nearly always exceed the magnitude of the result which the program is intended to bring about. Traffic engineers prepare deterministic estimates of flows which are inherently variable, and often omit information about confidence bands or variances. They do this because it would be much more expensive to prepare estimates based on continuous sampling over several days, weeks, or months. Single point estimates rather than ranges are often preferred by local governments as well as traffic engineers, since they are easy to comprehend. Yet, more intense sampling may well be needed in order to estimate the actual traffic consequences of a particular new development. If so, it seems grossly unfair to tax developers or to penalize them on the basis of anticipated trip generation rates or trip reductions which planners know to be based on inadequate estimates of actual traffic conditions.

The basic source of information on trip generation rates is the manual entitled Trip Generation Rates, published by the Institute of Transportation Engineers. In this manual, trip generation rates are presented for projects of varying size and location. The manual presents one-day traffic counts for office buildings, shopping centers, and residential complexes, without identifying the particular projects which are the sources of the data. The sample is not random, the data are from all parts of the United States, and they are based on traffic counts which are usually taken on a single day at a particular project. It seems reasonable to expect trip generation rates at a particular shopping center or office building to vary with the weather or the season, and to fluctuate randomly from day to day. A variation of some fifteen to twenty-five percent from day to day seems a reasonable expectation, and in many cases the variation can be even greater. Yet, the trip generation rates for particular facilities are presented in the manual without any estimate of day-to-day variances, in part because the counts are usually taken on a single day in order to minimize costs. The data

which are highly variable are treated as though they are invariant with region, season, weather, or anything else.

For example, in the Coastal Corridor Transportation Ordinance, which applies to a congested area surrounding the Los Angeles International Airport, trip generation rates taken from the ITE manual are included directly in the ordinance, as though the numbers in the manual are invariant parameters of all locations. The ordinance specifies that for commercial office buildings of 100,000 or more square feet, the trip generation rate is 2.0 trips per one thousand square feet. I selected a particular street segment in the affected area on which no new buildings had been constructed during the preceding five years, and reviewed the traffic counted on that street segment in five successive years by the Los Angeles City Traffic Department. The traffic counts had all been conducted during the month of July, so they do not vary because of possible seasonal differences in the dates of data collection. Table 1 demonstrates that the afternoon peak hour traffic volume varied substantially from year to year at the possible location of a new office building. In one year, afternoon peak traffic increased by fourteen percent over the previous year; in another year it decreased by seven percent. If a developer were to consider building a new office building of 100,000 square feet at this location, he or she would be required by the ordinance to estimate the trip generation of the project to be 2.0 x 100 or 200 afternoon peak-hour trips. The effect of the project, in other words, would be of the same order of magnitude as the annual random fluctuations in traffic. If the building were to be built, and the traffic counted again, it would be impossible to separate the effect of the building from the random annual fluctuations in traffic volume on the street segment. In this circumstance it is extremely difficult to estimate whether or not the required controls can have any significant effect on traffic in the vicinity of the building.

The ordinance requires that the afternoon peak-hour trip generation of shopping centers having more than 300,000 square feet be calculated using a rate of 4.9 trips per thousand square feet, and that the developer reduce the total trips by at least 15% of the number so calculated, while paying a fee of $2,010 per unmitigated afternoon peak-hour trip.

Several traffic engineers provided me with actual afternoon peak-hour trip generation figures based on one-day counts for shopping centers in Los Angeles having more than 300,000 square feet and the trip generation rates of those centers are listed in Table 2. Actual measured trip generation rates at the four centers were all substantially below the rates included in the ordinance. They varied from a low of 46% to a high of 71% of the rates which the ordinance requires planners to use in order to calculate the trips which would be generated by a future project. The value found in the

Year	PM Peak Hourly Traffic Since Previous Year	Increase (Decrease) Change	% Annual
1982	2,371		
1983	2,708	337	+ 14%
1984	2,522	(186)	- 7%
1985	2,787	265	+ 11%
1986	2,741	(46)	- 2%

TABLE 1. Annual Changes in Afternoon Peak-hour Traffic for an Illustrative Street Segment

Size of Shopping Center, Square Feet	Afternoon Peak Hour Trip Generation Rate, per thousand square feet
565,000	3.4
688,000	2.6
880,000	2.2
892,000	2.2
Rate Specified by ordinance for all centers >300,000 square feet	4.9

TABLE 2. Afternoon Peak Hour Trip Generation Rates of four Southern California Shopping Centers compared with Rate Specified in Ordinance.

ordinance was based upon a national sample (The ITE Manual), not necessarily accurate for Southern California. This may explain the divergence, but there are additional explanations possible. Perhaps the counts done at the four centers were all made during the season in which business is slowest and at other times of year the rate of trip generation specified in the ordinance might actually apply. Perhaps trip generation rates for centers larger than 600,000 square feet are lower than those for 300,000 square feet, and the framers or the ordinance did not anticipate any larger shopping centers in the impact area. In any case, the ordinance requires developers to take action to reduce the trip generation rate by 15% of the specified rate of 4.9 trips per thousand square feet, while the unexplained differences among the four actual centers are clearly larger than the required mitigation. The developers could reasonably argue that they should not be charged on the basis of 4.9 trips per thousand square feet when rates prevailing at similar centers in Los Angeles are all substantially lower. Others might argue that it is reasonable to require of them mitigation measures much less demanding than required by the ordinance, in recognition of the lower prevailing trip generation rates than those specified in the ordinance. When a new shopping center is actually built in the impact area, it will be impossible to know whether the mitigation measures were successful or whether the trip generation rates turned out to be lower than those specified in the ordinance because the ordinance used unrealistically high rates. If the latter, the fees levied against certain developers would be patently unfair.

Consider also the fact that the developer of a new shopping center in this zone must pay a fee of $2,010 per projected trip, based upon the specified afternoon peak hour rate. For a million square-foot shopping center, this fee amounts to $8,200,000 which must be paid to the city before construction begins. If, however, the actual trip generation rate of the project were to be equivalent to the lowest rate measured among the four projects reported on earlier, the fee based upon that rate would amount to $3,775,790. In effect, a developer may be taxed nearly five million dollars more using the trip generation rates which appear in the ordinance, than using trip generation rates which actually prevail at similar projects in the same city. Planners have no reason to believe that the trip generation rates in the ordinance are any more accurate than those which were measured at the existing project, and no reason to believe that a new million-square-foot shopping center will actually produce trips at either of these rates. The actual trip generation rate cannot be measured until the center is in operation, usually several years after the payment of the development fee. Because the arbitrary use of a particular set of figures in the ordinance is no more defensible than another set, there is likely to be litigation by a developer who would prefer to pay a lesser rather than a larger

fee. And, because the technical intelligence upon which the fee is based is by any reasonable standard inadequate to substantiate the fairness of the charges, it seems at least possible that the ordinance may be overturned in the courts.

Will Regulation XV Have Any Impacts?

Under regulation XV, each employer of 1,000 or more employees is obligated to offer employees alternatives to single-occupant automobile commuting. It is difficult, within the first few months of the existence of the program, to estimate whether or not the program will evoke serious participation by the affected employers, or merely pro forma responses. Thus far, casual discussions with affected employers and their consultants would indicate that most companies want to comply with the least amount of corporate effort and without deep commitments to achieving the goals of the program. Passive measures, such as registering employees for rideshare matching, are being undertaken, while active measures, like eliminating free or very low cost parking for employees, are not being pursued. It remains to be seen whether passive compliance will have any affect on regional commuting patterns, nor whether the Air Quality Management District will vigorously enforce the regulation should it be shown that average vehicle ridership is barely changed by the existence of the program.

CONCLUSION

Throughout the United States, and especially in Southern California, the current political climate has led to an increasing number of proposals to limit the growth of traffic congestion by controlling land use, placing special traffic-related conditions on real estate development, and requiring employers to undertake programs which will influence the commuting choices of their employees. The ordinances by which such programs are instituted are extremely complex, and they are often hastily enacted in a climate of crisis by political rivals who outdo one another to demonstrate that they are solving the problems of increasing traffic congestion.

Do these programs make good sense as transportation plans? Will they bring about reductions in traffic congestion? Will they merely result in the relocation of traffic growth to other parts of the metropolis? Might they in some instances actually worsen traffic congestion? Cynics have alleged that the real purpose of these programs is to increase revenue flows into public coffers for street, highway, and transit programs which have recently experienced fiscal shortages. Others have said that these programs give politicians the opportunity to tell the voters that they are

addressing the problems of regional growth without actually doing so in any serious way. By levying fees against developers and requiring employers to subsidize vanpools, programs recently enacted transfer to the private sector a fiscal burden for which major increases in taxes would be necessary if more traditional financing methods were employed. If the programs are really motivated by fiscal purposes alone, achievement of the promised congestion reductions may be less important to the framers of the programs than the collection of revenue. But, that would be shortsighted, because failures to relieve congestion will result in mistrust by the public of the officials who promised that relief, and will also result in traffic congestion which worsens the quality of urban life at an increasing rate.

While politicians assure their constituencies that these approaches will solve the transportation problem, planners and analysts would serve a useful public purpose by pointing out that the actual outcome is uncertain. Because of the increasingly central role of regulatory programs and land use controls in transportation planning, we must devote more energy and resources to monitoring and evaluation, and to the development of new analytical tools which will permit a more honest and thorough evaluation of alternatives than has yet been undertaken. More project-level case studies are needed of the effects of trip generation by new buildings on local and regional traffic conditions. The relationships thus far incorporated into rules and regulations regarding traffic and land use have been developed for aggregate regional transportation planning models but applied rather uncritically to specific projects. We are as yet unaware of the results which such programs will achieve, and are not even sure that our current monitoring and evaluation techniques are sufficiently sophisticated that they can measure the outcome of these programs. This is surely an area in which research lags far behind current practice, and in which a major research initiative is warranted.

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