

Model Parking Code Provisions to Encourage Ridesharing and Transit Use (including A Review of Experience)



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| 16. Abstract Most local zoning ordinances contain a set of off-street parking requirements, which are intended to control that part of the parking supply created in the process of private land development. The parking requirements, or parking code, are potentially a valuable tool in enabling the public sector to influence private sector decisions in the area of Transportation System Management (TSM), with benefits potentially accruing to both public and private interests. The purpose of this report is to document the experience of jurisdictions around the country in using the parking requirements in the local zoning ordinance to encourage TSM activity, especially ridesharing and transit incentives, and to indicate the implications of that experience to other jurisdictions. The report covers not only the opportunities afforded by using the parking code in this manner, but also potential problems and pitfalls. The following chapters are presented: a brief historical review of TSM-parking provisions in local zoning ordinances; elements of TSM related parking provisions; case studies, and Model Parking Code Provisions to Encourage Ridesharing and Transit Use. | | | |
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I. INTRODUCTION

REPORT OVERVIEW

Over the last decade, much emphasis has been placed, in the transportation field, on making more efficient use of existing transportation resources. This process has come to be known as transportation system management (TSM). Concerns have also been raised regarding management of urban land resources as developable land in most urban environments has disappeared rapidly.

In the past, much of the TSM activity has focused on public initiatives as opposed to private. Typical publicly sponsored TSM actions include traffic signal timing optimization, minor widening of bottleneck sections of highway, preferential treatments for high occupancy vehicles (HOV's), improvement of public transit services, and many others. It has been recognized more recently that the private sector can also have an important role to play in instituting TSM actions. Employers and land developers are particularly instrumental groups as they are in a position to influence employee choice of travel mode either directly through various incentives or indirectly through the design of building and parking facilities. Employers are also the key channel through which information is received by the employees.

One of the critical links between public objectives (such as TSM) and private sector actions is the local zoning ordinance. Most local zoning ordinances contain a set of off-street parking requirements, which are intended to control that part of the parking supply created in the process of private land development. More than that, the parking requirements, or parking code, are potentially a valuable tool in enabling the public sector to influence private sector decisions in the area of TSM, with benefits potentially accruing to both public and private interests. Recent TSM actions taken by the private sector in several urban areas around the United States point to the private sector's increasing awareness that transportation is not a problem to be solved solely by public agencies. There is an opportunity here to develop a greater public/private partnership to solve transportation problems that are of mutual concern to both parties. Public agencies must seize this opportunity to make their local planning instruments, such as the zoning ordinance, both a complement to public and private sector TSM actions as well as a device to create additional incentives.

The potential applicability of a parking code with incentives for instituting TSM techniques such as ridesharing and transit is, at least conceptually, extensive. The notion that parking supply can be reduced when TSM actions reduce parking demand is well accepted. A number of cities and counties in the U.S. have used this relationship to establish incentives for developers, landowners and employers to institute ridesharing programs or promote transit use in exchange for reductions in the number of parking spaces provided. Locations where this has been done, such as Seattle; Schaumburg, Illinois; Dallas; and Placer County, California all share a land use environment where traffic congestion, pollution, and development growth all threaten the balance of existing public services. Other areas undergoing business declines, have shown little interest in such actions.

The purpose of this report is to document the experience of jurisdictions around the country in using the provisions in the local parking code to encourage TSM activity, especially ridesharing and transit incentives, and to indicate the implications of that experience to other jurisdictions. The report covers not only the opportunities afforded by using the parking code in this manner, but also the problems and pitfalls that can come into play. This discussion is limited to those areas in which the parking code can influence TSM activity and does not include other tactics such as management of on-street parking supply, residential parking permit programs, or on-street parking enforcement.

Although most local parking codes regulate the parking supply for a wide range of land uses, ranging from hotels to bowling alleys, emphasis in this report is placed on land uses most directly related to the work trip, namely office and industrial uses. Although other land uses are not totally excluded, emphasis is placed on employment related uses since the work trip has been the focus of the majority of TSM actions to date. In addition, the work trip is largely responsible for the peak period capacity constraints in our transportation system, and thus encouraging more efficient modes of travel for the work trip has a direct impact on the need for transportation facilities.

STUDY APPROACH

As this report is essentially a state-of-the-art review, it has involved primarily the compilation of experience with techniques related to the subject area. Experience was reviewed for two areas:

- 1) the general application of TSM actions such as ridesharing and transit incentives (a complete list is provided at the end of this chapter); and
- 2) the specific application of such actions to local parking codes.

The general application of TSM actions is of interest in that their effectiveness (e.g. the extent to which they induce mode shifts) has a bearing on how they are used in local parking codes. Therefore, brief reviews of general experience with such actions are presented.

The primary concern, however, is how such actions are integrated as incentives into local parking codes. A number of jurisdictions in the United States have been pioneers in this area, and their experience has been assembled through case studies developed from discussions with local planners, review of local reports, and use of other sources of literature. The results are discussed in the following chapters:

- . Chapter II - A brief historical review of TSM-parking provisions in local zoning ordinances
- . Chapter III - Elements of TSM related parking provisions
- . Chapter IV - Case studies
- . Chapter V - Model Parking Code Provisions to Encourage Ridesharing and Transit Use.

The model parking code provisions contained in Chapter V were derived primarily as a synthesis of provisions from other jurisdictions. It incorporates the three primary approaches to TSM-related parking provisions used thus far. The introductory section of Chapter V describes more of the basis for the code.

THE ROLE OF LOCAL PARKING CODES

The use of parking requirements in local zoning ordinances became prevalent in the U.S. in the 1930's. As the ownership of automobiles increased, the need was seen for providing storage capacity for those vehicles off the public right-of-way. The haphazard parking of automobiles on city streets was seen as a nuisance to traffic movement, and the parking code proved to be an effective legal tool for ensuring that off-street parking capacity was provided.

Further increases in auto ownership in the 40's and 50's resulted in higher parking requirements for most land uses, a trend which stabilized in the 1960's. Up until that

time, the primary objectives of parking requirements were largely to enhance access, improve traffic circulation, and to help prevent neighborhood parking problems and other potential nuisances. But as the change in transportation perspectives accelerated with the 1973-74 oil embargo, so did the thinking of numerous jurisdictions around the country regarding parking policy. Whereas previously the desire was to accommodate the automobile at almost any cost, it was recognized that an abundance of parking, in itself, was working against the increasingly strained highway network. Maximum limitations on parking were introduced in certain locations in an effort to control traffic demand. At the same time, more emphasis was being placed on alternatives to single occupant commuting. Through these events, it has become apparent that the objectives of the parking requirements in the zoning ordinance can be expanded beyond those purposes for which they were originally designed. Specifically, it is now recognized that an important additional role of the local parking code is that of fostering more efficient modes of travel, primarily through provisions favoring ridesharing and public transit.

SCOPE OF TSM ACTIONS

There are four basic groups of TSM measures which are appropriate for consideration in parking requirements. These measures are:

- . ridesharing
- . public transit
- . parking management
- . other TSM actions

Table 1 lists the range of TSM techniques which might be considered under each category. These categories recognize that the standard approach to parking requirements has been the establishment of minimum requirements. Although the selection of appropriate minimum parking requirements is an important area of parking policy, this is not considered, in itself, to be a TSM measure. Adjustment in the minimums, however, may serve to complement one or more of the TSM strategies listed in Table 1.

Ridesharing is the generic term used to describe a range of alternatives to single occupant vehicle commuting, such as car or van pooling. It would also include other forms of prearranged ridership in larger vehicles, such as subscription bus services.

Table 1. TSM measures with potential for inclusion into the parking code.

- I. Ridesharing related
 - A. Participate in a locally sponsored ride-matching service
 - B. Conduct in-house rideshare matching
 - C. Provide preferential parking for HOV's
 - D. Reduced parking cost for HOV's
 - E. Operate vanpool or buspool service
 - F. Monitor employee travel modes
- II. Public transit related
 - A. Employer-subsidized transit passes
 - B. Parking reductions based on proximity to transit
 - C. Elimination of parking cost subsidies
 - D. Daytime shuttle services: implementation or expansion
 - E. Transit amenities
- III. Other parking management techniques
 - A. Maximum Parking Requirements
 - 1. Absolute maximum
 - 2. Maximum with F. A. R. (Floor Area Ratio) or financial penalties if exceeded
 - B. Fringe parking and shuttle service--allow a percentage of parking to be supplied at off-site location with transportation provided to the site
 - C. Shared use parking--share parking spaces with another use with non-overlapping peak parking demand
- IV. Other TSM actions
 - A. Commuter bicycle and pedestrian facilities: showers and lockers
 - B. Priority treatments through traffic operations
 - C. Employment or designation of an employee transportation coordinator (ETC)
 - D. Implementation of flex-time or other work schedule conducive to ridesharing and transit use

TSM actions related to public transit focus on ways that the private sector can encourage the use of existing public transit services. Examples would include provision of amenities, promotional efforts, fare subsidies or supplementary services (e.g., shuttle bus from rail stations). Each of these concepts and their effectiveness is discussed in Chapter III.

POTENTIAL BENEFITS OF TSM PARKING PROVISIONS

A simple example can be used to illustrate the potential benefits of TSM actions in association with reductions in the parking requirements. Table 2 presents a cost analysis of the benefits to a developer or employer and to employees when different levels of auto occupancy are achieved. The higher auto occupancies (average 2.0 to 2.5) are not often achieved, but have been attained in some cases with highly aggressive efforts and favorable conditions. For instance, at National Geographic in Rockville, Maryland, an excellent bus pool program helped increase average vehicle occupancies to 2.4. Auto occupancies at some Federal Government sites in Washington, D.C. are in excess of 3.0 (16).

Given the assumptions listed in Table 2, it can be seen that significant cost savings accrue to developers or employers in reduced parking construction and land cost. If the parking is constructed underground, there is no land cost savings, but the cost of parking construction is approximately doubled over that of a separate above-grade structure. Although some might argue that land should not be considered as a factor since it is not a depreciable item, it is a very significant element of development costs, which are eventually passed on the tenants. Land available for parking can also be a constraint on permissible building size.

These costs are more readily put into perspective if put into annualized terms. Maintenance costs for parking are typically estimated to be \$50-100 annually (surface parking being closer to the low value and structured to the higher). Annualized cost of parking construction and maintenance would be approximately \$100 for a surface parking space and \$400 for a structured parking space (this assumes approximately a 40 year service life). Annual savings to commuters in vehicle operating costs are actually greater than the annualized costs of parking construction and maintenance, significantly greater when compared with the lower costs of surface parking.

Table 2. Sample cost savings for increases in auto occupancy.

Assumptions:

Base auto occupancy = 1.15 (typical of a non-CBD site with no ridesharing program)

Assumed average trip length = 8 miles one way

Assume 200,000 square foot office building with 800 employees with minimum parking requirement of 600 spaces

Assume land cost = \$10 per square foot

Assume cost of parking construction per space = \$1,000 surface; \$5,000 structured; \$10,000 under ground (derived from ref. 30)

Assume vehicle operating costs = \$0.15 vehicle mile (approximate travel-related cost of vehicle operation, based on AASHTO's Manual on User Benefit Analysis.)

| Auto Occupancy Increased to | Parking Reduction | | \$ Construction Cost Savings | | \$ Land Cost Savings | | \$ Commute Cost Savings (Annual) | Annualized Constr. & Maint. Cost Savings ^{1/} | |
|-----------------------------|-------------------|--------|------------------------------|------------|----------------------|------------|----------------------------------|--------------------------------------------------------|------------|
| | % | Spaces | Surface | Structured | Surface | Structured | | Surface | Structured |
| 1.2 | 4 | 24 | \$ 24,000 | \$ 120,000 | \$ 79,000 | \$ 26,000 | \$ 12,500 | \$ 2,600 | \$ 9,600 |
| 1.3 | 12 | 72 | 72,000 | 360,000 | 238,000 | 79,000 | 34,700 | 7,900 | 28,800 |
| 1.4 | 18 | 108 | 108,000 | 540,000 | 356,000 | 119,000 | 54,000 | 11,900 | 43,200 |
| 1.6 | 28 | 168 | 168,000 | 840,000 | 554,000 | 185,000 | 85,000 | 18,500 | 67,200 |
| 1.8 | 36 | 216 | 216,000 | 1,080,000 | 713,000 | 238,000 | 109,000 | 23,800 | 86,400 |
| 2.0 | 42 | 252 | 252,000 | 1,260,000 | 832,000 | 277,000 | 128,000 | 27,700 | 100,800 |
| 2.5 | 54 | 324 | 324,000 | 1,620,000 | 1,090,000 | 356,000 | 162,000 | 35,700 | 129,600 |

^{1/} Based on analysis procedures in AASHTO's Manual on User Benefit Analysis.

The benefits in Table 2 are offset by the administrative costs of running programs to achieve the specified levels of auto occupancy, and these will vary from location to location. Overall, however, the benefit/cost ratios of such programs can be very high, provided the right setting and market conditions exist. Even small increases in auto occupancy can lead to significant cost savings, as Table 2 indicates.

Other peripheral benefits of achieving higher auto occupancies are often overlooked. Roadway capacity is a prime example. It could be estimated that the construction cost of a lane-mile of an urban arterial street can be attributed to approximately \$300 per mile (\$186 per kilometer) per peak hour vehicle (assuming \$500,000 per lane mile (\$310,000 per lane kilometer) construction cost).^{1/} A reduction in the peak period volume through TSM actions will eventually eliminate or reduce a public expenditure for additional highway capacity. Following this line of reasoning, a highway agency could save up to \$200 annually per peak hour vehicle eliminated where the TSM action forestalled the construction of additional traffic lanes. In other words, the increase in auto occupancy from 1.15 to 1.20, aside from saving \$2,600-9,600 in parking related costs and \$12,500 in commuting costs annually may also save the public agency \$3,000 annually through reduced need for higher roadway capacity. On the other hand, if additional capacity is not the issue, the TSM action will reduce vehicle delay, but deriving a per-vehicle benefit for delay reduction is more difficult. Energy and environmental benefits would naturally follow from the reduced vehicle travel.

One additional benefit of a lower parking supply is that of more efficient use of land. Building larger parking lots contributes to urban sprawl, moving activity centers further from one another, ultimately driving up the cost of land (because it is less available) and increasing travel distances. Although this effect cannot be quantified, it is certainly evident that striving for efficiency in the use of land is a desirable goal. This analysis has also indicated that both the public and private sectors stand to benefit significantly from a reduction in vehicle trip making brought about or reinforced by including TSM provisions in the local parking code.

^{1/} Assumes a capacity of 1,600 vehicles per lane per hour.

II. HISTORICAL OVERVIEW OF TSM RELATED PARKING PROVISIONS

This chapter presents a brief overview of current practices in TSM parking provisions. It is an introduction to the subject to provide the reader with an overall perspective prior to going into more detail in subsequent chapters. Sections covered in this chapter include:

- . Overview of experience to date
- . Evolving issues
- . Primary components of TSM provisions for local parking codes

OVERVIEW OF EXPERIENCE TO DATE

Figure 1 summarizes some of the developments to date in the creation of TSM provisions in parking codes in a number of jurisdictions across the country. The experience of several of the jurisdictions is briefly reviewed in this section with detailed case studies presented in Chapter IV.

Because of the significant variation in local land use law and the methods of encouraging TSM, it is difficult to establish distinct classifications of approaches for TSM parking provisions. Generally, however, these approaches seem to fall in three general approaches.

The first category is the TSM Incentive Option. This method requires the addition of a zoning ordinance provision whereby an applicant may reduce the minimum parking requirement by a certain percentage (up to a maximum) proportionate to the strength of a TSM incentive program to be provided. This method has been implemented in several jurisdictions such as Sacramento, California, Schaumburg, Illinois, and Bellevue, Washington.

Orlando, Florida has developed a variant of the incentive option approach. Orlando offers landowners the option of reducing parking supply by paying into a trust fund reserved for TSM type improvements within a development district.

The second technique establishes a Performance Standard in the zoning code for application generally or on a case-by-case basis. In this type, a parking accumulation standard that cannot be exceeded or an auto occupancy standard which must be achieved is established for a given development. Trip generation standards have also

| Jurisdiction | Type of Area | ETC* | Participating in Ride Matching Service | Provision of HOV* Parking Spaces | Flex-Time Work Hours | Parking Charges | Provision of HOV's | Transit Passes | HOV Cost Subsidy | Provision of Transit or RS Amenities | Contribution to Transportation/RS Fund | Company RS* Program | Other 4/ | Implementation | Enforcement | Reductions Permitted | Comments |
|--------------------|---------------------------------------------------|-------------------|----------------------------------------|----------------------------------|----------------------|-----------------|--------------------|----------------|------------------|--------------------------------------|----------------------------------------|---------------------|--------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Bellevue, WA. | CBD (12,000) 1/ | X | X | X | X | X | X | X | X | X | X | | | When landowner accepts reduction,takes responsibility | "Such covenants and quarantees as necessary." | Up to 50 percent | Very comprehensive ordinance. |
| Dallas, TX. | 2 Large mixed-use developments; 1 CBD, 1 Suburban | O | O | O | | O | | | | O | | | | Developer agreement to mitigate high trip generation rates | Approval conditioned upon self-enforcement and effective program. | None requested | This is a site specific reductions but principles are same. |
| Los Angeles, CA. | City of 3 Million | | O | O | | | | | | | | | O | When landowner accepts reduction,takes responsibility | Self-enforcement of agreed to performance standard. | Staff sets based on site transportation study | Has been proposed for 5 yrs. but no specifics have been implemented |
| Montgomery Co.,MD. | Several CBD's with low density, developing mix | | O | O | | O | | | | | O | O | | Optional developer or county responsibility | Land or parking space set-aside;payment to RS fund;revoke permit | 10 percent county program; 10 percent employer program; 20 percent maximum | Further review due before passage; long-term enforcement key issue. |
| Orlando, FLA. | City Population 132,000 | Potentially all 5 | | | | | | | | | | | Landowner pays trust fund cost per space reduced | Authority in planning and development dept.; control permit issuance | Maximum of 20 percent | Only TSM trust fund ordinance in U.S. | |
| Placer Co.,CA. | 20 Miles N.E. of Sacramento; Rural but developing | X | X | X | | X | | X | X | | | | X | Required of all new development with sufficient employment | Civil penalties Criminal:misdemeanor | No maximum;commensurate with trip generation reductions proven. | Community supports as necessary to control growth. |
| Sacramento, CA. | CBD (C-3) | O | | X ³ | O | O | O | X | O | | | | X | When landowner accepts reduction,takes responsibility | Landowner self-enforcement | -60 percent new or expanded office -100 percent office conversions | Just instituted both maximum and minimum in CBD,C-3 zone. |
| Schaumburg, IL. | Village ¹ (30,000) | X | X | X | X | O | X | X | X | X | X | X | X | When landowner accepts reduction,takes responsibility | Landowner records a covenant which must be present in all leases. Land set aside required | Maximum to 40 percent for buildings over 50,000 sq. | Implemented summer 1982; very comprehensive in scope. |
| Seattle, WA | CBD | X | X | X | | | O | X ² | | | O | | | Requires landowner to implement | City agency funded by transportation fee. | Currently parking maximums, 1 per 1500 sq. feet. | Required of 14 developments thus far. Primarily used for office or mixed use development. |

1/ Total employment
 2/ Development approval contingent upon provision of HOV parking spaces.
 3/ 15 percent maximum reduction for this method.
 4/ Other includes: bicycle lockers/showers (or) shuttle service or subscription bus
 5/ TSM trust fund could be used to finance any technique listed above.

KEY: X = Implemented
 O = Proposed
 RS = Ridesharing
 ETC = Employee Transportation Coordinator
 HOV = High Occupancy Vehicle (i.e., car/vanpool, bus, etc.)

Figure 1. TSM Actions contained in selected U.S. zoning ordinances

been used, although these are not as directly related to the parking code. The standards can be calibrated according to geographic area and set low or high enough so that an applicant has to rely upon alternative modes of transportation to serve the building. Both Fairfax, Virginia and Dallas, Texas have experimented with this approach, granting individual development sites approval contingent upon meeting maximum trip generation or auto occupancy criteria.

The final category is the Mitigating Measures^{1/} approach. This approach, utilized in high growth regions, mandates actions that new developments must implement to obtain development approval. Mitigating measures options would include the same TSM actions as the other approaches, but in this case the measures are mandatory. The idea is to mitigate adverse air quality, congestion or other impacts of development. Typically state environmental statutes grant local authority to mandate TSM-related actions. However, this approach is not usually tied to reductions in the minimum parking requirements. Santa Cruz and Sunnyvale, California and Seattle, Washington have each used this approach. Chapter IV presents a series of case studies on how several local jurisdictions have undertaken their selected approaches.

EVOLVING ISSUES

Experience to date with TSM elements in local parking codes has demonstrated that many factors affect the success or failure of such provisions. From this experience, it appears that the following criteria are necessary for a successful set of TSM provisions in a local zoning ordinance:

- (1) Validity - there must be a valid relationship between parking and the TSM measure (e.g., the number of parking spaces reduced for a landowner commitment to ridesharing must be related to the degree of increased ridesharing expected to result from the actions taken).
- (2) Attractiveness to the Private Sector - it should create the necessary financial or development incentives for the provisions to be used by the private sector.
- (3) Legality - it must be legal and enforceable.

^{1/} For an analysis of these three approaches and a discussion of others, see Jeffrey T. Hamm, Conditioning Building Permits with Ridesharing Mitigating Measures: The Seattle Case, Transportation Research Board Conference, (January, 1982).

- (4) Flexibility - the code must allow room for adjustments to a wide variety of circumstances.
- (5) Simplicity - the code must be easy to understand and administer.
- (6) Protection of the public interest - maintain good planning practices in the process of introducing TSM incentives (e.g., minimize residential parking problems).

Issues relating to the above criteria are discussed below.

Validity

TSM provisions in a local parking code must be founded on a sound technical relationship between parking demand and the ridesharing techniques employed. For example, one must have a reasonable estimate of the impact TSM strategies such as preferential HOV spaces and flex-time have on the number of parking spaces required. From the public agency's perspective, the concern is that the TSM measures instituted produce a reduction in parking demand which is comparable to the reduction granted in the parking supply.

Unfortunately, the effectiveness of these strategies has not been adequately quantified, and although attempts to develop such relationships have been and are being made, it is unlikely that anything more than "rule-of-thumb" numbers will be available. Measures such as a ridesharing coordinator can exist in an infinite variety of settings (e.g., employer size, employer type, multi-employer versus single-employer), and the effect of such measures can vary widely in degree of emphasis (some employers will have more aggressive ridesharing coordinators than others).

The resolution to this dilemma will lie in developing adequate definitions and performance criteria for each TSM measure and assigning reasonable effectiveness estimates (e.g., auto occupancy increases) to each. These definitions and performance criteria must be specific enough for the public agency to determine whether or not the intent of the incentives has been satisfied by the developer or landowner. The agency must not allow the actions promised by the developer to be so loosely defined that there is little hope of holding the developer to his commitment should he want to back out of his obligations for financial or other reasons. He may conform to the letter of his initial promise without complying with the intent.

One method of specifying parking reductions which can relieve public agencies from some of the pressure of developing tight definitions is to use a performance standard approach rather than a ridesharing incentives option approach defined earlier in this paper. In the performance standard approach, the developer commits to a specified level of ridesharing to be achieved, expressed in terms of number of carpoolers and vanpoolers, the level of average auto occupancy to be achieved, a trip generation rate reduction, or some other quantifiable measure of program effectiveness. As long as the chosen measure can be monitored, the burden of estimating the effectiveness of the various ridesharing measures remains with the developer or landowner, and there will be fewer chances of a confrontation over the interpretation of a definition. The developer has frequently little idea of how effective the TSM technique is, however. Thus, soundly reasoned analysis of the potential effectiveness of these methods in reducing parking demand must be carried out for this technique to receive appropriate recognition.

Attractiveness to the Private Sector

While on one hand parking reductions in exchange for TSM actions must not permit abuses nor endanger the well-being of communities and neighborhoods from a traffic standpoint, they must be attractive enough to developers, from a financial standpoint, to assume the risks which may be necessary.

If the TSM incentive option or performance standard approach is selected, the provisions must be attractive enough (in terms of reduced parking construction costs, etc.) for developers to want to take advantage of them. This will mean that the public agency must incur some risk, but with the ultimate expectation that there will be more efficient use of land and transportation resources. Prior to instituting TSM provisions a public agency should compute the potential economic benefits and costs which will be incurred by the developer/landowner, employees and public agency staff. Figure 2 is a sample computation sheet which could be used, and a simple example is shown to illustrate the process. If benefits are equal to or less than costs, most landowners will be reluctant to make a TSM commitment.

Site Data

Location:

Gross Square Feet: 330,000 No. Employees: 1350

Base parking requirement (no. spaces): 1000

Is parking to be surface, structured or underground? **Structured**

Ridesharing Incentives Proposed: *Ridesharing Coordinator, Preferential HOV spaces, flex-time, ride matching.*

No. spaces to be reduced: 100

Auto occupancy (AO): w/o ridesharing = 1.20
w/ ridesharing = 1.35

Developer Cost Savings per Space Reduced

Land cost \$ 10 /sq. ft.
X 330 sq. ft./pkg. space
÷ 3 pkg. levels (if structured)
X 100 no. pkg. spaces reduced
= \$110,000

Pkg. construction cost
Cost/space \$ 5000 (use \$1,000 surface, \$5,000 structured, \$10,000 underground)
X 100 (no. spaces reduced)
= \$500,000 (or \$29,150 /year amortized over 40 years @ five percent, constant dollars).

Other Annual Parking-Related Costs = _____ per space
x _____ (no. spaces reduced)
= _____ per year

Employee Cost Savings

Vehicle miles of travel saved = 16 mi. avg. work trip length (2-way)
X 1350 employees
X .093 (1/AO w/o - 1/AO w/)($\frac{1}{1.2} - \frac{1}{1.35}$)
= 2008 VMT saved daily
X 240 work days/year
X \$0.15/mile
Employee cost savings = \$ 72,280 /year

Note: 1 mile = 1.61 kilometers

Figure 2. Sample format for computing benefits of parking reduction through ridesharing.

Developer Landowner Costs

$$\begin{aligned} \text{Ridesharing personnel time} & \quad \underline{8} \text{ hrs/week} \\ & \quad \times 52 \text{ weeks/year} \\ & \quad \times \$20/\text{hr. w/ overhead} \\ & = \underline{8320} / \text{year} \end{aligned}$$

$$\begin{aligned} \text{Additional fees imposed (if any)} & \quad \$ \underline{\hspace{2cm}} / \text{year/space reduced}^{1/} \\ & \quad \times \underline{\hspace{2cm}} \text{ no. spaces reduced} \\ & = \underline{\hspace{2cm}} \end{aligned}$$

Public Agency Costs

$$\begin{aligned} \text{Personnel time} & \quad \underline{2} \text{ hrs./week}^{2/} \\ & \quad \times 52 \text{ weeks/year} \\ & \quad \times \$ \underline{20} / \text{hr.} \\ & = \underline{2080} \end{aligned}$$

1/ For example, to cover monitoring costs by the public agency.

2/ Should not include amount of time compensated for by any developer fees.

Figure 2. Sample format for computing benefits of parking reduction through ridesharing (cont'd).

If the mitigating measures option is selected, the attractiveness of the TSM provisions is not as much of an issue as the overall attractiveness of development. Certain locations may be so inherently attractive to developers that mandatory TSM mitigation measures will not dampen developer enthusiasm for the site. On the other hand, this approach applied to less attractive development locations may be the deciding factor in discouraging new development or redevelopment. The economic, land use and development objectives of a given jurisdiction will be the determining factor as to the applicability of an optional versus a mandatory ridesharing provision.

Legality and Enforceability

Enforcement uncertainty has emerged as a significant stumbling block to more widespread use of TSM provisions in local zoning ordinances. Political decisionmakers have wanted assurances that the developer making the agreement to institute certain TSM actions will, in fact, follow through. So far, there have been several primary issues relating to enforcement. These include:

- the proper legal mechanism to use as the basis for enforcement
- the types of penalties or disincentives to employ
- the transferability of the commitment to subsequent landowners.

Because of the great variety in local zoning practices, there are various enforcement techniques potentially applicable. The last section of this chapter outlines some of the most commonly used and most promising alternatives. Until more experience is gained with ridesharing provisions, and their ensuing enforcement problems, it is difficult to determine which enforcement strategies will be most effective. To date, there is only one known court challenge to a legal guarantee executed for a parking requirements reduction process. In San Francisco, developers are contesting TSM mitigation measures mandated by City ordinance and enforced with a development fee. They allege that the fee is a special tax requiring voter approval, as mandated by the state constitutional amendment commonly known as "Proposition 13".

The problem of enforceability may arise more from political than legal causes. Legally, any contracting party, such as a local zoning board or other public agency

overseeing the zoning ordinance, may seek damages, enforce a liquidated damage clause, or seek an injunction against a landowner failing to fulfill a TSM commitment. The enforcement problem arises in proving the extent of the harm from the program failure and in moving a City agency to mitigate such action.

Given that there is a contract that sets forth the terms of the parking reduction granted, a jurisdiction may seek legal recourse when the terms are not met. The political complexity of seeking an injunction against building use for non-compliance with the TSM terms is great. Thus, the more clearly such enforcement terms are defined, the easier enforcement can be achieved. The local jurisdiction's zoning enforcement arm must be equipped to handle potential enforcement action once the TSM parking reduction process is instituted.

Within each locality one or perhaps several agencies may be involved in the process. For instance, Montgomery County, Maryland has a Planning Board that controls development approval, and a separate agency, the Department of Environmental Protection, to enforce land use violations. Other jurisdictions have zoning administrators or public works department staff to analyze parking issues and recommend ordinance modifications with enforcement handled either within that agency or by a separate one. Because of the great variation among local jurisdictions, dependent upon jurisdiction size and administrative complexity, the local process for implementing a TSM parking requirements reduction will vary greatly.

Despite the need for responsive enforcement, many developers and major employers are as yet unaware of the economic and other benefits of TSM, and that such actions can and do work. To overplay the potential for failure due to disregard of commitments will lessen the exposure of TSM's potential benefits to the private sector.

Flexibility and Simplicity

In drafting TSM provisions for a local parking code, flexibility and simplicity are key criteria by which to judge the final product. Simplicity, or making the provisions easy to understand, will increase the likelihood of their being used. Unduly complex provisions may create uncertainty and discourage developers from taking the time to carefully evaluate and consider the process. Lack of simplicity may also foster citizen distrust, causing the provisions to be perceived as a further complication of development-related transportation problems.

Likewise, there must be enough flexibility in the provisions to allow them to be tailored to a variety of circumstances. For example, certain employer types are more capable of instituting certain TSM provisions, and local land conditions or other factors may favor one approach over another. The provisions should not preclude the options which may be best suited to a given situation.

Protection of the Public Interest

This issue is related to the enforcement issue, but is somewhat broader. It reflects the need for balancing parking policy between economic development interests and protecting the street environment, particularly residential streets. When parking reductions are granted near residential areas, the extent of the reductions must be judiciously evaluated. The public agency must give careful attention to what can be done to relieve any adverse impacts should the developer not achieve the reductions in parking demand expected. Residential parking permit programs can be instituted concurrently to relieve some of the impacts, but their existence is no excuse for permitting excessive reductions.

Other Issues

There are several other issues to examine but they do not fall neatly into any of the categories previously discussed. One has to do with how the TSM actions for implementation interface with other zoning ordinance provisions. An important prerequisite to instituting a TSM parking reduction process is to have an acceptable base from which to make those reductions. If the base office requirement, for example, is already low, one of two things will occur: 1) there will either be little incentive for further parking reductions, or 2) if the reductions are taken, an inadequate parking supply and the accompanying traffic and parking overflow problems will likely result. Reductions from an already low requirement are illogical. The best way to avoid these problems is to have a reasonable base from which to reduce requirements. For locations outside CBD's or densely built-up areas, a reasonable base requirement is 3.0 spaces per 1,000 gross square feet (33 spaces per 1,000 gross square kilometers) of floor area or 0.75 spaces per employee on the major shift (see Ref. 11).

Another issue frequently mentioned is the role of the financier and in turn, leasing agent, in the specification of parking needs for particular developments. Since lenders bear much of the financial risk of development and since they may perceive parking to be a factor in its success or failure, they are an important group to educate in the potential benefits of TSM and associated parking reductions. Similarly, leasing agents, especially those working with multi-tenant office buildings, may be reluctant to undertake the risk of trying to lease office space without "enough" parking. This educational process will gain momentum as more localities introduce TSM provisions, but transportation professionals must be ready to demonstrate the benefits and likelihood of success of these projects.

Another issue with which many jurisdictions grapple is the degree to which zoning ordinance provisions should be negotiable on a case-by-case basis. While a highly negotiable approach affords a high degree of flexibility, it places a substantial burden on both the public agency and developer to prove their case, and may result in an adversary relationship. It may also result in unnecessary delays or cancellations of projects, and consume additional private and public sector staff time. In addition, the final resolution of negotiated parking reductions often must be based on the same data or same precedents each time. This argues for establishing a ridesharing provision which has more rigid guidelines, based on the best available data, with enough flexibility to enable a response to the more unusual circumstances. Localities may want to retain the right to negotiate on very large developments, but let the smaller routine developments be addressed directly by provisions in the ordinance.

ESSENTIAL INGREDIENTS OF TSM PROVISIONS FOR PARKING CODES

Experience to date has indicated that there are certain components which must be present in a set of TSM provisions for it to satisfy the criteria discussed in the previous section. These are:

- specification of TSM options,
- method of agreement,
- monitoring procedures, and
- enforcement procedures.

These are discussed briefly below and amplified in detail in Chapters III and IV.

Specification of TSM Options

Potential TSM options were previously listed in Table 1. There must be a mechanism for relating these to the probable impact on parking demand, either identified explicitly in the ordinance itself or in some other document which can be used as the technical basis for the parking reductions granted. As experience with these techniques increases, it will be desirable to develop more rigid guidelines on the reductions allowed for given developer actions. Specific TSM reduction "formulas", as crude as they may be, will help streamline the process and eliminate some of the uncertainty which developers may feel going into a development proposal. Chapter III presents some estimates of the effectiveness of various TSM techniques.

Method of Agreement

Where a developer exercises the option to institute TSM actions, there must be a legal, binding agreement stating the responsibilities of both the public agency and the developer or landowner. The agreement should set forth not only all the terms and conditions but also any penalties to be imposed in the event of non-compliance. Some of the possible approaches to this agreement are:

- o A contract;
- o A land covenant;
- o A performance bond;
- o Building permit conditions;
- o Use of state environmental enabling authority to control landowner actions that degrade the environment, which is available for transportation and parking;
- o TSM development fee or trust fund.

Most of the above have been implemented by various U.S. jurisdictions. The applicability of each method will vary depending on each jurisdiction's land use legal environment. There is too little experience to demonstrate the superiority of any one of these techniques, and the viability of the techniques will often be determined by local laws and practices. Special mechanisms may exist in some local jurisdictions which offer a unique opportunity better suited to local development practices than one of those listed above. Chapter III describes these techniques in more detail.

Monitoring Procedures

The monitoring element of TSM parking provisions comprises the means by which compliance or non-compliance is determined. If certain standards are to be met, it must be determined whether, in fact, the standard has been satisfied. Monitoring determines whether enforcement is necessary. Monitoring could range from a simple periodic review to see whether the landowner is generally following through on his commitments or it could involve a more elaborate quantitative assessment through auto occupancy surveys and other data analyses. This is an area where public agencies will be concerned with simplicity, as they generally cannot afford to spend a great deal of time and effort on most monitoring processes. In some cases, fees could be assessed to developers who benefit from significant parking reductions to help offset the cost of program monitoring.

Enforcement Procedures

Enforcement procedures have been one of the most controversial areas of TSM parking provisions to date. Although it would be hoped that the need to exercise enforcement procedures would be rare, mechanisms must be available to protect the public interest when TSM actions are agreed upon. Not only must it be determined what enforcement measures will apply to the original landowner, should his commitment fail, but it must be determined how enforcement procedures are made applicable to subsequent owners of that property. Again, several options are available although local land use experience will dictate which method is used:

- o Land set asides or the addition of more structured parking,
- o Forfeiture of performance bond,
- o Revocation of use and occupancy permit,
- o Injunction against continued building use, and
- o Contractually established liquidated damage clauses.

Each jurisdiction may have different agencies which would enforce the options above. The prescribed enforcement measures should be specified in the agreement, but the timing and actual enforcement of a violation must be predetermined. As mentioned, the City of Seattle has been using authority under its state environmental laws as the basis for enforcement. Agencies should select those elements which are most compatible with the zoning approach or parking mitigation methods in force in their jurisdictions.

III. ELEMENTS OF TSM RELATED PARKING PROVISIONS

Chapter II briefly described four essential ingredients for TSM provisions in a local parking code. This chapter discusses the nature of each of these elements in more detail.

DESCRIPTION AND EFFECTIVENESS OF TSM ACTIONS

Substantial research has been done on evaluating ridesharing programs and other parking management techniques. However, the impacts of such programs on parking demand have not been assessed, nor have researchers identified how TSM actions might affect the assumptions made about parking demand as parking code requirements were being set in local ordinances. This section briefly capsulates each TSM action or set of actions and prescribes a typical range of effectiveness in reducing parking demand. More detailed descriptions and state-of-the-art reviews of many of these techniques can be found in the report Study of Parking Management Tactics (1), published by FHWA. A good source of effectiveness data is Traveler Response to Transportation System Changes (24).

A brief listing and effectiveness estimate of each TSM action is presented below. The actions correspond to those previously listed in Table 1.

1. Ridesharing related actions

General - at a minimum, involves an employee transportation coordinator and a matching service. A 5-10 percent reduction in parking demand is typical of this moderate level program. Auto occupancies for more aggressive programs with van and buspools are in the 1.7 to 1.8 range, producing parking reductions of 30-35 percent. Programs under very favorable conditions can lead to greater reductions.

- a. Participate in locally sponsored ride-matching service - this can range from simply a computerized matching service to the more effective personalized approach (6).
- b. Conduct in-house ride matching - this may include a locator board, computer matching or some other technique. The ETC takes a more active role in meeting employees transportation needs.

- c. Preferential parking for HOV's - locating parking spaces for carpools and vanpools closest to the building entrances. Typically saves 15-60 seconds in walk time and increases convenience. Spaces may be used for visitors after AM peak period. Estimated reduction in parking demand, based on data in reference (25), is one to three percent.
- d. Reduced parking cost for HOV's - gives free parking or lower cost parking to HOV's. Can be significant incentive in areas with high parking cost, but can produce administrative and enforcement problems. Used with preferential HOV spaces in areas of high parking cost, it is expected that a five percent demand reduction could be achieved. In a program in Seattle, 22 percent of carpools sampled had shifted from single occupant autos (19).
- e. Subsidize or operate vanpool or buspool service - this action can take on a variety of forms, but involves aggressive employer participation in arranging this sort of transportation for employees. Auto occupancies of up to 2.5 to 3 have been achieved with the best programs, with 50 percent reductions in parking demand compared to sites with no ridesharing programs.

2. Public Transit Related

- a. Employer subsidized transit passes - this action involves an employer committing to purchase public transit passes for use by employees. Employees taking advantage of this opportunity are not necessarily all new transit riders. The costs to employers and the effect of the measure will vary depending on how much of the pass is subsidized.
- b. Parking reductions based on proximity to transit - this action is in response to lower parking demands found near locations with good transit service. It encourages land development which enhances the use of transit.
- c. Elimination of parking cost subsidies - employers would make a commitment to change the market rate for parking and agree not to subsidize employee parking cost in full or in part. Elimination of subsidies could reduce parking demand by three percent in low cost areas and by 20 percent in high cost areas, based on procedures in reference (3).
- d. Daytime employer-sponsored shuttle services - this action includes the provision of shuttle services to transit stations or within or to major employment centers, enabling employees to make midday trips without a car and thus be free to rideshare or take transit to work. In several cases, the private sector has initiated such action on its own.

- e. Transit amenities - provision of bus shelters, walkways from transit stops, and convenient information displays to foster transit use. Estimated impact on parking demand is small.

3. Other Parking Management Techniques

- a. Maximum parking requirements - placing a ceiling on the number of spaces a developer can build. This technique is not recommended for less densely developed settings, and could be a deterrent to development if set too restrictively in other settings. When used in conjunction with preferential HOV spaces and few alternative parking locations, parking demand reductions may be in the ten percent range, based on data in references 3 and 25.
- b. Fringe parking - allow a percentage of parking to be supplied at off-site locations with transportation provided to the sites. Concerns with this technique include: the possibility of employees parking near the site anyway, use of fringe lot by those for whom it was not intended, inconvenience and cost of transportation. A significant proportion of spaces should be retained on-site.
- c. Shared use parking - sharing of parking spaces among uses with non-overlapping peak parking demands. Reductions of 20 percent are typical with a mix of day and nighttime uses.

4. Other TSM Actions

- a. Pedestrian and bicycle facilities - providing walkways, bike lockers, showers and other amenities. Estimated effect on parking demand is small.
- b. Priority treatments through traffic operations - an example of this action is creation of priority access point for HOV's to a building site. Estimated effectiveness is two percent reduction in demand for one minute of travel time differential between HOV's and other vehicles.
- c. Employ or designate an employee transportation coordinator - functions include assisting employees in ridesharing formation, promoting benefits of ridesharing and transit and coordination with local ridesharing agencies.
- d. Implement flex-time or other work schedule program conducive to ridesharing - the employers with the best ridesharing programs almost always have an alternative work schedule arrangement. Its impact on ridesharing, although minimally quantified, produced a three to five percent increase in auto occupancy in San Francisco.

AGREEMENT PROCESS

Once a jurisdiction determines the mix of TSM measures to implement, it must develop its approach to implementing the provisions, guaranteeing their long-term viability, and also monitoring and penalizing any violations of those terms. The first step lies in determining how a decrease in the amount of parking spaces will be granted to an applicant.

Jurisdictions vary in their methods of proceeding with land use development. Some rely heavily on establishing a multitude of specific standards, some permit wide variation in the process. All, however, likely permit such development through one of the processes described briefly below. The methods or "Zoning Forms of Action" discussed below have been used primarily to justify the rezoning of parcels.

Reference to the Applicable Code Section

The most simple method to obtain development approval is to qualify for a parking requirements reduction for TSM measures as of right. In other words, there would be a section in the local parking code that clearly establishes the percentage reduction in parking obtainable through the implementation of specific TSM actions. Such jurisdictions as Schaumburg, Illinois and Montgomery County have implemented or are studying this approach. Placer County, California has mandated it.

This method has advantages in that it institutionalizes the process and clearly invites new development to follow city or county established goals. One disadvantage is the significant pre-implementation study and evaluation of parking demand necessary to set accurate parking reduction guidelines and to establish a process for reductions which will be applicable to a wide variety of circumstances.

Site Plan Approval

In many jurisdictions, an increasing amount of new land developments are controlled through the site plan review process. Site plan review refers to a process of development approval that requires a detailed submission of all elements of the building plan. Depending upon the level of sophistication of the site plan process, an accompanying approval and enforcement process may be available that could be expanded to include a parking reduction process for TSM actions. For example, in

Montgomery County, Maryland, as high as 80 percent of all office development has been by site plan review. In response to this frequent use of site plan review, one proposal under study there would use that process as the primary tool for screening parking reduction applications and for creating enforcement controls. For instance, recent amendments to the County zoning ordinance have granted the Planning Board authority to require performance bonds to secure site plan compliance, to revoke site plan approval and building permits for demonstrated non-compliance, and to require site plan provisions to contain language binding current owners, successors, and assigns.

Other jurisdictions with an existing site plan review process may also find it possible to incorporate TSM provisions into the code with only minor modification to the process. The use of existing site plan enforcement techniques must be considered carefully, because the use of current procedures to implement TSM provisions can help ensure simplicity and ease of operation, key elements of a successful parking requirements reduction process for TSM actions.

Variance

Rather than create the legislative task of enacting a new ordinance section, with all the detail necessary to specify each element of the TSM provision in the code, a case-by-case or variance approach can be adopted so that approval is granted only by exception. Provided close contact between development interests and planning agency staff is maintained, the inclusion of TSM actions in new development may be as successfully achieved through this approach as with others.

Traditionally, a variance may be issued when strict application of the ordinance creates practical difficulty or unnecessary hardship due to exceptionally narrow, shallow, or irregular lot size, or other exceptional physical conditions.^{1/} Additionally, special circumstances of the building not generally applicable to the neighborhood must apply, and the granting of the variance must "not adversely affect the general welfare."

^{1/} Hagman. Public Planning and Control, P. 421.

Dallas, Texas has used this approach for two new developments because of the ease of implementation. Other jurisdictions have rejected it either due to the lack of clearly established standards, because its use has been restricted to physical hardship, or because a less extensive public hearing process that would result from a new ordinance may minimize citizen input on such new modification.

Special Use Permit

Also called special exception in some jurisdictions, a special use permit requires a landowner to receive local authority approval for using his property in a specific manner. Thus conditions are described in the ordinance that, upon landowner application, may qualify his parcel for approval as a special use. Thus, when a landowner applies for a special use permit to operate a private boarding school or hospital in a certain zone, if the conditions set forth in the local ordinance specify the suitability of the use, the permit must be issued.

If a proposed use of the TSM parking reduction process met the conditions of the particular zoning ordinance for special use, then the special use approach could be implemented with no need for a new ordinance section. Alternatively, the special use conditions could be amended to specifically list a TSM parking reduction process as suitable for certain zones.

The disadvantage of this approach lies in the fact that it typically has applied to uses, not to the level of parking demand generated by the uses. Further, not all jurisdictions have this zoning form of action available and may better handle the TSM parking reduction through some specific listing of it in a code section.

Conditional Use Permit

A conditional use is a use specifically permitted in a zone, but subject to local government review for possible imposition of conditions on that use.^{1/} Common conditional uses are churches, gasoline stations, and planned unit developments.

^{1/} Hagman, Public Planning and Control, p. 453.

Conditional use permits provide the local government with planning flexibility by granting it authority to review potentially acceptable uses and then reject or approve specific applications. Some jurisdictions grant a large number of conditional uses, permitting a variety of them; others are much more restrictive in expanding the scope of established zoning standards to approve a conditional use. Thus, as with many of the zoning forms of action, state and local law can directly affect the benefits or disadvantages of each method.

One disadvantage of using conditional zoning to accomplish a TSM parking reduction process is that this process lacks uniformity in setting the specific criteria for when reductions are permitted. Conditional use permits invite numerous requests for consideration of special circumstances and thus place an added burden on jurisdiction officials to consider these requests. Without specific criteria to guide zoning officials the chance of institutionalizing the TSM parking reduction process are reduced.

Advantages of the conditional use are that the TSM parking reduction process could be begun with the first applicant without waiting for the complex process of enacting a new ordinance. Also, most ordinances mandate a public hearing process when considering conditional uses, thus providing public input, an important factor in helping institutionalize the TSM parking reduction process.

ENFORCEMENT PROVISIONS

After a jurisdiction selects the best suited zoning form of action it must guarantee the provision of TSM measures through appropriate enforcement mechanisms. Enforcement measures, as outlined below, are designed to provide recourse to the public jurisdiction should the TSM commitments made prior to development approval fail. The provisions described below include legal, monetary, or physical enforcement mechanisms.

Covenants

Covenants are promises between parties that normally are found in property deeds. Promises in the form of covenants that "run with the land" are enforceable between the original land seller and purchaser, as well as subsequent purchasers. A

covenant runs with the land when the burdens (duties) and benefits, or both, of the covenant pass to succeeding landholders of the initial covenanting parties (14).

There are four requirements to create a covenant. There must exist both a writing and the intent to create a covenant. More importantly, the covenant must "touch and concern the land" which means generally that it must affect the legal relationship of the parties as landowners, not merely as community members. Usually a covenant makes the land itself more useful or valuable to the benefitted party. Finally there must be privity of estate or a succession of estate between the original parties and succeeding parties.

Although a strict legal definition of covenant would appear to preclude the local government, a third party in the development process, from enforcing covenants required by the jurisdiction and later unfulfilled by subsequent purchasers, the doctrine of equitable servitude may provide flexibility. This doctrine holds that an agreement restricting the use of land, even if not enforceable by law for damages or specific performance of the covenant itself, may be enforceable in equity (the "conscience" jurisdiction of the court) against future landholders with notice of the covenant. Because of the strong legal tradition against restraints upon the alienation of land, formerly only physical restrictions like an agreement to maintain a fence, would be enforceable.

An important factor concerning such doctrines is that the extent to which such flexibility exists in the case law of individual jurisdictions varies greatly. All persons considering the implementation of TSM parking provisions should seek competent legal advice on the acceptability of such enforcement measures in their jurisdiction.

Contracts

Another enforcement option that may be available in some jurisdictions is the execution of a long-term performance contract between the landowner and the jurisdiction. Such contracts would recite the terms of TSM parking reduction measures acceptable to both. Importantly, such contractual agreements should be used to guarantee the TSM commitments, not to provide the grounds for an exception to regular zoning practices. If the contract is used to permit a landowner to avoid valid zoning requirements, many jurisdictions have labeled such action "contract zoning," which is illegal. Contract zoning occurs when a jurisdiction permits a rezoning exception to normal zoning practices in exchange for the developer's

contractual commitment to use the property a specified way, within a certain time limit. If the time limit expires or the property is not used as specified, then the permission for the rezoning terminates. In other words, to effectively use this method, contracts must be used to ensure commitments regarding parking and TSM commitments, not as a pre-condition to receiving rezoning approval.

A disadvantage of using contracts in this setting is that they only bind the signatories. Thus, subsequent purchasers of the property will not be contractually bound to fulfill those commitments unless an assumption of the contract obligations occurs between the original owner and the purchaser. Damages for breach of contract may be sought against the original parties, however. Therefore monetary damages for failure to perform the commitments could be sought by the jurisdiction. Further, a contract might include a liquidated damage clause specifying monetary payments that would be sought if the landowner/signatory remained in noncompliance.

Despite the fact that subsequent purchasers may not be contractually bound by the original landowner contract, if that contract were recorded in the land records it would serve notice of the restrictions and would permit the jurisdiction to revoke or withhold necessary building occupancy permits.

The second disadvantage of this approach is the lack of public notice of the contract. Unless it were recorded in the land records, a contract is a private legal document binding only on the parties to it. Thus, any such contract enforcement mechanisms should be recorded in the jurisdiction's land records.

Performance Bond

A performance bond is a method of ensuring compliance with a specific commitment that requires money to be placed in escrow until the condition is performed. Should a jurisdiction wish to use this approach, it must have authority to exercise this method or it may have to seek the authority to require performance bonds as a pre-condition to the issuance of development approval. For some jurisdictions, special state enabling legislation may be necessary. This is particularly appropriate when state-granted municipal authority operates under "Dillon's Rule". Under this approach, localities may act only when so authorized by state action. Thus, some localities may need state enabling authority to create a TSM trust fund, for example.

One performance bond method would require the landowner to place money in an interest-bearing escrow account prior to issuance of a use and occupancy permit. The amount of money may be based on the one-year cost of operating a well-run company ridesharing program or some equivalent cost. The bond may be released at the end of a specified time period such as three years after the building site attains 80 percent occupancy and is in compliance with the terms of the TSM commitments.

Forfeiture of the bond would occur only for willful noncompliance as demonstrated by failure to employ some of the specific techniques listed. For instance, a failure to hire an in-house coordinator or failure to designate HOV parking spaces might justify outright forfeiture of the bond.

This method provides up-front cash to ensure compliance. A disadvantage, however, is the perceived development disincentive to make an up-front development payment that may not qualify for regular developer financing and may have adverse tax consequences to the developer. Further, once the enforcement bond terminates, its leverage as an enforcement method ends and program continuation becomes uncertain.

Fines

The other monetary method of compliance would require the jurisdiction to amend its local code to permit it to assess fines for non-compliance with the terms of the TSM parking reduction process. This method is highly dependent upon local law because authority to legislate civil penalties for TSM non-compliance probably does not exist in many states.

The statute should define the amount of the fine, perhaps \$100 per space reduced below the parking requirements that would otherwise have been in place. An analagous enforcement option is the fines assessed polluters under the Clean Air and Water Acts. They assess a per day charge for non-compliance. Any ordinance passed could provide authority to the local jurisdiction to assess such fines.

This method has the advantage of providing a steady flow of funds that can be used to compensate the jurisdiction for its efforts at ensuring implementation of the TSM actions. The disadvantage of this lies in the necessity of monitoring the non-compliance and then having to seek judgment against the violator and then recover the charges. An administrative process may be created to handle such fines through the Planning or Zoning Board to streamline the process.

Land Set Aside or Other Provisions for Increasing Parking Capacity

One of the most frequently mentioned potential problems with granting parking reductions based on commitments to TSM is that if the commitments fail, there will be no opportunity to supply the necessary additional parking capacity. One method some jurisdictions have used to provide for additional parking, should it be necessary, is to require land to be set aside for possible surface parking or contingency plans to be established for additional structured parking. On notice from the public agency, such additional parking could be required. The major disadvantage of this approach is that it can act as a significant deterrent to a developer making any TSM commitments. The cost of these assurances is often too high.

MONITORING PROCESS

Monitoring Techniques

The type of monitoring techniques to be employed to assure that landowner or employer commitments are being fulfilled will depend on the type of commitment made. If a TSM incentives option approach has been elected, involving commitments to institute a ridesharing program, for example, monitoring will involve a verification that those functions (e.g. establishing a coordinator, participating in a matching service, etc.) are being performed. The difficulty arises in the fact that a landowner or employer may be performing these functions but to a minimal degree, to avoid the associated costs.

Improvements can be suggested to the employers by the public agency in the course of monitoring, but deficiencies often fall into a grey area with clearcut violations difficult to cite. This is a good argument for third-party involvement in some of the on-going TSM actions such as ridesharing, in which case compliance is under more direct control of the public agency.

If the commitment has been in the form of a performance standard (i.e. achieving specified mode splits, reaching a certain quota of participants in the ridesharing program, achieving a specified auto occupancy or staying under a given trip generation rate or parking demand), then a monitoring program must be established to detect whether the standard has been satisfied. Certain of these involve more effort than others, as indicated in the discussion of monitoring processes below. Monitoring needs for five types of performance standard commitments are:

- achieving specified mode splits - this method requires a periodic employee survey of travel modes. It is perhaps the most difficult type of commitment to monitor in that strict sampling methods should be adhered to and the cost of data collection and analysis can be substantial. However, it produces a very informative measure of how the program is doing.
- reaching a quota of participants in ridesharing program - monitoring this commitment involves conducting a count of participants on either a confirmed listing or as they actually arrive at the site. A count conducted legitimate pool vehicles are they park in the HOV spaces is actually an easy and inexpensive method, usually requiring only one person for the morning peak period. A verification of a listing of poolers should be adequate if a third party has on-going involvement in the program, but may be questionable if the employer is the only source.
- achieve a specified auto occupancy - this type of commitment is easily monitored if the site has access points for its exclusive use. Auto occupancy counts can simply be conducted at each entrance to the parking lot. If there is no exclusive access, a more complex employee survey must be used.
- stay under a given vehicle trip generation rate - this can be easily monitored if there are exclusive access points, as described above. If not, this commitment, for all practical purposes, cannot be monitored.
- stay under a given parking demand - this commitment can be monitored if all vehicles park at the site in a lot or garage for exclusive use of employees or visitors at the site. If any on-street parkers can also be identified as associated with the site, a simple parking accumulation count can be conducted, If parking locations are dispersed and not identifiable, this commitment cannot be monitored.

Monitoring Responsibility

The public agency must have some part in monitoring commitments to maintain the private sector's role as one of accountability to the public. However, the level of the public agency's involvement may vary. It could range between supplying all personnel required for conducting the necessary counts and data analyses to simply establishing a certification process whereby the landowner or employer executes a legal statement periodically verifying that the program is in compliance. If any difficulty is foreseen in meeting the commitment, it is better to have the public agency take on a more responsible role in monitoring. This need not be costly, and could be partially financed through initial or annual fees assessed the development for that purpose. In addition, the agency responsible for monitoring will vary from city to city. It could range from the transportation department to the zoning department to the agency overseeing use and occupancy permits. In any case, it should involve personnel with an understanding of the purpose and methods of monitoring.

IV. CASE STUDY SUMMARIES

The following nine jurisdictions have all at least carefully considered, and many have actually implemented, TSM provisions in their local parking code. The areas were chosen because they have the most advanced policies regarding this topic. An effort was made to select jurisdictions from different geographic areas and with a range of population size, but all appeared to possess a common thread--active land development settings. Figure 1, presented earlier, summarizes the range of TSM activity and other key factors covered by the land use actions of all nine jurisdictions.

DALLAS, TEXAS

BACKGROUND

Dallas, the second largest city in Texas and Seventh largest in the United States, had a 1980 population of 904,000. It has grown considerably in the last 20 years and, concomitantly, so have its transportation and parking problems. Although the city has not adopted a specific TSM ordinance, it has permitted reductions in the amount of off-street parking supplied by large-scale developments through a variance procedure.

Because off-street parking requirements in Dallas have always been low, a natural incentive for new development to seek reduced parking requirements has not been present. Nevertheless, two development sites have sought variances to permit reductions in the amount of parking they supplied directly from the city. The planning staff, in response to landowner initiatives, has developed an unofficial policy of permitting such reductions as they deem appropriate based upon the development need and level of transportation alternatives available to reduce demand. Large scale developers have been further encouraged to seek reductions in the code required parking supply by an ordinance amendment that permits a maximum reduction of 50 percent for large scale mixed use developments. Such reductions require submission of a transportation plan detailing the traffic and parking needs generated by the location. Thus far, the process remains so new that problems in operation of the reduction process or in the provision of alternative access incentives have not emerged.

The level of ridesharing and transit use in the Dallas area is fair to good. Within the county, average vehicle occupancies are 1.25; entering the Dallas CBD, that rate approaches 1.35. An estimated 25 percent of Dallas employees carpool; the level approaches 40 percent for those in CBD locations. An additional five percent of all Dallas commuters use the bus, while approximately 30 percent of CBD bound commuters use transit.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

Since 1980, the city has permitted two development sites, one City and one outlying suburban site, to provide less than code-required parking in exchange for commitments to encourage alternatives to single-occupant commuting to the site.

Subsequent to the first approval of a development site of approximately four million square feet of mixed use (including 1.9 million office and one million retail), the Dallas Galleria, the city enacted a zoning ordinance provision which enabled very large mixed use developments to reduce the amount of parking provided. Thus, for those developments in excess of 300,000 square feet having office, retail, and hotel uses with a minimum of 250 rooms, established reductions were permitted of up to 50 percent provided a study substantiating the decrease commensurate with the reduction level sought.

The second development to obtain reductions from code required supply, nearly four million square feet of mixed use space in Oaklawn, near the Dallas CBD, additionally sought a variance to be able to supply even less parking. A variance was granted in 1981 to permit the landowner to reduce supply beyond the generous mixed use reductions passed earlier in the year. Both the availability of transit and the location's proximity to the CBD helped convince the City to grant the extra parking reductions.

Of further note is a provision within the city code available since 1960 that has permitted reductions in the amount of off-street parking in the CBD in exchange for payments into a city-managed fund created to provide a city parking supply. But with a supply requirement of .5 per 1,000 square feet, a low standard, city staff has reported no interest in this provision.

The Dallas Galleria received a parking supply reduction approval based upon a transportation study demonstrating how the alternatives to single-occupant vehicle commuting will reduce parking demand. Additionally, the code-required level of parking spaces must be held in escrow until a study conducted within 18 months to three years after building operations begin establishes that the parking demand has been reduced sufficiently to have qualified for the reduction. Although no reference is made in the ordinance, presumably the potential parking spaces held in escrow must be turned into parking if the reductions granted prove unwarranted.

The Galleria Transportation Study proposed a series of TSM steps to reduce the parking demand nearly 50 percent (See Figure 1). The key techniques include:

- 1) An Employee Transportation Coordinator
- 2) Participating in Areawide Ridematching System
- 3) Provision of HOV Parking Spaces and Subsidy for HOVs
- 4) Construction and Implementation of Transit and Ridesharing Amenities

Applicability to Which Land Uses

A variance is available for all land uses, although staff contemplates permitting further applications from primarily office or industrial uses. These uses, being most amenable to ridesharing due to the regular commuting patterns of employees working at office or industrial locations, are most likely to receive variances.

Existing Requirements

Currently, Dallas requires three spaces per 1,000 gross square feet of office use and two spaces per 1,000 of industrial. In the designated CBD region, the requirement is even lower, .5 spaces per 1,000 for office.

Technical Support for Provisions

The percent reduction in off-street parking for the Dallas Galleria was based upon a Parking and Traffic Study completed for Gerald Hines Interests, developers of the Galleria. It forecast a peak period trip reduction of 46 percent in the PM through the application of ridesharing, transit, parking management, and flex-time.

In consideration of this study and coupled with staff discussion of the anticipated level of success of these measures the city approved the variance. As the project moves into the later phases of its five-year effort, a greater percentage of its office development will occur. A follow-up study verifying the reduced level of parking demand must be completed at this later stage. Should that study fail to show such reduced demand, spaces that have been set aside will presumably be converted to parking.

Agreement Process

Thus far Dallas has permitted further reductions in the amount of parking supplied for land uses involving large, mixed-use developments through the variance procedure. The informal use of the variance procedure, which is usually applied only where physical limitations on the land parcel pose an undue hardship on development

objectives, presents only limited opportunity for parking reductions on TSM measures. As future development occurs, pressure for more clearly defined reduction standards, or a continuance of a broadly construed variance policy will likely set Dallas development policy on this issue.

Enforcement

The only specific enforcement mechanism is the mandate that required spaces be held in escrow. City staff believe that the substantial traffic constraints around these locations will make such TSM actions self-enforcing. If TSM efforts are not implemented, deterioration in the site's attractiveness may occur.

Monitoring

Like the enforcement provisions, monitoring will rely heavily on developer self-review, and on the action taken by individual businesses within the complex. City staff plans intermittent checking of parking demand at these locations. However, no formal procedure for evaluation and compliance action should the developer's future traffic impact surveys reveal excessive non-compliance has been set forth.

IMPACTS

Since the variance procedure is available to all potential developers without the necessity of a new ordinance section, less publicity regarding the availability of such a parking requirement reduction method has meant less opportunity to institutionalize the concept. No practical experience regarding whether the level of reduction was appropriate for the development is yet available.

REFERENCES

- Section 51-4.301 of the Dallas Development Code
- Young Hadawi Deshazo Inc., "An Assessment of Ridesharing Potential and Peak Period Demand Management at the Dallas Galleria," (March 18, 1982)
- Martinez, Elias, City of Dallas Urban Planner - Interviews, (August 1981, 19 November 1982)

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ORLANDO, FLORIDA

BACKGROUND

Orlando is a rapidly growing city in central Florida. Its downtown, flanked by Interstate 4, has significant new office and commercial development for businesses attracted to the temperate climate and flourishing tourist trade. The city's 1980 population had grown 30 percent since the 1970 census from 99,000 to 132,000.

This rapid growth has city officials and planners concerned about parking supply and location and the impacts of these factors on the location and intensity of growth in the Orlando CBD. The city applied for and received authorization to use \$400,000 in federal funds for Transportation System Management (TSM) improvements and is using a portion of its own funds to complement or supplement these actions.

City officials, in part to comply with state-mandated planning efforts, spent most of 1981 developing a growth management plan. The goals of that plan, to encourage more efficient land use and densities required for energy efficient transportation services that can be provided within existing transportation capacity limits, guided the development and passage of the ordinance.

During the process of planning agency review and recommendation regarding parking in downtown Orlando, the decision to reinstitute parking requirement minimums where formerly there were no requirements, was made. Thus, a Parking District Overlay (PDO) ordinance was developed with fairly low off-street parking requirements. Within the overlay district, a high-intensity development (HID) district was established within which some reductions from the parking requirements would be permitted. Landowner actions that would qualify for reductions are set forth below.

The process of adopting the ordinance directly involved both the private and public sector as a series of public hearings preceded final ordinance adoption. Although no new development has been proposed which uses the trust fund reduction method, city staff is optimistic that future development will use the provisions. Staff estimates large potential savings due to the projected cost per city provided space at \$4,500 to \$6,500, \$7,000 to \$10,000 for privately provided spaces.

Current levels of ridesharing and transit use are generally low. Until 1980, the city did not provide financial support for transit services.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

The relevant portion of the Orlando ordinance is Section 58.256 labeled Parking Alternatives and Bonuses. Under this provision, any landowner within the designated HID district may contribute to a TSM trust fund in lieu of building the requisite number of parking spaces. The process permits a landowner to reduce the off-street parking required by the ordinance up to a maximum 20 percent reduction. In exchange for that reduction, the developer must contribute 80 percent of the cost of a parking space in Orlando per each space reduced, as periodically set by the City Council.

The uses to which the money contributed to the fund may be applied are limited to functions that will accomplish the objectives of the downtown growth management program. Thus, the TSM trust fund management entity may disperse funds for the following:

- "To acquire and/or develop transit capital equipment or systems
- to fund construction or improvement projects within the downtown which have a TSM purpose
- to fund the operating costs associated with new, upgraded, and/or expanded transit service serving new developments within the HID District."

Another element of the section permits the city to use interest from the fund to finance planning or engineering studies and related administrative costs in connection with TSM actions.

Related to this reduction process is a second section entitled, "Off-Street Parking Account and Bonus Reduction for Payments-in-lieu-of-Parking." Under authority of this section, an off-street parking trust fund is created to be used for the provision of parking in the HID area. Such parking will be for the public and available for long-term lease by property owners. A maximum parking requirements reduction bonus of five percent may be permitted for parking provided that it is equal to a minimum of 85 percent of the parking requirement. A trust fund payment commensurate with the parking space cost reduced is also included for this fund.

Applicability to Which Land Uses

The downtown PDO district is approximately 2,000 by 4,500 square feet within the downtown; the HID district fits within the PDO and covers about two-thirds of it. Any land use within the HID district is eligible for the reductions.

Existing Requirements

Formerly, office off-street parking requirements were 2.86 per 1,000 square feet. Within the downtown there had been no requirements. Now office requirements vary based upon building size as follows:

| | |
|--------------------------------|----------------------|
| 0-100,000 square feet | 2 spaces per 1,000 |
| 100,001 to 200,000 square feet | 1.5 spaces per 1,000 |
| 200,001 and higher | 1.0 spaces per 1,000 |

Within the HID district, no more than 25 percent of the parking required of an individual development may be provided on site in a surface lot. Other constraints include a requirement that 70 percent of all off-street parking must be in structured parking.

Further, surface parking lot size is limited to 25 percent of the parking requirement. The remainder must be supplied in a parking structure.

Technical Support for Provisions

Field survey data collection for the development of the final parking requirements was minimal. City staff did, however, contact many other localities regarding their efforts in this area. Staff interaction with development interests established the accepted relationship between higher density and lower parking requirements. Technical Report 18 described the planning issues and goals in implementing such a parking overlay district ordinance. The goal of prospectively establishing parking policy to determine the future pattern of downtown development resulted in an examination of TSM options. The related goal of providing sufficient short-term parking by reducing long-term (commuter) parking demand was also highlighted in the plan. Essentially, the re-establishment of parking minimums and the payment in lieu of parking provisions was designed, in part, to shift the financial burden of providing such parking to the private sector.

Further, a report called Core Area Trend Growth, Volume 4, Technical Report 10, discussed the number of parking spaces needed for the downtown area. Projections of parking demand for 13,473 parking spaces downtown for the year 2000 hastened the adoption of the Orlando ordinance as a method of institutionalizing methods to reduce that demand.

Agreement Process

Because the new ordinance specifically sets forth those actions for which parking reductions will be granted, landowners using the process need only set forth their parking requirements under the standards and pay for each space reduced at the time of application for the building permit. Thus all landowners within the PDO are eligible to reduce their parking provided through the previously described process.

Enforcement

Little specific discussion of this aspect was included in the ordinance. A statement that the "Planning and Development Department is hereby authorized and directed to enforce all provisions of that article" concludes the ordinance section. The established City development review process will enforce these provisions with non-compliance resulting in the withhold of building permits.

Monitoring

Because the city, with the funds contributed, has undertaken responsibility for the TSM efforts, no public monitoring program of private actions would be necessary when the option is selected. Fund contributions are required as a pre-condition to development approval when the option is chosen. Those not selecting this option must still comply with the 25 percent surface, 75 percent structured parking requirement within the HIDD.

IMPACTS

The ordinance has been passed too recently to have significant effect. The lengthy public process in developing the ordinance produced a consensus on the need for greater control of parking in Orlando. The growth management plan expressly recognized the importance of ridesharing, transit, and other TSM measures as complementary techniques to manage development. The new ordinance provisions place maximum limits on parking supply while helping institutionalize TSM actions.

REFERENCES

- Article XXIII, Section 57.247 of the Orlando City Zoning Ordinance.
- City of Orlando, Bureau of Planning and Zoning, "Technical Report No. 18, Downtown Parking Overlay District Ordinance," from the Orlando Urban and Core Area Growth Management Plan, Draft, February 1982.
- Brame, Don. City of Orlando Traffic Engineer. Interview, November 18, 1982.

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SCHAUMBURG, ILLINOIS

BACKGROUND

This village has transformed itself from a Chicago bedroom community of 800 residents in 1960 to a rapidly developing office and commercial center with a 1980 population of 53,000. Located in the northwestern Chicago suburbs approximately 25 miles from that city's central business district (CBD), Schaumburg has become increasingly active in seeking ways to reduce peak hour congestion and produce a mix of land uses that complement this goal.

The significant growth within Schaumburg has been focused upon the most dense employment location, the Greater Woodfield Regional Center. The process of identifying the transportation needs for the center resulted in the adoption of Schaumburg's TSM ordinance provisions. The center is emerging as the central business district of the northwest Chicago suburbs.

The major push for adoption of the ordinance came from the public sector. Village legislators have expressed sufficient interest in TSM actions to have proposed and adopted the Greater Woodfield Regional Center Transportation Plan. As part of the plan, an alternative modes implementation element has been formally adopted, including an ordinance implementation section.

The level of ridesharing and transit activity in Schaumburg is not high. As of May 1982, no public transit service was provided, vehicle occupancy rates are relatively low (1.15), and only several company-sponsored ridesharing programs exist.

The six-month ordinance implementation process produced no major roadblocks to implementation, partly due to the optional nature of the provisions. General private sector support for reductions in the amount of off-street parking required was expressed throughout the process. Given land values and construction costs, relatively small savings of \$2,500 per space were estimated for the region.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

Schaumburg's ordinance specified a wide range of TSM activity that landowner's could utilize to reduce their parking. The summary table of jurisdictions (Table 1,

Introduction to Case Studies) briefly overviews the specific actions for which parking requirements reductions will be granted.

The Schaumburg ordinance contains a section labeled "Shared Ride Programs." It permits reductions for listed TSM actions that can be shown by the landowner to reduce parking demand by the amount requested. A maximum 30 percent reduction is available for vanpooling or subscription bus service provided a village approved carpool program exists. Further, such actions as flex-time work policies, the provision of adequate lunch facilities on site, and preferential parking (presumably for HOV's) are all listed as desirable support strategies.

Carpool programs, if operated independently, may receive reductions of ten percent. If the program is part of a vanpool effort, a maximum of 30 percent is permitted. Such company programs require a specific coordinating person or department, an active matching service, and a company promotion effort that specifically targets new employees.

Reductions to the extent substantiated are also permitted for public transportation modes if service is provided within one-half mile of the location. A further 30 percent reduction for shared parking arrangements in mixed-use developments is available under the ordinance.

Applicability to Which Land Uses

These reductions are not limited to office or industrial uses although these uses clearly represent the greatest potential for reductions. In Schaumburg, any "building or complex" may qualify for the reductions, although such reductions are permitted only where building size exceeds 50,000 square feet.

Existing Requirements

Schaumburg's existing parking requirements are relatively high for offices, four spaces per 1,000 square feet of gross leasable floor area. For industrial land uses, the requirements are two spaces per 1,000 square feet.

Technical Support for Provisions

The modifications to the parking requirements section resulted from deficiencies in the existing and proposed road network. The transportation plan for the center set forth existing congestion problems and forecast extensive costs to expand traffic capacity capable of handling traffic generated by a projected near doubling of office and commercial uses. Increases from ten million square feet in 1980 to 18 million square feet in 1990 are projected. Employment of 50,000 was also projected for 1990 in Schaumburg's CBD. Based upon this analysis, the village adopted a combination street and highway improvement program and a ridesharing and public transportation program. Under the second program, the following implementation elements were established:

- . Ridesharing incentive ordinance
- . Transportation office established
- . Long distance vanpool and carpool program sponsored
- . Public transit service provided
- . Flex-time or staggered work hours implementation assistance.

Agreement Process

This implementation plan has been partially enacted with adoption of the ridesharing ordinance. The elements of the ordinance, previously described, specified reductions in an amendment to its zoning ordinance entitled "Adjustments to Required Parking." The amendment specifically contemplates use of the "variation procedure" without restriction to any special districts, to obtain the parking reductions. Since enactment of the amendment in May 1982, no landowners have taken advantage of the provisions.

Enforcement

Schaumburg anticipates enforcing the provisions by withholding use and occupancy permits or company business licenses when programs are "not being conducted as testified to the Zoning Board." All agreements require legal documents between the landowner and village which require additional parking to be built should

ridesharing efforts not comply. Additionally, landowner commitments shall be applicable to all successors in title and interest, and all tenants. The legal document, a covenant, must bind all successors in interest, and a notification provision of the requirements must be included in all leases between the landowner and his tenants. Such must be approved by the Planning Director.

Monitoring

To ensure the continued existence of the strategies adopted in exchange for the reductions a three part process was enacted. First, the total landowner transportation plan must receive Zoning Board approval. Then, a confirmation of the planned program's various elements must be submitted prior to receiving building occupancy approval. Third, an annual ridesharing report must be filed prior to issuance of a business license.

IMPACTS

Village staff attribute the lack of use of the ordinance to its newness and a depressed development market. Implementation of the ordinance did not produce lengthy debate or strong objection from the development community. Rather, public officials viewed implementation of the ordinance as a necessary pre-condition to more efficient use of existing highway networks and as an important method of ensuring more orderly development of new development within the region.

REFERENCES

- Greater Woodfield Regional Center Transportation Study, Schaumburg, Illinois (May, 1982)
- National Ridesharing Conference, "Transportation and Development" paper presented at Zoning and Ridesharing Session by Kenneth E. Dallmeyer, Chicago, Illinois, 1982.

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SEATTLE, WASHINGTON

BACKGROUND

The Seattle-Tacoma-Everett metropolitan area contains over 2,000,000 inhabitants. The City of Seattle is located at the center of this area, and although the city's residential population has stabilized at around 490,000, the central business district (CBD) continues to grow at a brisk rate. New office construction in the CBD should increase downtown employment 25 percent by 1990, bringing the total CBD work force to 150,000.

The area's transportation system is physically constrained by large bodies of water. The projected employment growth for the region will severely stress several key highway corridors. This has led the region to endorse and to implement a strong set of TSM measures. The level of ridesharing and transit use for commuting is high in the region. Over 50 percent of CBD bound commuters use transit or rideshare.

The City of Seattle's practice of requiring TSM actions as a condition of development approval stems from legislative mandates. First, in response to the federal Clean Air Act, Seattle adopted in 1975 a set of Downtown Parking Policies which clearly encouraged alternatives to single occupant vehicles. The policies resulted in a new parking code which abolished the minimum parking requirement and set a limit on the amount of accessory parking permitted in the CBD.

Second, in 1978 Seattle adopted a set of environmental review policies which permitted the executive branch to require developers to encourage ridesharing to mitigate the adverse traffic impacts of such new development. In 1979, this authority was exercised for the first time on a large office project whose proposed parking supply fell far short of projected demand. Since then, ridesharing conditions have been placed on approximately 14 CBD office projects.

Implementation of the TSM requirements has been a problem. Opposition has grown over the past two years in the private sector. Several developers have not complied in good faith with the conditions, and extensive monitoring is needed. The city is now working on ways to revise the requirements and to refine their application.

NATURE OF TSM ACTIONS

Seattle's current TSM actions are mandatory requirements formulated from an environmental review of each proposal and applied at the building permit stage of the development process.

Applicability to Which Land Uses

The TSM requirements apply to any new development or major redevelopment in downtown Seattle where adverse traffic impacts are identified. Technically, this means any land use in the CBD is subject to the requirements. However, experience demonstrates that only office or large mixed-use projects have produced impacts of a magnitude that trigger the need for TSM conditions on the building permit.

Existing Parking Requirements

In accordance with Seattle's policy to constrain parking supply in the CBD, the parking code sets a maximum instead of a minimum accessory parking requirement. The maximum is one space per 1,500 gross square feet of floor area. There is no minimum.

Technical Support For Provisions

When the environmental review of a project has identified that adverse traffic and parking impacts will result, a set of transit/ridesharing conditions is attached to the building permit. The transit/ridesharing conditions include:

1. Designating an employee transportation coordinator
2. Posting a transit/ridesharing information center in the lobby of the building
3. Holding a transit/ridesharing information day twice a year
4. Setting aside parking space for exclusive use by carpools and vanpools. Exclusive use is defined as not leasing the carpool spaces on a long term basis to anyone other than a carpool or vanpool. If all carpool spaces cannot be rented to carpools, then the balance of space can be made available for short term parking only at the higher daily parking rate.

Mixed use projects with substantial numbers of condominium units are required to:

1. Distribute transit ridesharing information to tenants; and
2. Subsidize free transit passes to residents for one month to introduce tenants to the transit system.

Agreement Process

As had been previously mentioned, the state environmental statute empowers the city to impose TSM conditions by withholding building permits. The key component of the TSM requirement process is the carpool parking set-aside. The set-aside is used to ensure that, on paper, each proposal meets its auto person trip demand on the site. For example, a proposal which results in a 30-space, long term parking shortfall would have to set-aside enough carpool spaces, at the higher auto occupancy of 3.4 per vehicle, to account for those 30 (approximately 15 carpool spaces). The average carpool parking set-aside requirement for 14 CBD office projects is 190 carpool spaces.

Some developers have preferred to place less reliance on the carpool parking set-aside. In these cases the city is open to negotiate other incentive measures that the developer could provide such as vanpools and transit pass subsidies. Thus far only the vanpool option has been selected and negotiated.

Enforcement

Seattle has relied on the Certificate of Occupancy as its major enforcement tool. The city's position has been that all the components of the TSM program need to be in place before the final approval is given to occupy the building. Typically, implementation is verified in a Memorandum of Agreement which spells out the details and responsibilities of each party regarding the TSM program. The signatories to the Memorandum include the developer, the building manager or garage operator, the local ridesharing agency, and the City of Seattle.

Monitoring

The local ridesharing agency is charged with monitoring the progress of the TSM program. Reports on the utilization of the carpool parking set-aside spaces are received quarterly.

Twelve months after the project reaches 80 percent occupancy, the ridesharing agency must report to the city the results of the program. The city then may decide to continue, revise, or abolish the TSM requirements.

IMPACTS

Opposition to the requirements, especially the carpool parking set-aside, has grown among developers and building owners. Only one to two percent of the set-aside spaces are being used by certified carpools. This lack of utilization is the result of developer non-compliance in implementing the TSM conditions, high parking rates in the new buildings, and the availability of low cost on-street carpool parking spaces managed by the city which compete with the developer's spaces.

Seattle is in the process of revising its TSM requirements for CBD development in order to reduce some of the problems noted above. As proposed, the carpool parking set-aside will be replaced with a requirement that carpools be granted at least a 30 percent reduction in monthly parking rates. The special rate would apply to an established maximum number of spaces. The rationale behind this new approach is that the price break will act as a more direct incentive for commuters to change mode as the city managed carpool parking program has demonstrated. The new approach will also help alleviate the current problems of compliance and monitoring as violations will be more easily identified.

Seattle is also incorporating TSM requirements into new zoning code revisions. The first of these revisions is for major institutions (e.g. colleges and hospitals) located in the city. The code is in the final stages of review by the City Council. It establishes a performance standard for the institutions, preventing more than 50 percent of the employees on the largest shift from commuting by single occupant vehicle. A transportation management plan is also required of each institution when new development is proposed. The plan must demonstrate the measures the institution will employ to achieve the goal. Enforcement would be accomplished by withholding approval for any future expansion until the goal is met.

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PLACER COUNTY, CALIFORNIA

BACKGROUND

The four jurisdictions within the County of Placer, which is located approximately 15 miles northeast of Sacramento, separately approved similar ordinances designed to encourage TSM measures at new land developments. These jurisdictions, the Cities of Roseville, Rocklin, Lincoln and Placer County, in part elected to pursue this method of growth control to ensure the construction of a key link in the California highway system, the Highway 65 Bypass. Highway officials feared that demand for traffic capacity along the county portion of the link was growing so rapidly that by completion, peak period capacity would have been exceeded. The mandatory requirements within the ordinance aimed at increasing the level of HOV commuting were enacted primarily in response to the possibility that a vitally needed transportation artery would not be constructed without local guarantees of growth control.

The (ordinance development) process began two years ago, in part as a response to air pollution guidelines in the Sacramento region. The South Placer Policy Committee, composed of elected officials of the four jurisdictions, helped develop a policy plan on TSM for the approval of the California Transportation Commission. Twenty percent reductions for smaller employment sites and 30 percent for large were set as realistic goals. Developers, employers, county officials, and legislators negotiated over acceptable reductions in single occupant vehicle commuting. Relatively low ridesharing percentages and only limited public transit service make the projected 20 or 30 percent trip generation rate reductions appear ambitious.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

Placer County adopted a Ridesharing ordinance section within the Roads and Traffic portion of its local code in May 1982. The ordinance uses a two part approach by first mandating general requirements for all employers and then imposing a transportation plan of TSM strategies upon all new development. Under the general criteria, requirements vary by employer size. For employers with at least ten

employees, the following incentives are required:

- Posting information from the South Placer Transportation Coordinator on mass transit schedules, fares, etc.; a bike route map; and ridesharing promotional literature
- Annual dissemination of information on the areawide rideshare matching system.

When company size exceeds 49 employees, but is less than 200 "at one common location", the employer shall "voluntarily be subject" to the following mandates:

- meet requirements above for 10 to 49-employee locations
- designate a rideshare coordinator with specific duties
- establish preferential HOV and bicycle parking spaces and pricing policies.

For new development, the transportation plan mandates more rigorous requirements. A plan is "voluntarily submitted" for every "conditional use permit or commercial industrial building permit or environmental review" that employs from 50 to 200 employees at one location. The plan must include the following:

- a description of the land use activity and its operating characteristics
- an employee commuting characteristics profile
- a listing of mitigation measures designed to increase HOV commuting (employers with over 49 employees must achieve 20 percent reduction in vehicle trips) like:
 - 1) HOV subsidies
 - 2) HOV parking or vanpool operating subsidies
 - 3) Provision on HOV amenities and support measures such as bike lockers, showers, and transit shelters
 - 4) Vanpool program support

An even greater requirement exists for employers with more than 200 employees. All measures listed above plus a 30 percent trip reduction methodology must be attained. The ordinance further instructed the Department of Public Works to develop a guidebook on HOV measures of effectiveness to guide landowners in estimating ridesharing trip generation reductions.

Applicability to Which Land Uses

Unlike TSM zoning control efforts in most jurisdictions, the requirements in Placer County are not limited to office or industrial land uses. The first requirements,

previously, apply to all employers in the jurisdiction. The second part is applicable to all commercial development in the jurisdiction or other uses requiring an environmental review under California's Environmental Quality Act. The transportation plan must be submitted to complete the review process for a conditional use, commercial industrial, or environmental review without which building cannot commence. Thus, the transportation mitigation measures must be specified as a pre-condition to receipt of approval to develop a broad range of land uses within the county.

Existing Requirements

Requirements vary greatly by jurisdiction. Office requirements vary from two to four spaces per 1,000 square feet. Modifications to the existing ordinance assures one parking space per employee as the average standard applicable within the region.

Technical Support for Provisions

The Ordinance charges the Department of Public Works with developing a technical guidebook to assist employers in "developing and managing their transportation plan." The Transportation Plan must be reviewed by the South Placer Transportation Coordinator who can offer assistance in plan refinement and development. The ordinance envisions a Transportation Coordinator operating in the county as a key component of the controls. A coordinator office has begun operation with a \$60,000 budget. UMTA supplied 80 percent of those funds, the jurisdictions supplied the remaining 20 percent or \$12,000.

Agreement Process

The trip-generation reduction measures specified in the transportation plan become conditions of approval for development applications within the county. Because of the mandatory rather than optional nature of the Placer County requirements, the specifications must be detailed in the transportation plan before development approval is granted. For employers, a range of actions must be taken depending upon employment size.

The Ordinance, Section 16-935(g), does permit reductions in the amount of off-street parking provided commensurate with the trip reduction level specified in the transportation plan. Parking minimums in the county are also maximums as this section presents construction of more parking spaces than permitted. This reduction benefit is not available to smaller employers or development sites that would have only voluntary requirements.

Enforcement

This ordinance stipulates a comprehensive range of legal methods to ensure compliance with the mandates of the law. Section 16-945, Compliance with Requirements, sets forth penalties for noncompliance. Should the site violate the terms of the transportation plan, the landowner has 60 days to provide an alternative plan to achieve the plan's original goals within 12 months. If the alternative plan fails and it is determined that more time will allow goals to be met, an additional year to bring the site into compliance with the plan may be granted by the Director of Public Works.

Each jurisdiction now requires those developments taking a parking reduction to set aside land for parking, if needed, commensurate with the reduction granted.

Failure to meet the Public Works Director's requirements shall result in the following:

- 1) Citation for a criminal penalty - misdemeanor
- 2) Referred to the Planning Commission or other legislative body for rehearing or revocation of development approval
- 3) Imposition of a \$500 a day civil penalty until conditions are met

All monetary payments are distributed to the Placer County Road Fund.

Monitoring

The Ordinance specifies a vigorous approach to periodic review of the TSM trip reduction measures. Section 16.940, Reporting Requirements, requires an annual submission to the County Transportation Coordinator that describes the mandatory transportation program imposed under Section 16.935. Employers with less than 200 employees or existing employers who expand their Baseline Employment by less than 20 percent shall voluntarily submit a report.

Section 16.945 mandates that the Transportation Coordinator review compliance additionally with on-site facility spot checks. Non-compliance notification will be made by the Department of Public Works. Additionally the Department of Public Works, in coordination with the Transportation Coordinator, must monitor implementation of TSM efforts. Monitoring has been specifically defined by the Ordinance as:

- 1) Section 16.935 reporting procedures
- 2) periodic on-site checks at the facility
- 3) annual review of compliance with the conditions of the development approval permit

IMPACTS

Thus far, no new development to which the new provision applies has begun. A new Transportation Coordinator began her duties in October 1982, and the new highway bypass with Interstate 80 has received preliminary approval. Additional sections requiring a land set-aside equal to the parking space reduction from reduced vehicle trips are being considered for implementation.

REFERENCES

- An Ordinance Amending Placer County Code, 1967, Chapter 16 on Roads and Traffic, adding Article III - Ridesharing (25 May 1982)
- South Placer Policy Committee, "Revised Draft Report to the California Transportation Commission," (14 May 1982).
- White, Lynne. Placer County Transportation Coordinator. Interview, 29 November 1982.

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SACRAMENTO, CALIFORNIA

BACKGROUND

Sacramento is a middle sized urban area that has become a very attractive location for companies relocating west. Sacramento has the advantage of being a "Sunbelt" city without the massive traffic congestion and urban complexity of the Bay area or Los Angeles.

Public concerns over air quality, increasing traffic congestion, and an impending central business district (CBD) parking problem led the city to develop and adopt in 1981 a CBD TSM parking code. The objective of the code, which is the focus of this case study, is to increase transit mode split in the CBD above the current eight percent and to significantly increase ridesharing among the CBD work force.

Not satisfied with the optional nature of its current TSM parking code, city staff has developed a mandatory transportation management and parking reduction code that would apply city-wide. The new proposal has been developed jointly with Sacramento County. Both jurisdictions have been conducting public review of the proposals since January, 1982 to which strong development community opposition has surfaced. An outline of the proposed mandatory TSM code is provided in the "Impacts" section of this study, which existing provisions are discussed below.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

The code provides two alternatives to the minimum on-site accessory parking requirement for the CBD. First, the parking requirement may be met by providing off-site parking which, if more than one-fourth mile from the building, would have to be served by a developer provided shuttle.

Secondly, up to 60 percent of the required parking for new developments and up to 100 percent for office expansions and conversions can be met by following one or more of the following of measures:

1. Bicycle Parking Facilities - up to five percent of the parking requirement may be met by providing bicycle parking facilities at a ratio of four parking spaces for every one required off-street vehicle parking space.

2. Carpool/Vanpool Spaces - up to 15 percent of the parking requirement may be met by designating parking spaces for carpools and vanpools and by working with Caltrans to provide tenants with information on transit and ridesharing options. A designated carpool space substitutes for 2.5 vehicle parking spaces required.
3. Transit Pass Fee - up to 60 percent of the parking requirement may be met by purchase of transit passes. The vehicle parking requirement is reduced by one for each transit pass purchased for a 25-year period.

The applicant may choose a full, one time payment of the 25-year cost of a pass (about \$7,500), or payment may be made annually to Sacramento Regional Transit (RT) with escalations every five years. In each case, RT forwards the passes on a monthly basis to the building manager who may disburse or dispose of them as desired.

Applicability to Which Land Uses

Sacramento's in lieu parking ordinance at present applies only to office uses in the CBD. A proposal to expand it to the rest of Sacramento and include other uses is currently before city and county legislative bodies.

Existing Requirements

Office uses in the CBD have a minimum auto parking requirement of 1.67 spaces per 1,000 gross square feet and a maximum of two spaces per 1,000 square feet. There is also a bicycle parking requirement of one for every ten off-street parking spaces.

Technical Support for Provisions

Parking substitution rates for the various TSM measures were calculated from assumed van and carpool occupancies and parking space turnover information.

Agreement Process

The in lieu parking reductions are permitted by way of a Special Permit issued by the City Planning Commission upon review of the applicant's proposal. The Commission may grant a Special Permit reduction for the measures cited above or for

any other proposal that is found to adequately meet the transportation needs of the building.

Enforcement

Enforcement of carpool and bicycle provisions requires visual verification that carpool stalls are marked and bicycle facilities installed before issuing an occupancy permit. The one time transit fee must be paid before a building permit is issued.

All Special Permits are exceptions to regular zoning requirements and run with the land as conditions on the title. Individual elements may be found with contractual agreements.

Monitoring

No specific measures have been proposed for monitoring the designated carpool spaces or bicycle facilities. Annual payments of the transit pass fee would be monitored by RT.

IMPACTS

Since the CBD in lieu ordinance became law in the summer of 1981, six major office projects have been approved which could have taken advantage of the parking reduction measures. Three of the six developments elected to do so. Two developments opted for the transit pass fee alone. The other development is combining the carpool parking and transit pass fee options. Staff indicates that these three developments took advantage of the reductions because they had no other choice due to lack of available land for parking. All the projects are currently under construction, so no information is available on implementation or effectiveness.

The City and County of Sacramento have drafted and are now reviewing a mandatory TSM trip reduction ordinance that would apply to all new development in the city and county. Minor developments of 50 to 200 employees would be required as a condition of any land use approval to:

1. Post ridesharing and transit information in a conspicuous place

2. Appoint a transportation coordinator
3. Designate 15 percent of the parking spaces provided for "carpool/vanpool" use only.

Major development projects accommodating 200 or more employees would be required to obtain a Special Permit. Issuance of the Special Permit would be contingent upon approval of a Transportation Management Plan demonstrating how a landowner would achieve a 30 percent reduction in the number of vehicle trips that would otherwise occur if the customary proportion of peak period trips were made in single occupant vehicles. A range of trip reduction measures are recommended as elements for the plans (see Figure 1).

Depending upon the trip reduction measures selected by the developer and included in the Transportation Management Plan, the minimum parking requirement may be reduced generally by 15 percent for office and industrial uses 10 percent for hospitals and commercial development, and five percent for warehouse uses. Staff would analyze the Transportation Management Plan and determine the appropriate reduction.

Compliance and enforcement issues are addressed with several measures: annual reports, specification of the implementation timing of specific measures, notice to tenants of the availability of incentives, written agreements recorded as covenants on the property, and the right of the city as well as tenants to bring court action for non-compliance.

The development community generally opposes the proposed code. Staff is currently pessimistic about rapid implementation of the new proposals in their present form, but has confidence that constructive compromises will occur.

REFERENCES

- . Patterson, Sheryl. City of Sacramento Planner. Interviews, August 1981 and November 1982.
- . Hutchings, Tom. Sacramento County Transportation Planner. Interview, November 1982.

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BELLEVUE, WASHINGTON

BACKGROUND

The City of Bellevue (population 75,000) typifies the transformation of many suburban communities close to major cities into small urban centers. By 1980, Bellevue had become a net "importer" of jobs with the total daytime labor force exceeding the number of residents leaving to work outside of the city.

The city has decided to actively encourage this trend. In 1981, the City Council sought to increase the density of its CBD by permitting midrise office and condominium development. As a result of this action, CBD employment is expected to increase from 12,000 to 24,000 by 1990.

The anticipated new development represents a major change for a downtown area that remains auto dominated at present. Pedestrian amenities are few, peak hour auto occupancy is a low 1.15, and there is only a four percent transit mode split. The city subsequently concluded that intensification of the CBD could not take place without concurrent changes in transportation mode choice. Therefore changes in the parking code of phased reductions in the required supply of accessory parking were proposed. Developers were thus encouraged to promote ridesharing by granting further parking reductions below the minimum in return for organized carpool/transit programs.

The changes to the CBD land use code took approximately one year to enact. Support for the parking element of the code was widespread among the development community and public agencies including Metro, the local transit authority.

Implementation of the new code sparked a flurry of building activity in the CBD. All of the developers took advantage of the overall reduction in required parking, but none proposed a carpool/transit program to reduce their parking supply below the minimum. Thus, Bellevue, like Seattle, invoked its authority under the State Environmental Policy Act (SEPA) to require developers to encourage ridesharing and transit.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

TSM actions are present at two points in the Bellevue land use regulation process. First, the zoning code authorizes the Planning Director to reduce, by not more than 50 percent, the parking requirements for any land use upon demonstration of an effective alternative transportation program. Possible elements of the alternative programs are detailed by Figure 1 in the case study introduction.

Second, environmental authority requires each developer, regardless of parking supply provided, to follow the guidelines below as a pre-condition to issuance of a building permit:

1. To dedicate a minimum of 20 hours of building management time per month to coordinate and promote transit and high occupancy vehicle usage
2. To inform tenants through the leasing process of the availability of transit and ridesharing services and information
3. To locate a transit/ridesharing information center in the lobby of the building
4. To use best efforts to achieve a ridesharing goal of 35 percent (exclusive of transit) within 24 months after issuance of the Certificate of Occupancy.

Applicability to Which Land Uses

The parking space reductions are permitted for any land use in the CBD. TSM action requirements as a result of the environmental review and building permit process have been applied only to large office developments.

Although most TSM activity has been confined to the CBD, similar transit/ridesharing requirements have been written into large planned unit developments (PUD) and the rezoning of major parcels outside the CBD selectively.

Existing Requirements

For office uses in the CBD, there are both maximum and minimum parking requirements. The maximum is three spaces per 1,000 net square feet and the minimum is two spaces per 1,000 square feet. The maximum and minimum are scheduled to be reduced in phases by 0.3 spaces per 1,000 square feet down to a minimum of zero and a maximum of one by 1997.

Outside the CBD the requirement is five spaces per 1,000 square feet except for the PUDS and rezonings where the supply has been reduced to between three and four spaces per 1,000 square feet.

Technical Support for Provisions

Bellevue conducted an inventory of land uses with potential for development in 1979 and then subsequently commissioned a long range transportation study. This planning effort concluded that for the CBD, ridesharing and transit must account for 35 percent and 19 percent respectively of all work trips by 1990 in order to maintain an acceptable level of service on the CBD street system.

Agreement Process

The negotiation of TSM actions to be attached to the building permit are made individually. However, it is widely recognized that a precedent has been set with the first office buildings. All TSM provisions of CBD building permits now follow the pattern described above.

For developments outside of the CBD, negotiation is on a case-by-case basis with a few examples of successful employer ridesharing programs in outlying areas serving as a rough standard.

Enforcement

Bellevue's objective in using environmental review authority to condition building permits is to ensure that there is no overflow of parking generated by the development. This is particularly important because there is no on-street parking permitted in the CBD, and downtown retail activity needs sufficient short-term parking to survive. Each building permit, therefore, requires a developer agreement that, if employee parking demand exceeds supply, a transportation plan must be developed and submitted to the Directors of Planning and Public Works. The Directors may require expenditures by the developer or building owner equal to \$63,000 for each 0.1 spaces per 1,000 square feet by which utilization exceeds supply, up to a maximum of \$475,000 per project.

The expenditure requirements are based upon estimates of purchasing and operating commuter vans to absorb the parking overflow.

Monitoring

Twenty-four months after the Certificate of Occupancy is issued for a new building, the applicant or building owner must submit to the city a report outlining the commute modes and parking demand of building employees.

IMPACTS

No developer has taken advantage of the zoning code provision permitting a reduction in the minimum parking requirement for a ridesharing program. The prevailing opinion is that the current minimum (two spaces per 1,000 square feet) is below the market demand perceived by developers of about 2.5 spaces per 1,000 square feet.

The language and specific requirements which now appear on the building permits was the result of long and rigorous negotiations. The city initially sought specific TSM program commitments from the developers (e.g., vanpools purchased, inverted parking rates, subsidies, etc.). The developers resisted making specific commitments beyond an employee transportation coordinator and the provision of ridesharing information. The developers also sought an expenditure maximum under such requirements.

It is still too early to assess the effectiveness of the TSM requirements imposed through the building permit process. Three of the six major developments should be occupied during 1983. One development, however, which preceded the new code and contained some specific TSM requirements, has been occupied for a year. Through a combination of parking charges, subsidies for non-HOV travel, and vanpool vehicle provision, that site has achieved a 48 percent transit/ridesharing mode split.

The mismatch between the CBD zoning code which permits a ridesharing option and the use of environmental review which requires a TSM/ridesharing program is currently being analyzed. Proposals will probably be made to alter the zoning code to better reflect the development realities in the CBD. Bellevue is also beginning to study how to apply TSM requirements more consistently outside of the CBD.

REFERENCES

- Bellevue Long Range Transportation System Planning Study, Bellevue, Washington, (May, 1982).
- ITE District 6 Annual Meeting, "The City of Bellevue Emerging Program for Transportation Management," paper presented by Lloyd Warren, Salt Lake City, Utah, 1982.

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MONTGOMERY COUNTY, MARYLAND

BACKGROUND

Montgomery County is located in the Washington Metropolitan area to the northwest of the District of Columbia. It is a rapidly urbanizing suburban county containing somewhat less than 580,000 people and somewhat more than 300,000 employees. While many county residents are employed in the regional core in the District of Columbia, the county is not a bedroom suburb; there are several major employment centers and the majority of county residents who work, work in the county. The county has been experiencing high rates of employment growth and new office construction. Local and regional forecasts show a strong continuation of that trend.

Montgomery County has been undergoing major changes in its transportation system to keep pace with development expansion. It will soon be served by two rail lines and is expanding its own extensive "Ride-On" bus service. A demonstration program involving a personalized ridesharing program "Share-a-Ride" has proved to be very successful in one of the major employment centers and is being expanded using county funds.

The county began thinking about ways to use the parking code to foster ridesharing and transit several years ago, and is now taking TSM-related parking code proposals through the political decision process. A major study was undertaken in 1981-82 to examine parking policies related to the zoning ordinance and develop the basis for changes to the code. Recommendations for amendments to the zoning ordinance are made by the Planning Board and adopted by the County Council. Current proposals involve the granting of parking reductions for commitments to actively participate in Share-a-Ride and additional reductions for more aggressive employer sponsored programs. Reductions for shared parking are being considered as well as modifications to the existing reductions around transit stations. Only the ridesharing provisions are discussed here.

NATURE OF TSM ACTIONS SPECIFIED IN CODE

Although no revisions to the county's parking code have been approved as yet, the staff and Planning Board are well along in determining the approach. The ridesharing provision will permit a reduction of up to ten percent in required spaces for office and industrial uses if the landowner agrees to have tenants participate in Share-a-Ride. There may be some restrictions on building size and type of tenant. An additional ten percent may be allowed for an employer who makes a commitment to a more aggressive program involving vanpools or buspools. This commitment would involve establishing a performance standard of either number of participants or a measure of auto occupancy.

It is proposed to assess a fee, where such parking reductions are granted, which will be available for Share-a-Ride to implement the ridesharing programs in conjunction with the employers. This fee may take the form of an ad valorem tax on property values, which should make it somewhat proportional to the cost savings offered developers. The fee will probably be no more than one third of the annualized savings in reduced parking construction costs, so that there is still a significant economic incentive to the developer to take advantage of the provisions. The landowner or employer must designate an ETC and agree to allow Share-a-Ride to work with employees in ride matching. A land set-aside and/or performance bond may be required for employers taking the additional ten percent reduction for their own program.

Existing Requirements

The current minimum requirement for office uses is two spaces per 1,000 gross square feet (GSF). This is considerably lower than actual parking demand at most office buildings outside Montgomery County's CBD's. Therefore, a prerequisite to approving a set of reductions for ridesharing is to raise the office parking requirement, most likely to three spaces per 1,000 GSF. Lower requirements will apply to developments in the CBD's. The industrial requirement is one space per 1.5 employees.

Technical Support for Provisions

The provisions for ridesharing are being based on a thorough examination of parking policies related to the zoning ordinance. Parking demands and travel behavior data were collected for numerous office sites around the county and Washington metropolitan area. The results were compared with the level of ridesharing programs in effect at the sites. Substantial information was also available from experience with Share-a-Ride participation.

Agreement Process

It is being proposed that the site plan review process be used as the method for County approval of specific developer requests for parking reductions. Specific provisions and requirements of the ridesharing commitment will be contained in the zoning ordinance, and the developer's commitment will be documented along with other required submittals for site plan review.

Enforcement

Enforcement has been a major concern of staff and the Planning Board. Although it is felt that there will be little problem with enforcement of the initial ten percent reduction with participation in Share-a-Ride, there is concern that additional employer-sponsored programs may be subject to some uncertainty as to whether they will achieve ridesharing goals and be continued in perpetuity. This is the reason for introducing land set-aside or performance bond requirements for such actions. In addition, a tax penalty or fine may be imposed for failure to hold to the original commitment.

Monitoring

Because of Share-a-Ride's involvement in the actual ridesharing program, monitoring will occur naturally. For any employers making additional commitments, monitoring will be done by the county in the form of periodic checks on employee

participation, employer records, auto occupancy and/or parking demand. Employers not fulfilling their commitment would be given a warning and a chance to improve the program before any enforcement action is taken, and enforcement action may not be taken if the spaces supplied are still adequate to accommodate parking demand.

IMPACTS

No experience has yet been obtained. It is expected, however, that most of the activity will involve the reductions based on participation in Share-a-Ride, since this alleviates the private sector of much of the cost and management burden of running a ridesharing program, and gives the County more control and assurance that the programs will be enacted.

REFERENCES

- Section 59-E, Montgomery County Zoning Ordinance
- JHK & Associates, Parking Policies Study for Montgomery County, Maryland, 3 Volumes, April-November, 1982.
- Hekimian, Alex, and William Hershey, "Personalized Approach for Ridesharing Projects: Experience of Share-a-Ride in Silver Spring, Maryland, 60th Annual TRB Meeting, 1981.

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LOS ANGELES, CALIFORNIA

BACKGROUND

Los Angeles, the nation's third largest city, has studied methods of permitting certain land uses to reduce the number of off-street parking spaces required for more than five years. The study began initially due to Clean Air Act mandates regarding mobile source pollution. The established link between parking, the automobile, and pollution resulted in the formulation of a joint private and public sector Parking Management Steering Committee. This committee produced recommendations regarding seven parking management measures designed to help encourage voluntary reductions in the supply of off-street parking. With those 1977 recommendations as a foundation for future work, city planning staff consulted with private developers to develop an ordinance that would permit such reductions, especially in proximity to high density centers. Staff also produced a handbook designed for the assessment of parking demand at a site.

Of the seven parking management proposals, the following five were detailed in a one year study begun in 1980 by the Los Angeles DOT, Planning Department, and Office of the Mayor:

- . Employee Incentives
- . HOV Parking
- . Parking Substitution (remote parking)
- . City Transportation Services
- . City Employee Incentives.

Developers have exhibited significant interest in any method to save on parking supply as the cost of parking spaces has been estimated as high as \$20,000 per space in high density (Los Angeles) employment locations. In March 1983, the City Council approved a reduction methodology.

Due to the heavy reliance upon automobile commuting and the lack of rail transit in so large an urban area, measures to control parking in Los Angeles take on an even greater importance than in other U.S. cities. Despite the existence of one of the largest areawide ridesharing agencies in the country, Commuter Computer, auto

occupancy levels and ridesharing participation rates vary little from the national norm of approximately 19 percent.^{1/} Additionally, approximately five percent of the residents of Los Angeles use transit for their commuter work trip.

NATURE OF TSM ACTIONS SPECIFIED

The ordinance amended Section 12.27 to permit reductions for commercial or industrial buildings in C or M zones with a minimum of 100 employees on the largest work shift. A parking management plan must demonstrate that sufficient on-site parking spaces and "transportation alternatives to single occupant automobiles (including carpools, vanpools, mass transit systems, buses, or bicycles)" are provided by the owner or lessee.

Another option, a 25 percent reduction in on-site parking supply when remote off-street parking and a shuttle service is provided, is also available. Finally, an agreement will be permitted only when the landowner permits recordation of a covenant running with the land for the benefit of the city which specifies that, should the parking reductions agreed to not be achieved, the additional parking will be built. Although not specified in the ordinance, it is assumed that the percentage reduction granted shall be comensurate with a projected level of demand reduced.

Applicability to Which Land Uses

As the proposed ordinance specified, such reductions are only permitted in commercial or industrial zones. But these zones in Los Angeles cover a significant portion of the CBD and other areas where comprehensive planning documents specify that high density development should be channeled.

Existing Requirements

Currently the city requires two spaces per 1,000 square feet of office and industrial land uses. In the city's CBD, only one space per 1,000 square feet is required for offices.

^{1/} 1980 census figures.

Technical Support for Provisions

The August 1981 Parking Management Program Background Research Report is a very comprehensive review of parking demand issues in a large urban area. Information on major employer alternative transportation programs that have reduced parking demand and some site specific parking demand data from the Los Angeles area were presented.

For ridesharing, an unpublished 1979 Transportation Research Board study was cited to support findings that companies with strong ridesharing programs having less than 1,000 employees average 44 percent ridesharing. Those between 1,000 and 10,000 employees average 34 percent; those with over 10,000 employees average 40 percent.

The Planning Department also conducted surveys of commercial office and industrial parking demand in high density employment areas. A total of four on-site surveys, three office and one industrial, were completed. They sought to provide information, which was used in the compilation of a parking demand assessment handbook, from which models could be developed to refine the applicability of certain parking management measures to selected work locations.

The surveys obtained the following information from work sites:

- 1) Code required spaces (varied by when building constructed)
- 2) Parking demand
- 3) Alternative transportation modes available to the site
- 4) Estimate of maximum alternative transportation mode use

The results of one site study revealed that parking demand at a CBD location far exceeded city code requirements. In fact, 75 percent of the site's employees would have to have used some form of ridesharing to avoid spillover parking effects. Therefore, for similar sites with these code requirements and employee densities, such code provisions would have little attractiveness unless minimums were raised.

Agreement Process

The city has created a separate section in its zoning code called "Parking Requirements for Commercial or Industrial Uses with Parking Management Alternatives." Thus a development applicant would have to submit a parking management plan showing how the parking demand reductions at the site would be achieved.

Enforcement

The principal legal enforcement tool presently contemplated under the proposed ordinance is the covenant. Such an agreement, running with the land, may be enforced by an action at law for damages. Prior to seeking damages through legal action, the city has retained authority to require the construction or supply of additional parking spaces up to code-required minimums. Should a landowner fail to achieve the reductions specified, a show-cause hearing is held at which the landowner must present evidence as to why the authorization should not be revoked or parking developed on or off-site.

Monitoring

An annual reporting by the employer shall be submitted, and the property will be subject to annual recertification by the Zoning Administrator. Additional measures may be required by the administrator and upon review, if the administrator is not satisfied with the annual report, a show cause hearing will be scheduled.

IMPACTS

Because the ordinance is still under review, no measurable effect of such provisions on development in Los Angeles is yet available. As the one site survey revealed, however, existing parking requirements in Los Angeles are already low. Developers provide more parking than the code requires. Therefore, the natural incentive to seek reductions that arise from a high minimum requirement does not currently exist in the city. Without such, it seems unlikely that the reductions will be much utilized, especially with an additional requirement that such off-site parking space must be maintained as insurance against less than projected parking demand reduction.

REFERENCES

- Council File No. 74-5535 S-4B, Proposed Ordinance Amending Sections 12.03 and 12.24-C of the L.A. Municipal Code Pertaining to the Creation of a Conditional Use Category to Encourage the Use of Alternative Means of Transportation by Allowing Reduced Off-Street Parking Requirements for Commercial and Industrial Developments, (18 March 1982).
- City of Los Angeles, "Parking Management Program Background Research Report", August 1981.
- City of Los Angeles, "Parking Management Plan" 1977.
- Miller, Gerald, Parking Zoning Changes to Encourage Ridesharing Presentation to TRB 61st meeting, January 1982.

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V. MODEL PARKING CODE

SECTION I. OVERVIEW OF THE MODEL PARKING CODE

The model parking code contains the following key Articles:

Findings and Purposes - this section sets forth the reasons behind enactment of the ordinance. Should any legal test of the validity of ordinance provisions occur, this section is crucial in guiding judicial interpretation.

Definitions of terms - A glossary of key terminology.

Parking Requirements Reduction Alternatives - the types of TSM actions which can be used, as well as the associated parking reductions. There are three alternative approaches offered:

1. Basic Incentives Option - permits a relatively small reduction in parking (10%) for landowners or employers providing several basic TSM incentives (primarily ridesharing related). The 10 percent allowable reduction is based on the typical effectiveness of small to moderate scale employer-based ridesharing and transit promotion efforts.
2. Trust Fund Option - permits a larger reduction in parking (15%) for a landowner who makes a one-time monetary contribution to a TSM trust fund. The trust fund would be administered by the public agency and used to implement TSM actions at participating sites. This approach still requires employer participation and cooperation, but the more time-consuming tasks (e.g., contacting individual employees, setting up vanpooling programs, coordinating surveys) are borne by personnel from the public agency. Public agency staff time is fully or partially financed from the trust fund.

The 15 percent parking reduction is slightly higher than the 10 percent reduction allowed for the Incentives Option approach because the public agency has more control over the type and operation of ridesharing and transit incentives employed and has additional funds to implement them. The public agency may also be able to or know how to more effectively implement certain actions than some developers, landowners or employers. A jurisdiction may wish to alter this reduction level in accordance with their own local objectives.

3. Performance Standard Option - permits a larger reduction (30%) when a landowner commits to a transportation management program with more comprehensive TSM actions. Parking reductions are commensurate with expected increases in transit ridership and auto occupancy. The landowner is required to submit a Transportation Management Plan, specifying the techniques to be used and how that justifies the reduction in parking requested.

The maximum 30 percent reduction is based on the success of a growing number of employers in inducing their employees to rideshare or take public transit. Although higher reductions have been achieved (occasionally 50 percent or more), the reduction was held to 30 percent in

recognition of the greater possibility of not sustaining such a reduction over the long term or when property is sold. Again, jurisdictions may make their own selection of parking reduction levels. In essence, the selection of any pertinent reduction is a policy decision, with lower percentages usually selected where it is desired to minimize the risk of parking shortages while sacrificing some of the code's potential attractiveness through more significant parking space savings.

The three options above embody three basic approaches to TSM-related parking provisions developed to date. They are written as options that landowners may select and would not be mandatory. The model code is written in a way that a jurisdiction could offer all three options, but if a jurisdiction prefers to offer only one or two, the other options can be dropped from the code.

Administration - summarizes how key enforcement and monitoring responsibilities are allocated. Generally, the parking provisions will be administered and enforced by branches of the public agency normally charged with administration and enforcement of the zoning ordinance. Special assistance will usually be needed from transportation staff.

Enforcement is a major issue in the establishment of the code. An overview of the suggested approach is presented here, and comments on enforcement philosophy are given at the end of this introductory section. The model parking code requires, for all options, the execution of a contract between the landowner and the responsible public agency specifying the commitments of each party. Jurisdictions may want to negotiate their own penalties for breach of contract (such as a monthly dollar amount as liquidated damages), but care should be taken in setting the penalty so as not to completely discourage landowners from initiating a TSM program.

For the performance standard option only, additional guarantees are recommended: execution of a performance bond, or contingency planning for additional parking spaces. A jurisdiction may elect to choose one of the two for exclusive use, allow the landowner to choose which one will apply, or develop some other method which the jurisdiction finds more feasible. Determination of non-compliance would be the responsibility of a designated person or department within the public agency. If the landowner should default on the performance bond, the money would be available to mitigate any adverse impacts resulting by constructing additional spaces nearby, initiating a residential parking permit program, purchasing transit passes, leasing vans, or other measures.

The code is intended to fit into the parking requirements section of the local zoning ordinance. It has been written in a way to permit substantial flexibility in its implementation in any jurisdiction. This flexibility is necessary since state enabling authority and local land use legal practices may vary considerably from one location to another. For instance, a local jurisdiction may elect to use its existing conditional use or special use permitting processes or variance procedure to accomplish such changes, rather than enact an entire new ordinance section.

Further, philosophies on negotiability of parking requirements vary among jurisdictions. Some localities routinely negotiate with developers on key development issues like the number of parking spaces to be provided or floor-area ratios, whereas others prefer to establish relatively rigid requirements from which variances are only infrequently permitted. Other jurisdictions have chosen to require each development to specify traffic mitigating measures as a condition of development approval, not necessarily tied to any parking reductions at all, in which case the options as specified in the model code would not apply.

The model code synthesizes the most workable techniques from each approach and specifies a methodology aimed at jurisdictions with minimum parking requirements. The approach established in the code relies principally on the economic incentive of reduced parking requirements to influence developers, employers and landowners to institute ridesharing and transit incentives. This is a logical tradeoff and responds to the ever-increasing costs of both land development and the provision of transportation facilities. The code is thus a tool to encourage greater private sector involvement in preserving both land resources and the capacity of streets and highways as urban areas continue to develop.

Prerequisites for Implementation of TSM Provisions in the Parking Code

Usually, a jurisdiction should not amend its zoning ordinance to include TSM parking provisions without having first completed other steps. For example, one of the three possible reduction options available requires the creation of a TSM trust fund. The fund would receive contributions from landowners who have been granted reductions in parking. Authority to establish such a fund would have to exist, and the framework for administering the fund would have to be developed. If local developers sought the services of a third party contractor to operate the ridesharing program required under the TSM provision agreement, for example, such a contract would have to be executed prior to the jurisdiction's approval of the development. Only the individual jurisdiction can determine its own regulatory constraints on the model code approach. Examples of how this has been accomplished in other jurisdictions, including case studies of nine U.S. jurisdictions, are discussed in the technical report entitled Model Parking Code to Encourage Ridesharing and Transit Use - A Review of

Experience, available from the Federal Highway Administration. Many of these techniques have been used in the model code.

One important point concerning reductions granted in parking requirements, however, is that the base parking requirement from which the reduced spaces are subtracted must accurately reflect current parking demand conditions. Thus an ancillary task in attempting such a process is ensuring that such reductions are realistic, given existing requirements. In addition, when requirements are already low, the public agency has lost much of its leverage for seeking landowner commitment to TSM measures. Therefore, base parking requirements must be carefully evaluated. A checklist of items which should be considered prior to the enactment of such a code is presented in Appendix A. Appendix C contains two examples in both an urban and suburban setting of what the reductions actually mean in terms of cost and commuter modal splits.

The Enforcement Question

Perhaps the central issue in permitting such parking reductions is how the local jurisdiction can ensure continuation of the landowner's TSM commitment. The issue is first a legal and then a political one.

The code sets forth three options for reduced parking supply on-site and proposes the execution of a contract outlining the individual commitments of the landowner to the jurisdiction. The best method of implementing the contractual guarantees, whether as a special use permit with the special use requirements comprising the contract, or as a contract between the parties recorded in the jurisdiction's land records, can only be decided through legal analysis of the land use law of the jurisdiction.

Legal methods to enforce landowner commitments are available. Revocation of a special use permit, for instance, can result in the local jurisdiction seeking an injunction against further use of the structure while it continues as a non-conforming use.

The inclusion of a liquidated damages clause in the contract could further specify that a monthly fee would be assessed as a penalty for non-compliance and to generate funds for the local government to use in mitigation of the impact of non-compliance. A realistic guideline for establishing an appropriate liquidated damages

amount might be a monthly assessment based on the number of parking spaces reduced from normal code requirements. Contracting parties are free to establish their own liquidated damages agreement, but the criteria set forth above should provide a starting point for negotiations.

Despite the legal powers available in many jurisdictions the political implications of taking such legal action are extensive. Enjoining the use of a large office building for failure to implement effective TSM actions is unlikely to generate much community support. The local development community would react unfavorably while tenants may blame the jurisdiction in the short term rather than their landlord. Should enforcement be necessary, a strong case outlining the extent of the non-conformity must be prepared with the support of local government leaders.

The approaches taken in this model code vary in the level of risk of landowner failure to fulfill the TSM commitment. One must always be mindful that a complex enforcement scheme will make it less likely that the code will foster additional private sector involvement in the promotion of ridesharing and public transit. On the other hand, there must be some means of enforcement to prevent landowners from making promises they will not or cannot keep. This balance is a policy issue which each jurisdiction must decide for itself. State and local laws may make enforcement easier in some jurisdictions than others. The basic TSM Incentives Option and TSM Trust Fund Option have relatively low risk. The Performance Standard Option, although it involves greater risk, also has greater potential effect and is particularly applicable to locations with major employers expecting to occupy a building for a long duration. A detailed discussion of enforcement problems is included in the report cited in the previous section.

Interaction with the Development Community

There is still a significant lack of understanding on the part of many developers, employers, lenders, public agencies and others of the substantial benefits of ridesharing and transit use, particularly in relation to reducing parking demand and easing traffic congestion. Increasingly, however, cities are finding it difficult to build more roads. Therefore, promoting these alternative modes of travel is essential to prevent further breakdown of the transportation system. Most developers, employers

and lenders are unaware of the extent of employer sponsored ridesharing and transit achievements. Having these TSM provisions in the zoning ordinance will heighten their awareness of the potential of these alternatives.

A key actor in land development is the lender, who provides the financial backing for the project. Developers have contended that financing companies are reluctant to accept reduced parking levels on a site because parking has always been such a key determinant of building site economic attractiveness. Although lenders have always shown particular sensitivity to sufficient parking, few are experts in parking demand analysis. Given appropriate support and justification for why parking demand will be lessened through ridesharing and transit, the financing community should also support less parking supply as a method of reducing spiraling, non-productive development costs. The more widespread adoption of TSM-related parking provisions such as those proposed here will focus lender attention on viable alternatives to supplying the traditional amounts of parking for new development.

II. MODEL PARKING CODE TO ENCOURAGE RIDESHARING AND TRANSIT USE

CONTENTS

Introduction

Art. I -- Findings and Purposes

Art. II -- Definitions

Art. III -- Parking Requirements Reduction Alternatives

Art. IV -- Administration

Art. V -- Interpretation

Art. VI -- Non-Compliance

SECTION II. MODEL PARKING CODE

Be it enacted by the City^{1/} Council of _____: an ordinance amending chapter ____ of the City Code of _____, adding a new article entitled "Reduction in Parking Requirements Based on Commitment to Ridesharing and Transit." This new article, an optional method for computing the number of off-street parking spaces required for office and industrial uses,^{2/} may relate to other Code articles on planning and development, off-street parking and loading, special districts, or others.

ARTICLE I — FINDINGS AND PURPOSES

1-101. Findings. The City Council hereby finds and determines that:

- 1) The City is experiencing significant amounts of traffic congestion and expects future traffic growth;
- 2) The provision of parking is a major expense of new development;
- 3) New development and re-development generate a significant level of vehicle trips, thereby contributing to traffic congestion, air pollution, and energy consumption problems;
- 4) Transportation System Management (TSM) actions like car and vanpooling, flexible work hours, public transit, and bicycle commuting are effective means to reduce peak period single occupant vehicle commuting.
- 5) This amendment substantially conforms with the purposes, intent, and provisions of the City's general plan by encouraging both economic development and alternatives to single occupant commuting by permitting a reduction in parking spaces for landowners who make commitments to promote transportation alternatives at their sites.

1/ The word "City" appears throughout this ordinance and is used to denote any governmental jurisdiction which is authorized to adopt zoning ordinance provisions.

2/ Each jurisdiction may determine land uses to which the code will apply. Some jurisdictions may wish to include institutional uses, such as hospitals. Uses should be employment related and have a set formula for computing the minimum parking requirement, which can then be modified downward based on the TSM commitment.

1-102. Purposes. In recognition of these findings, the City does enact this ordinance to permit reductions in the amount of off-street parking required for office, and industrial uses for the following purposes:

- a) Reduce peak hour traffic congestion by reducing single-occupant vehicle commuting trips;
- b) Reduce development costs in high density corridors within the City;
- c) Reduce highway traffic maintenance costs by reducing total area vehicle miles traveled;
- d) Encourage development density without substantial new highway construction expansion.
- e) Decrease the economic costs of new development or redevelopment.

ARTICLE II -- DEFINITIONS

2-101. Definition of Words and Phrases. The following words and phrases when used in this ordinance shall, for the purpose of this ordinance, have the meanings ascribed to them in this Article.

- a) Carpool -- Two or more people traveling together on a continuing and pre-arranged basis in a motor vehicle over routes tailored to accommodate rider needs.
- b) Transportation Coordinator (TC) -- A person, usually a company employee, responsible for helping employees find ridesharing or public transit commuting alternatives.
- c) High Occupancy Vehicle (HOV) -- Vehicle that carries a minimum specified number of persons.
- d) Public Transit -- Publicly provided transportation, usually either by bus or rail , to users at a fixed cost per ride.
- e) Ridematching -- A process of identifying interested drivers and interested riders for purposes of ridesharing.
- f) Ridesharing -- Transportation of persons in a motor vehicle where such transportation is incidental to another purpose of the driver. The term shall include ridesharing arrangements known as carpools, vanpools and buspools.

- g) Transportation System Management (TSM) -- A low-cost, transportation improvement or action, implementable in the short term, that reduces traffic congestion and/or increases traffic system capacity.
- h) Vanpool -- Seven or more people traveling together on a continuing and pre-arranged basis in a motor vehicle designed for the transportation of persons over routes tailored to accommodate rider needs.
- i) Variable Work Hours -- Work schedules in which employees choose their arrival and departure times within management limits, and which increase the opportunity for employees to find convenient ridesharing arrangements.

ARTICLE III – PARKING REQUIREMENTS REDUCTION ALTERNATIVES

3-101. Applicability:

The following provisions apply only to office, and industrial uses with at least 50,000 square feet of gross floor area and 200 employees.^{1/} Reductions in parking shall be computed using the number of spaces required by other provisions in this ordinance as a base.

3-102. Limitations:

No section or provision of this ordinance shall preclude application of any other provision of this Code. This section is optional and may only be exercised upon application to the Planning Director (or other appropriate zoning official).

3-103. Options for Reduced Parking Requirements:

A landowner may choose one of the following three options:

- a) Basic Incentives Option
- b) Trust Fund Option
- c) Performance Standard Option

3-103.1 Basic Incentives Option

A ten percent (10%) reduction in the number of off-street parking spaces is permitted when the landowner agrees to the following:

- a) Designation of a transportation coordinator (TC) responsible for promoting ridesharing and public transit use among employees and others making trips to the site.^{2/}

^{1/} This is considered a reasonable base for developing a ridesharing program, but may be modified as the city desires.

^{2/} A listing of the five major elements of the TC's duties (under this option) are included as part one of Appendix B.

- b) Participate in areawide ridematching system or provide a ridematching program at the site.
- c) Designate a minimum of 20 percent of the off-street parking spaces to be offered at a discount parking rate for vehicles containing two or more persons. If there is to be no charge for parking, then reserve a minimum of 20 percent of the off-street parking spaces for vehicles with two or more persons. The reserved preferential spaces shall be located in close proximity to the building entrances, relative to other spaces, and shall be clearly signed or marked "RESERVED - CARPOOL/VANPOOL ONLY". Discounted or reserved spaces may be used for visitor parking after 9:30 a.m., if desired.
- d) No fees are levied for landowner exercise of this option.

3.103.2 Trust Fund Option

A fifteen percent (15%) reduction in the number of off-street parking spaces when the landowner agrees to the following:

- a) One-time contribution to the TSM trust fund. This contribution shall be equal to 50 percent of the average cost of constructing a parking space at the site multiplied by the number of parking spaces reduced, as established by the Planning Board.^{1/}
- b) Designation of a TC responsible for coordinating the promotion of commuter alternatives information to building occupants.^{2/}
- c) Permit the public agency to contact and survey employees regarding travel characteristics and preferences.
- d) Provide a prominent location for the public agency to post promotional material about ridesharing and public transit.
- e) Designate discounted or reserved parking spaces for carpools and vanpools as discussed in Section 3.103.1(c).

3.103.3 Performance Standard Option

Up to a thirty percent (30%) reduction in the number of off-street parking spaces may be obtained when the landowner submits a transportation

^{1/} A jurisdiction may wish to spread the equivalent of the one-time contribution into annual payments.

^{2/} A listing of the four TC duties are included as part two of Appendix B.

management plan demonstrating a comprehensive approach to reducing the parking demand at the site. The reduction granted shall be commensurate with the parking demand reduction projected by the transportation management plan. Such plan will be reviewed by public agency staff to determine the adequacy in reducing parking demand through increased ridesharing and landowner or employer commitment to such program. Reductions shall be computed based on levels of auto occupancy and transit ridership determined by the public agency to be applicable to the area in which the site is located.^{1/}

The following TSM techniques shall be acceptable as transportation management plan techniques:

- a) All techniques cited in part I, Appendix B.
- b) Provision of vanpools or subscription bus service for employees.
- c) Subsidy of employee use of HOV's.
- d) Instituting a significant parking charge and not permitting such charge to be subsidized by an employer or other agent.
- e) Provision of parking cost subsidies or free parking for HOV's, if a parking charge exists.
- f) Provision of amenities, such as bicycle lockers, showers and transit shelters, to encourage employee use of alternative travel modes.
- g) Provision of, or participation in, shuttle services from transit stations or from off-site parking facilities owned or leased by the site landowner.
- h) Provision of subsidized transit passes.
- i) Any other technique or combination of techniques capable of reducing parking demand at the work site.

ARTICLE IV -- ADMINISTRATION

4-101. Provisions Governing the Enforcement of TSM Tactics

- a) Enforcement of the TSM measures agreed to in exchange for the parking space reductions granted shall be guaranteed by the following:
 - 1) For any option: execution and recordation of a written contract that describes the range of landowner commitments to carry out the TSM

^{1/} A parking space reduction formula such as found in Part I of Appendix C may be used to compute reductions.

measures selected for implementation. Such contract will specify the enforcement terms agreed to, such as monthly payment of liquidated damages for non-compliance or acknowledgement that the City will seek injunctive relief for established non-compliance. Such contract shall be recorded in the City land records.

- 2) For the performance standard option only, such measures shall be guaranteed by one of the following:
 - a) Execution of a performance bond in an amount equal to the cost of 50% of the average cost of constructing a parking space at the site multiplied by the number of parking spaces reduced, as established by the Planning Board.^{1/} This bond shall be a pre-condition to development approval and will be held in escrow for a minimum of three years^{2/} from the date of 75 percent building occupancy and may be released when, at the discretion of the Planning Board,^{1/} continued compliance with the TSM tactics agreed to has been assured.
 - b) The provision of land, extra-strength parking structure footings or other plans to permit subsequent addition of parking. The set-aside land or parking spaces must equal the reduction granted from code requirements. Construction of additional parking shall be required if landowner non-compliance with the TSM tactics results.
- 3) Any other enforcement provision or penalty mutually agreed upon by the landowner and public agency and recorded in the City land records.

4-102. Provisions Governing the Monitoring of TSM Tactics

- a) As a condition of development approval, all landowners receiving parking space reductions for any TSM option must submit an annual certification to the Planning Director. For reductions through Sections 3-103.1(a) or 3-103.2(b), the landowner shall certify that the tactics agreed to were implemented and are currently operational. For a section 3-103.3(c) parking space reduction,^{3/} the landowner shall annually certify that parking demand reductions have been achieved.

1/ Or other designated governmental body with zoning authority.

2/ Or other period established by the jurisdiction.

3/ Or other performance criteria agreed upon in the contract.

- b) All landowners receiving an Article III parking requirements reduction shall permit City agency staff access to their land for semi-annual inspections for purposes of reviewing compliance with the reductions. Such agreement shall be recorded in the City land records.

ARTICLE V -- INTERPRETATION

5-101. Provisions Governing Interpretation

- a) Where there is any ambiguity or dispute concerning the interpretation of this Article, the decision of the Planning Director shall prevail subject to existing zoning review procedures.

ARTICLE VI -- NON-COMPLIANCE

6-101. Determination of Non-compliance

- a) The Planning Director, or his designee, shall have the authority to make a finding of non-compliance. Upon a finding of continued non-compliance, the enforcement provisions in 4-101 shall be applied in the discretion of the Planning Director.

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**APPENDIX A. CHECKLIST OF PUBLIC AGENCY
ACTIONS NECESSARY FOR IMPLEMENTING A PARKING CODE
TO ENCOURAGE RIDESHARING AND PUBLIC TRANSIT USE**

If the City determines that TSM provisions are appropriate for inclusion into their local parking code, the following checklist should be consulted to ensure that the provisions will be operationally and legally sound. Although every item in this checklist may not apply to each jurisdiction, they present an overview of the types of pre-conditions to implementing such provisions. Some of the items need not be done prior to enactment of the provisions, but should be in force before applications are accepted from developers.

1. General Items

- a. Check for reasonableness of existing base parking requirements for uses to which the TSM provisions will apply (usually office and industrial). Consult references 11, 17 and 33 for information on appropriate base requirements.
- b. Determine the need for further institutionalizing TSM measures community-wide or in a particular setting. The risks inherent in reduced parking requirements must be discussed and an acceptable level established.
- c. Determine the level of community acceptance of and potential for participation in TSM actions like carpooling or transit.
- d. Conduct a financial analysis of the cost of land, parking construction and maintenance for the local area to assess the probable benefits of reduced parking requirements to landowners.
- e. Establish a plan of public involvement in the process of establishing TSM provisions. Preliminary input should be particularly obtained from local developers, employers, citizen groups, leasing agents and attorneys.
- f. Determine whether all three TSM options (basic TSM incentives option, TSM trust fund option, or performance standard option), should be employed or whether only one or two options should be used.
- g. Determine whether state enabling authority is required for implementing specific TSM provisions.
- h. For each option, determine appropriate monitoring and enforcement methods and assign responsible agencies.
- i. Develop sample contracts which can be adapted to serve as landowner/public agency agreement as to TSM commitments made.

2. Additional items relating to basic TSM incentives option.
 - a. Develop manual describing TC duties and landowner responsibilities (e.g. reporting requirements).
3. Additional items relating to TSM trust fund option.
 - a. Develop manual on duties of an TC and responsibilities of the landowner.
 - b. Assign responsibilities for implementing TSM measures to appropriate public agency, create appropriate new agency or arrange for third-party involvement.
 - c. Create financial mechanism for administering TSM trust fund.
 - d. Determine time-table of trust fund payment.
 - e. Establish approach to be used in implementing TSM measures under various conditions.
4. Additional items relating to performance standard option.
 - a. Establish and document criteria for approval of a Transportation Management Plan. Make guidelines available to those desiring to develop such plans.
 - b. Acquire and document sufficient data on typical auto occupancy, modal splits for work trips, parking demand and other factors necessary to verify the validity of Transportation Management Plans submitted by landowners.
 - c. Develop manual outlining duties of the landowner under this option.

APPENDIX B. TRANSPORTATION COORDINATOR'S DUTIES

PART ONE

Transportation Coordinator's Duties for Basic Incentives and Performance Standards Option

- 1) Promote ridesharing and use of public transit (if available) by all employees at the site by, at a minimum, posting ridesharing and public transit promotional materials and information in prominent view of employees.
- 2) Conduct employee travel surveys (using materials provided by the local Transportation Management Agency, Ridesharing Agency or contract transportation management provider) upon occupancy of the building to determine employee travel mode, times of arrival and departure, home location and preferences for ridesharing. Such a survey shall be completed by each new employee.
- 3) Provide matching assistance for ridesharing through either the public ride-matching system or a system sponsored by the landowner or employer, as approved by the Planning Director.
- 4) Promote variable work hours use at the work location.
- 5) The expected level of effort for the TC is at least four hours per month per 100 employees.

PART TWO

Transportation Coordinator's Duties for Trust Fund Option

- 1) Coordinate with personnel from the public agency in promoting ridesharing and public transit use.
- 2) Provide the public agency (or designated agent) with ridematching information from interested employees for purposes of promoting ridesharing and public transit among employees at the site.
- 3) Sign letters, make announcements or conduct other activities indicating employer support for the TSM programs.
- 4) The expected level of effort for the TC is at least two hours per month per 100 employees.

**APPENDIX C. PARKING SPACE REDUCTIONS FORMULA AND
APPLICATIONS OF TECHNIQUES**

PART ONE

**Parking Space Reductions Formula
(Performance Standard Option)**

The number of spaces to be provided shall be computed as follows:

$$N_T = N_e (AO_B/AO_p) (\% A_p/\% A_B) + N_O$$

where:

N_T = total number of spaces to be provided

N_e = number of spaces normally expected to be used by employees

N_O = number of spaces normally expected to be used by others

(Note: $N_e + N_O$ shall total the number of spaces required in the absence of any transportation management plan)

AO_B = base auto occupancy as established by the public agency

AO_p = projected auto occupancy as determined in the transportation management plan

$\%A_B$ = percent of employees normally expected to commute to the site by auto, established as a base by the public agency

$\%A_p$ = percent of employees expected to commute to the site by auto, as determined in the transportation management plan

PART TWO

Sample Application of Parking Space Reductions

The following two case studies illustrate typical development settings and the potential effect on total parking supply of instituting a transportation management plan. Both case studies assume that the local jurisdiction's parking requirement accurately reflects true parking demand. Both represent relatively large developments, but typical of urban settings.

Case I

| | |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------|
| Location: | Urban CBD |
| Type of Development: | Office Building |
| Gross Floor Area: | 950,000 Gross Square Feet |
| Jurisdictions Parking Ratio: | 1.3 parking spaces per 1,000 s.f. of GFA |
| Minimum Parking Requirement: | 1,235 parking spaces |
| Average Below Grade Parking Cost: | \$10,000 per space |
| TSM Option Selected: | Trust Fund Option |
| Reduction Granted: | 15% reduction of off-street spaces for contribution equal to 50% of cost of constructing the spaces reduced. |

Calculations

$$1,235 \times .15 = 185 \text{ spaces reduced}$$

$$185 \times \$5,000 (10,000 \times 50\%) = \$925,000 \text{ Trust fund contribution (could be annualized if jurisdiction desires)}$$

$$1.235 - 185 = 1,050 \text{ parking spaces. New minimum requirement}$$

$$\text{New savings to developer} = \$925,000$$

Public agency could fund full-time position to coordinate ridesharing and transit effort for life of building.

Case II

| | |
|------------------------------|------------------------------------------------------------------------------------------------|
| Location: | Suburban |
| Type of Development: | High Tech Office Development |
| Gross Floor Area: | 300,000 Gross Square Feet (GFA) |
| Jurisdictions Parking Ratio: | 3 spaces per 1,000 s.f. of GFA |
| Minimum Parking Requirement: | 900 spaces (850 employee, 50 visitor) Average Above Grade Parking Cost:\$1,000 per space |
| TSM Option Selected: | Performance Standard Option |
| Base Auto Occupancy: | 1.15 person per vehicle |
| Base Auto Mode Split: | 98% |

Though a series of TSM techniques including designation of TC, vanpools, preferential parking for HOV's and monthly subsidies to employees using transit or HOV's, auto occupancy is projected to increase to 1.50 and percent of employees expected to commute by auto to decrease to 96%.

Reduction from Jurisdiction's Base Parking Requirement

$$N_T = N_e(AO_B/AO_p) (\% A_p/\% A_B) + N_O$$

$$N_T = 850 (1.15/1.50) (96/98) + 150 \text{ spaces for other}$$

$$N_T = 850 (.77) (.98) + 50$$

$$N_T = 641 + 50$$

$$N_T = 691$$

$$\text{Reduction} = 100 - (691/900 \times 100) = 23\%$$

$$\text{Net savings to developer} = 209 \times \$1,000 = \$209,000$$

S.C.R.T.D. LIBRARY

HE 336 .P37 M63

06850

Model Park

DUE DATE

DUE DATE

OCT 5 '93

MAY 29 2009

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MTA DOROTHY GRAY LIBRARY & ARCHIVE



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