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The University of California
Transportation Center

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Preliminary Evaluation of the Coastal Transportation Corridor Ordinance in Los Angeles

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ABSTRACT

The Coastal Transportation Corridor Ordinance attempts to regulate traffic congestion in a busy Los Angeles community by requiring new real estate developments to mitigate their trips and to contribute to a trust fund to be used to improve traffic flow within the affected area. In order to conduct a preliminary evaluation of the trip reduction portion of the ordinance, a sample of eight buildings housing 117 firms was selected. Three buildings housing 44 firms were subject to the ordinance, and a control group of five buildings housing 73 firms were not affected by the ordinance. Differences in ridesharing facilities, services, and subsidies were observed, and 1,216 workers in the two groups of buildings were surveyed to determine their travel patterns.

The results show that developers affected by the ordinance are significantly more likely to include preferential parking for carpoolers in their projects, and to include some bicycle parking facilities as well. The buildings affected by the ordinance offer a substantially smaller proportion of their employees free parking at work and, among those who pay to park, those in the buildings covered by the ordinance pay higher rates. The provision of these facilities, and the combination of parking fees and other promotional efforts, have had a very small initial effect on workers' decisions to drive to work alone. The proportion of workers driving to work alone is similar in the experimental and control groups. Though twice as many workers in buildings affected by the ordinance reported carpooling to work, they were a small fraction of the workforce. A sizable proportion of workers in the study area generally depart from work outside the peak period, probably in order to avoid late afternoon congestion.

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 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 (1).

In Los Angeles there have been several regulatory programs, ballot initiatives, and municipal ordinances directed toward limiting traffic by controlling land use and real estate development. They have all been enacted so recently that relatively few evaluative studies have yet taken place. It is important to track progress under these programs and to learn from them, so that new programs and amendments to older ones are informed by past successes and mistakes. This paper is a preliminary evaluation of one of the recent Los Angeles programs.

THE 'TRIP' PROGRAM AND THE COASTAL TRANSPORTATION CORRIDOR ORDINANCE

The Los Angeles City Council in 1983 approved the citywide Traffic Reduction Improvement (TRIP) Program. This is 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 many characteristics in common.

The first such plan to be enacted by the city was the Los Angeles Coastal Transportation Corridor Specific Plan Ordinance, which was passed in 1985 (2). It covers an area of approximately 24 square miles, shown in Figure 1, bounded by Los Angeles International Airport on the south, the San Diego Freeway (Interstate 405) on the east, the border of the City of Santa Monica on the north, and the Pacific Ocean on the west. The area presently has 40 million square feet of office, light industrial, and hotel space. Planned developments for the area may double this amount of development within the coming five to ten years. The present workforce of the area is over 100,000, and this too may double if current plans by developers are implemented.

The ordinance resulted from great pressure from a variety of homeowner and community groups and citizens active in opposing new development. The development community and the local city council representative responded, and the ordinance resulted from many months of negotiation among these interests. In the end, as is often the case, homeowner groups labeled the ordinance too lenient on developers and opposed its implementation, while some developers complained that the ordinance was too restrictive.

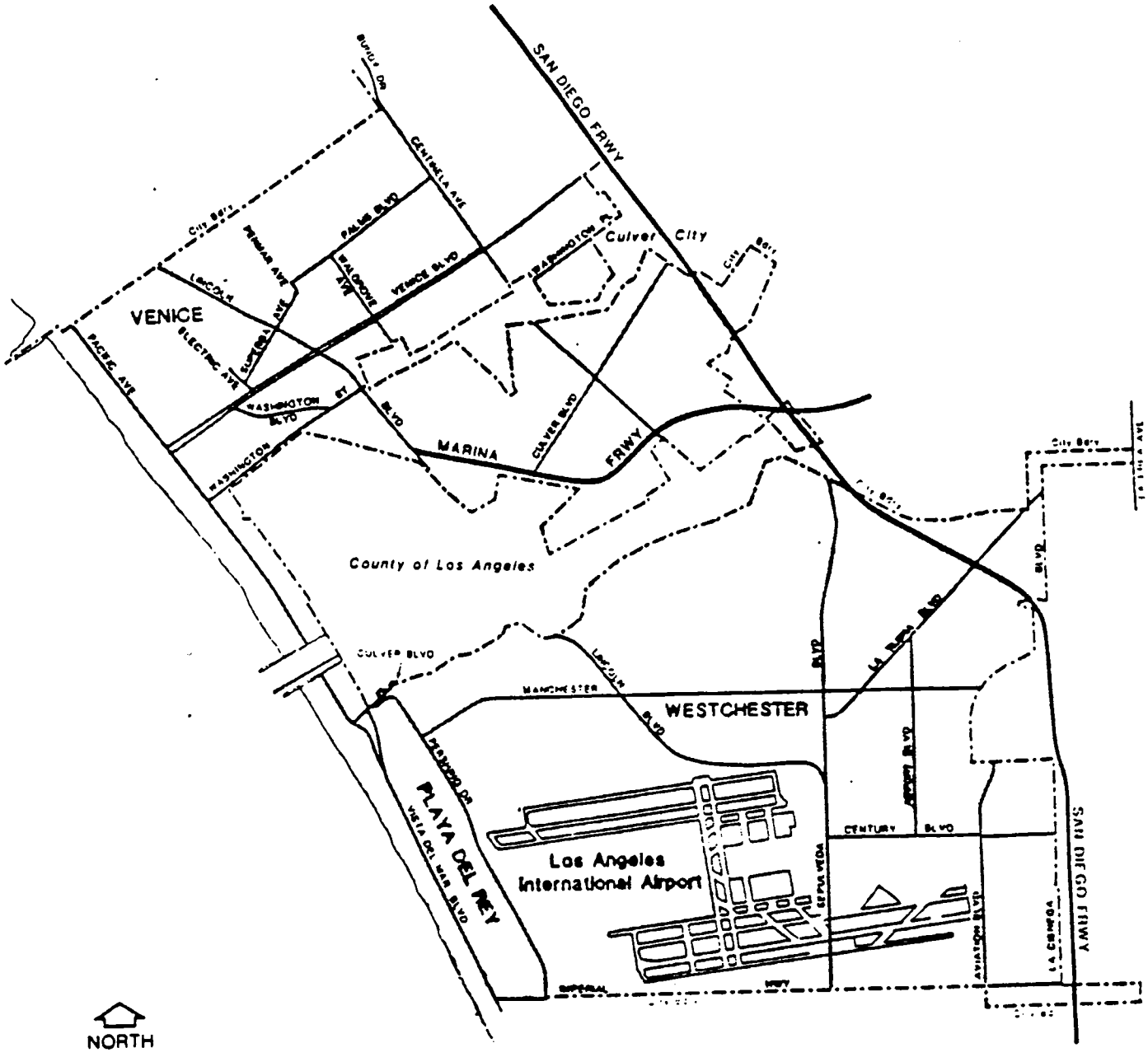

FIGURE 1. Map of the Coastal Transportation Corridor

The concerns giving rise to the ordinance were reflections of a great deal of empirical information which showed that the area had severe traffic congestion which was promising to worsen as development continued. The busiest intersection in the city of Los Angeles is located at Century Boulevard and Aviation Avenue, within the study area. This intersection carried a traffic volume of 120,267 vehicles per day in 1985. The seventh busiest intersection in the city, Sepulveda Boulevard and Imperial Highway, having a daily volume of 102,770 in 1985 is also in the area affected by the ordinance. The San Diego Freeway, which forms the eastern boundary of the area, is the second most heavily travelled freeway in Los Angeles, carrying daily volumes of around 250,000 (3). At the time the ordinance was enacted, the growth trend in traffic was particularly alarming. Between 1973 and 1980, for example, daily trips on Lincoln Boulevard had risen by 200 percent, traffic on Sepulveda Boulevard had increased by 240 percent, and volume on the San Diego Freeway had grown by 210 percent (4).

MAJOR ELEMENTS OF THE COASTAL TRANSPORTATION CORRIDOR ORDINANCE

The Coastal Transportation Corridor ordinance requires that any new non-residential development which would generate more than 100 trips in the afternoon peak hour, institute measures which will reduce trip generation by at least 15%. The mitigation measures, which might include ridesharing programs, flexible work schedules, transit pass subsidies, provision of bicycle facilities, and other measures, are the responsibility of the real estate developer, who then passes them along to the tenants through rental agreements.

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, which was initially set at $2,010 per p.m. peak trip, is deposited in a trust fund which is specific to the impact area, and may be used by the city for the construction of projects included in the impact area's transportation specific plan. Projects which are part of the plan include 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.

A developer can propose a demand management program to reduce generated trips by more than the required 15%, and application can in such cases be made for a proportionate 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 eventually 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.

Developers may also receive in lieu credit, a reduction in the impact fee assessment for any improvements which they make in the regional or subregional transportation system, with approval of the Department of City Planning and the Department of Transportation of the City of Los Angeles. The ordinance also provides that large development 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.

Finally, it should be noted that the ordinance at the present time only applies to new development, and no fees or trip reduction requirements apply to existing development in the area. Furthermore, the ordinance exempts residential construction, government facilities, and neighborhood-serving commercial projects such as gasoline stations and car-wash facilities, as well as religious facilities, schools, and grocery stores.

Because it is a government facility, Los Angeles International Airport is exempted from the requirements of the ordinance despite the fact that it is located in the affected area. The airport occupies over 3,500 acres and with a total workforce in 1986 of some 35,000 employees, it is the largest single employer in the study area and by far the largest trip generator. Many critics of the ordinance believe that the exemption of the airport renders the ordinance ineffectual.

Critics of the ordinance also argue that the trip generation rates published as part of the ordinance are derived from tables published by the Institute of Transportation Engineers. The rates are based on one-day counts of facilities located throughout the United States, and the sample of buildings giving rise to the tables is not necessarily a random one, nor specifically comparable to buildings located in Southern California. The rates used in the ordinance, do not take into consideration regional variations in trip generation, seasonal variations, nor variations which might result from differences in climate or weather.

Another problem with the ordinance is its limited provisions for monitoring and enforcement. The only formal mechanism for monitoring the efforts of the developers to

implement their trip reduction programs are annual reports submitted to the City of Los Angeles by the developers themselves.

METHOD OF EVALUATING THE COASTAL TRANSPORTATION CORRIDOR PROGRAM

In the remainder of this paper we examine what developers have actually done as a result of the imperatives of the ordinance, in comparison with a control group of similar developments nearby which are not affected by the ordinance. We also compare travel behavior of workers employed in buildings affected by the ordinance with travel behavior of workers in the control buildings. The intent, of course, is to determine whether or not the programs provided by developers are affected by the ordinance, and whether the ordinance is having any measurable impact on employee travel choices.

Information about the programs offered by developers was gathered in direct personal interviews with the developers during 1988 and 1989. Information on travel patterns of employees working in various buildings was obtained by questionnaires distributed to employees during the summer and fall of 1988, with the cooperation of their employers and building managers. The sample, whose characteristics are summarized in Table 1, included three buildings which were subject to the ordinance and which together included 44 separate firms. From among the employees of those firms, some 620 employees completed questionnaires regarding personal characteristics and travel choices. There was also a control group of five buildings containing 73 firms, from which we obtained travel data and personal information about 596 employees.

In most of these instances, data on the employees was obtained directly through the completion of questionnaires for this study. In one case, an employer informed us that it had recently completed a survey of its own, and it provided us with the survey results. Since the survey administered by the employer did not include a few of the questions which were part of our survey, the numbers of respondents differ somewhat from one question to another. The response rate varied from one firm to another, but the range of responses was between 25 percent and 38 percent of the employees of the eight buildings.

TABLE 1

Study Firms

Building #	Respondents	# of Firms	Average # of Respondents per Firm
		A. Experimental Group	
1	121	40	3
2	266	1	266
3	233	3	78
Total:	**620**	**44**	
		B. Control Group	
4	160	30	5
5	89	20	4
6	117	21	6
7	131	1	131
8	99	1	99
Total:	**596**	**73**	
Overall Total:	1216	117	

Chi-square tests were done on all the findings to determine whether the differences observed between the experimental and control groups were statistically significant at the .05 level.

PROVISION OF FACILITIES, SERVICES, AND SUBSIDIES BY DEVELOPERS AND EMPLOYERS

Table 2 shows the facilities provided by the developers of the eight buildings in the sample. Reserved parking for ridesharers was provided in two of the three experimental buildings, while only one of the five control buildings offered reserved parking for ridesharers. Similarly, developers of two of the three buildings affected by the ordinance had elected to include bicycle racks, while none of the five control buildings provided racks. Interestingly, none of the eight buildings was found to include showers or lockers for bicycle commuters, indicating that developers regarded those facilities as unlikely to attract sufficient use to warrant their inclusion. Subsidized parking at worksites is very common in the study area. It was of interest to determine whether employers located in buildings affected by the ordinance were providing subsidized parking for employees as frequently as employers in the control group. The results of this inquiry are shown in Table 3, which clearly shows a substantial difference. While 77 percent of employees in the buildings not affected by the ordinance received free parking at work, only 62 percent of the employees in the affected buildings had their parking fully subsidized. This difference is significant, although it is important to note that a majority of employees were parking free even in buildings covered by the ordinance.

Table 3 also shows that among those paying to park at work, workers in buildings affected by the ordinance typically pay much more. While 70 per cent of employees paying to park in the control buildings were paying less than twenty dollars per month, only eleven percent of employees in the experimental buildings paid that little, while three fourths of them paid between twenty and thirty-nine dollars per month. Perhaps Table 3 indicates a shift toward employee-paid parking at worksites affected by traffic control ordinances such as the Coastal Corridor program.

TABLE 2

Facilities Provided

		Reserved Parking for Ridesharers	Bicycle Racks	Lockers	Showers
Experimental					
Bldg.	#1	No	No	No	No
	2	Yes	Yes	No	No
	3	Yes	Yes	No	No
Control					
Bldg.	#4	No	No	No	No
	5	No	No	No	No
	6	No	No	No	No
	7	Yes	No	No	No
	8	No	No	No	No

TABLE 3

Parking Subsidy at Experimental and Control Buildings

Do Employees Pay to Park at Work?
(percentages)

	Experimental n=324	Control n=538
Yes	38.0 %	23.2%
No	62.0 %	76.8 %

Amounts paid by those who pay to park (percentages)

	Experimental n=123	Control n=125
Less than $20	10.6 %	70.4 %
Between $20-$39	75.6 %	8.8 %
More than $40.	13.9 %	20.8 %

EMPLOYEE TRAVEL PATTERNS

The Coastal Transportation Corridor Ordinance has two purposes. First, it aims to reduce auto traffic by encouraging ridesharing, including transit use, vanpooling, carpooling, bicycling, and walking to work in buildings which come under the ordinance. Secondly, it seeks to upgrade traffic arteries in the impact area by collecting fees from developers which are to be used for the improvement of facilities in the corridor. This study addresses only the first of these questions. By comparing the experimental population with the control group, we may estimate whether there are substantial differences between them in their travel patterns.

Before comparing travel patterns of the two groups, it is important to describe their demographic characteristics in general terms. The samples in the experimental and control buildings did not differ significantly from one another in terms of their major demographic characteristics. Taking together the workers in the experimental and control buildings, some 70.2 percent were in administrative and clerical positions, 20.4 percent in professional jobs, and 4.3 percent in janitorial and catering services. Nearly seventy percent of the respondents were under forty years of age, and 23 percent were between the ages of 40 and 59. The age distribution is judged to be typical of the Los Angeles commuter work force, since it is similar to the distribution of respondents to the 1988 commuter survey performed by Commuter Computer (5). Approximately 59 percent of our respondents were females, and this is a substantially higher proportion of females than was found in the regional commuter survey, in which only 47 percent were women. Over half of our respondents earned between $20,000 and $49,999, while only about 10 percent earned less than $20,000 per year. Approximately 97 percent indicated that they were employed full-time, which was defined as five days per week and eight hours per day.

Because the ability to rideshare is dependent upon the need for a car at work, respondents were asked whether they regularly needed a car at work. While 68 percent said that they do need their cars as part of their work, 32 percent of these answered that they used their cars only for personal business while at work, and only 25 percent said that they use their cars at work virtually every day of the week. By contrast, some 14 percent said they typically use their cars at work only one day per week, and 15 percent said two days per week was typical.

Table 4 shows that the one-way distance between home and work is distributed similarly for workers in the buildings covered by the ordinance and for those in the control group. In both instances, just under two-thirds of the employees travel less than fifteen miles between home and work, while about one-third travel more than fifteen miles to work. Because the work trip lengths and demographic characteristics are similar for the two groups, it was assumed that any differences that were observed in travel patterns could be attributed to the program itself.

Table 5 shows the mode choice for the journey to work of the experimental population, affected by the ordinance, in comparison with the control population consisting of workers in the study area not affected by the ordinance. It shows that there is very little difference between the two samples in terms of the proportion of workers who drive to work alone. In the buildings affected by the ordinance, more than twice the proportion of employees carpool to work, but these seem to have a very small impact upon the proportion driving to work alone. Only 13.2% of the experimental group employees did not drive alone versus 12.1% of the control group employees. The ordinance has not appeared to make any substantial difference in the proportion of workers driving to work alone.

Table 6 shows how those affected and those not affected by the ordinance differed in terms of their arrival and departure times at their worksites. Firstly, the table shows that most workers in the study area, including those subject to and those not subject to the ordinance, arrive at work during the peak period. Only 11.8% of experimental group employees and 12.3% of control group employees arrive at work outside of peak hours, i.e. before 7:00 a.m. and after 10:00 a.m. Secondly, relatively larger proportions of experimental group employees (19.6%) and control group employees (19.2%) depart from work outside of peak hours, i.e. before 4:00 p.m. and after 6:30 p.m.

Also of interest was how much information about alternative travel modes was received by employees through their employers. This was of interest because implementation of the ridesharing requirements is dependent upon employee awareness of alternatives to driving alone.

TABLE 4

Home-To-Work
Distance Travelled by Employees (One Way)
(percentages)

	Experimental n=620	**Control n=596**
1 - 5 miles	23.1	24.8
6 - 15 miles	42.4	38.6
16 - 30 miles	17.1	18.3
31 miles & over	15.9	15.7
Non-response	1.6	2.7

TABLE 5

Mode Split
(percentages)

	Experimental n=615	**Control n=596**
Drive alone	86.8	87.9
Public Bus	2.0	2.3
Carpool	7.4	3.5
Drop Off	2.9	3.5
Park & Pool	0.7	0.2
Motorcycle	0.2	1.3
Others	0.2	1.2

TABLE 6

Times of Arrival at and Departure from Work

Time of Arrival at Work
(percentages)

	Experimental n=620	**Control n=596**
Before 6:30 a.m.	5.0	4.4
Bet. 6:30 - 6:59 a.m.	6.0	6.2
Bet. 7:00 - 7:29 a.m.	11.6	9.6
Bet. 7:30 - 7:59 a.m.	21.0	13.3
Bet. 8:00 - 8:29 a.m.	25.5	21.1
Bet. 8:30 - 8:59 a.m.	23.4	31.5
Bet. 9:00 - 10:00 a.m.	6.0	8.4
After 10:00 a.m.	0.8	1.7
Not Regular	0.8	3.5

Time of Departure from Work
(percentages)

	Experimental n=619	**Control n=596**
Before 4:00 p.m.	8.6	10.1
Bet. 4:00 - 4:29 p.m.	7.4	7.7
Bet. 4:30 - 4:59 p.m.	14.1	12.6
Bet. 5:00 - 5:29 p.m.	28.1	20.0
Bet. 5:30 - 5:59 p.m.	12.8	13.8
Bet. 6:00 - 6:29 p.m.	16.8	24.7
After 6:30 p.m.	11.0	9.1
Non-Respond	1.3	2.2

TABLE 7

Sources of Information about Present Commute Mode
(percentages)

	Experimental n=386	**Control n=596**
Through Employer	2.3	0.7
Fellow Employee	6.7	2.0
Freeway Messages/Adverts	1.0	0.3
Fliers	0.5	0.5
Transportation Coordinators	0	0
Other	5.7	6.7
(Drive Alone)	83.7	89.6

The results of this investigation are shown in Table 7. It shows that among those ridesharing to work, the majority of employees of companies in the control group had learned about their current option from a fellow employee. While those in the experimental companies were three times as likely as those in the control group to learn about their options from their employers, those who did hear about ridesharing from their employers constituted less than three percent of the sample. In both samples, not a single ridesharer reported having learned about opportunities for ridesharing from a ridesharing coordinator.

CONCLUSION

The results of this study must be understood to be preliminary. They are based on a small sample of buildings, and the study was undertaken early in the history of implementing the Coastal Transportation Corridor Ordinance. The results thus far show that developers affected by the ordinance are significantly more likely to include preferential parking for carpoolers in their projects, and to include some bicycle parking facilities as well. The buildings affected by the ordinance offer a substantially smaller proportion of their employees free parking at work, and among those who pay to park those in the buildings covered by the ordinance pay higher rates. The provision of these facilities, and the combination of parking fees and other promotional efforts seems to have had a very small initial effect upon workers' decisions to drive to work alone. The proportion of workers driving to work alone is similar in the experimental and control groups; though twice as many workers in buildings affected by the ordinance reported carpooling to work, they were a small fraction of the workforce. Although most workers in the study area arrive at and depart from work during the peak periods, an increasing number of workers in the study area seem to depart from work outside of peak hours, perhaps in efforts to avoid the late afternoon congestion.

In sum, there are promising differences in behavior of real estate developers and employers affected by the ordinance, but the differences are small. There are as yet no substantial changes in travel behavior attributable to the ordinance, except for a tendency toward slightly higher rates of carpooling among workers at firms affected by the ordinance.

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