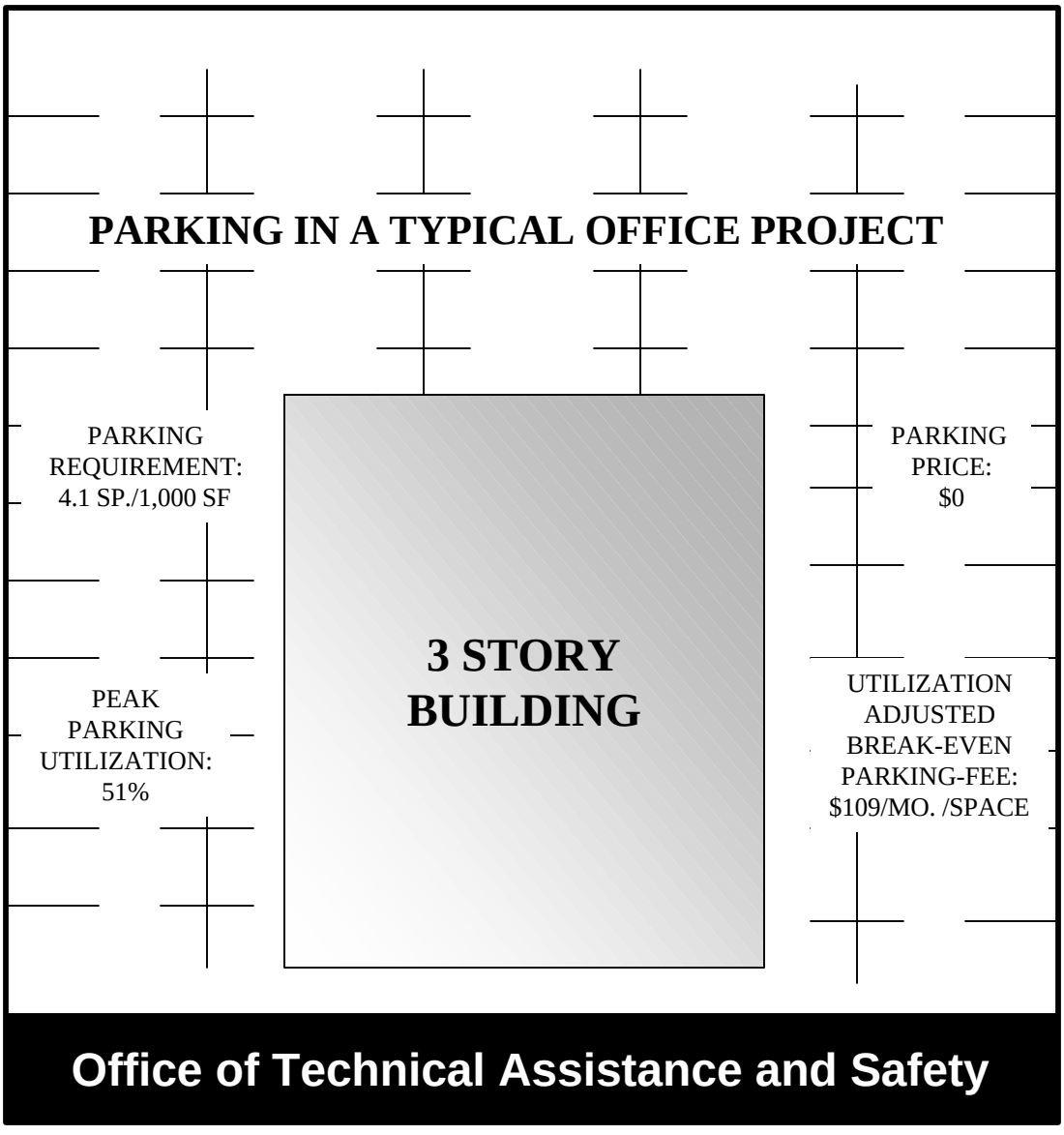
U.S. Department
of Transportation

# Suburban Parking Economics and Policy:

## Case Studies of Office Worksites in Southern California

**September 1992**



# Suburban Parking Economics and Policy:
## Case Studies of Office Worksites in Southern California

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**Final Report**
**September 1992**

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# PREFACE

The research described in this report involved extensive field work and would not have been possible without the cooperation and assistance of city officials, developers, property owners, lenders, leasing agents, employers, transit operators, and consultants. Their contribution is very much appreciated. Dr. Felix Barreto, a colleague at Cal Poly Pomona, contributed to portions of the research design. Dr. Donald Shoup provided useful comments on the research design and the final report. Cal Poly Pomona urban planning graduate students Andrea Heinsius and Sheila Deligdish Brown were the research assistants for this project. They undertook most of the field work, and drafted the majority of Appendix B. Finally, Cal Poly Pomona students Michael Huntley, Michelle Fowler, Hally Cappiello, and Andy Nogal conducted the parking utilization studies. All their efforts are very much appreciated.

## METRIC / ENGLISH CONVERSION FACTORS

### ENGLISH TO METRIC

**LENGTH** (APPROXIMATE)

1 inch(in) = 2.5 centimeters (cm)
1 foot (ft) = 30 centimeters (cm)
1 yard (yd) = 0.9 meter(m)
1 mile (mi) = 1.6 kilometers (km)

**AREA** (APPROXIMATE)

1 square inch (sq in, $in^2$ = 6.5 square centimeters ($cm^2$)
1 square foot (sq ft. $ft^2$ 3 0.09 square meter (ma)
1 square yard (sq yd, $yd^2$) = 0.8 square meter ($m^2$)
1 square mile (sq mi, $mi^2$) = 2.6 square kilometers ($km^2$)
1 acre = 0.4 hectares (he) = 4,000 square meters ($m^2$)

**MASS-WEIGHT** (APPROXIMATE)

1 ounce (oz) = 28 grams (gr)
1 pound (lb) = .45 kilogram (kg)
1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)

**VOLUME** (APPROXIMATE)

1 teaspoon (tsp) = 5 milliliters (ml)
1 tablespoon (tbsp) = 15 milliliters (ml)
1 fluid ounce (fl oz) = 30 milliliters (ml)
1 cup(c) = 0.24 liter (l)
1 pint (pt) 3 0.47 liter (l)
1quart (qt) = 0.96 liter (l)
1 gallon (gal) = 3.8 liters (l)
1 cubic foot (cu ft. $ft^3$)= 0.03 cubic meter ($m^3$)
1 cubic yard (cu yd, $yd^3$) = 0.76 cubic meter ($m^3$)

**TEMPERATURE (EXACT)**

$((x-32)(5/9)]^oF$:= $y^oC$

### METRIC TO ENGLISH

**LENGTH** (APPROXIMATE)

1 millimeter (mm) = 0.04 inch (in)
1 centimeter (cm} = 0.4 inch (in)
1 meter(m) = 3.3 feet(h)
1 meter(m) = 1.1 yards (yd)
1 kilometer (km) = 0.6 mile (mi)

**AREA** (APPROXIMATE)

1 square centimeter ($cm^2$) = 0.16 square inch (sq in, $in^2$)
1 square meter ($m^2$) = 1.2 square yards (sq yd. $yd^2$)
1 square kiiometer ($km^2$) = 0.4 square mile (sq mi, $mi^2$)
1 hectare (he) = 10,000 square meters ($m^2$) = 2.5 acres

**MASS - WEIGHT** (APPROXIMATE)

1 gram (gr) = 0.036 ounce (oz)
1 kilogram (kg) = 2.2 pounds (lb)
1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons

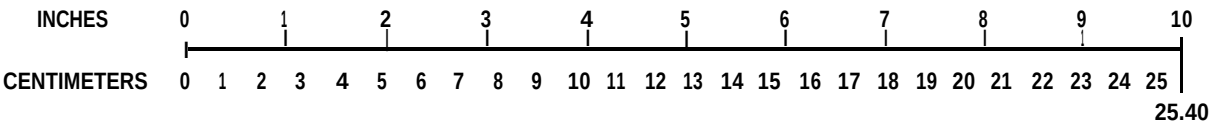
**VOLUME** (APPROXIMATE)

1 milliliter (ml)= 0.03 fluid ounce (fl oz)
1 liter (l) = 2.1 pints (pt)
1 liter(i) = 1.06 quarts (qt)
1 liter(l) = 0.26 gallon (gal)
1 cubic meter ($m^3$) = 36 cubic feet (cu ft. $ft^3$)
1 cubic meter ($m^3$) = 1.3 cubic yards (cu yd, $yd^3$)

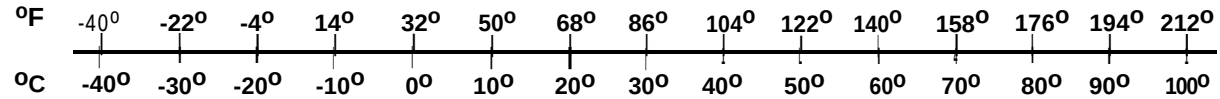
**TEMPERATURE** (EXACT)

[(9/5)y + 32] $^oC$ = $x^oF$

### QUICK INCH-CENTIMETER LENGTH CONVERSION




### QUICK FAHRENHEIT-CELCIUS TEMPERATURE CONVERSION




For more exact and/or other conversion factors, see NBS Miscellaneous Publication 286, Units of Weights and Measures. Price 52.50. SD Catalog No. Cl3 10 286.

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# CHAPTER I
# INTRODUCTION

## Research Overview and Objectives

Parking is a vital but often ignored transportation policy issue. Parking policy decisions shape the form of cities, their density, travel patterns, and the quality of the environment. For example, they affect transit ridership because they are a key determinant of the cost and convenience of automobile commuting. Often, parking policy decisions are made without regard to their broader consequences.

Parking policy is primarily set by local governments, influenced by the policies of other public and private entities. A recent article in ***Planning*** summarized some of the problems with local parking policy:

> "While car sizes, traffic patterns, and parking needs are changing rapidly, the parking sections of zoning ordinances tend to stay the same. New standards are often copied blindly from other locales. Even worse, the standards used may be based on the old-fashioned assumption that demand is paramount." (Swanson 1989, pp. 14)

This situation is slowly changing, spurred by concerns about traffic congestion, air quality, and transit policy. Some policy makers now recognize that parking pricing and subsidy levels are significant determinants of mode choice, and therefore parking demand. Parking is beginning to be viewed in a more comprehensive fashion--not just as support for the land uses it serves, but also a critical component of transit planning, travel demand management, and urban design.

Most of this interest and research has focussed on parking in CBD and other higher density areas. In many ways, parking issues are more clear cut in those areas. It has been shown, for example, that cashing out parking subsidies in areas where market prices exist can significantly increase ridesharing and transit use. On the other hand, there is a dearth of data and policy ideas for suburban parking. Perhaps because suburban areas were partly defined by their approach to parking--plentiful supply and free to the driver--suburban parking has largely been invisible as a policy issue.

Suburban areas differ from CBDs in their parking circumstances. In the suburbs, parking subsidies are more widespread, but the value of the subsidy is usually less. A market parking price often does not exist, and zoning ordinances often force developers to supply more parking than is demanded. Employers lack the flexibility to use fewer spaces because of building design and site layout. Overspill parking (where commuters park on-street or in other off-street facilities away from the main site) can be a problem in commercial areas that border on residential neighborhoods. Finally, primarily because transit service is of lower quality than in urban areas, fewer mode choices are available to suburban commuters. These differences mean that separate analysis of suburban work place parking is needed.

This research seeks to build a knowledge base on suburban parking by studying ten case study sites, examining issues in parking supply, pricing, and policy. A case study approach is used because parking is affected by a large number of actors through the development and management of a building. It is important to have a comprehensive view of the circumstances affecting suburban

parking. For example, it is generally acknowledged that suburban parking is underutilized, yet there is debate about why that occurs. Is the reason for this oversupply the local zoning requirements, or lender's requirements, or simply the inertia of accumulated practices? It is also known that suburban parking is almost always free to the parker, despite its substantial economic cost. What effect does this subsidy have on commuter mode choice?

Southern California is used as a study area because parking is of great interest to the region's transit operators and transportation agencies, and because Southern California typifies many aspects of suburban development.

## Research Approach

Research about parking poses a challenge because of the complex and interrelated factors affecting parking supply, city policies, employers' parking policies, and commuters' travel choices. Survey research can fail to capture the complexity of parking economics and policy. For example, employers may be unaware of the true cost of parking because of the structure of their leases. This research uses an in-depth case study approach to understand these suburban parking problems.

The case study analysis is directed towards addressing questions in three main areas. First, is parking oversupplied at suburban work sites, and if so, why? Second, how are the costs of providing parking borne? And finally, what are the attitudes and policies of the parties involved in parking?

In order to conduct such a case study analysis, the following information was collected:

1) the supply of parking and other relevant features of the site and its context;
2) current parking occupancy levels;
3) market parking prices (if any);
4) charges to employers for parking, and other relevant lease provisions;
5) employer-provided parking subsidies;
6) the economic cost of providing parking;
7) local parking and other land use regulations;
8) mode split for commuters; and
9) perceptions of developers, tenants and other parties in the development and property management process regarding parking supply, pricing, and management.

The project studies 10 employment sites in Southern California. Each of the sites is treated as a case study and comparative analyses are performed. The goal of the research design is to (1) select study sites in a manner that will provide a useful cross-section of employment sites, and (2) develop methods that can efficiently provide information concerning the parking, transportation, and development circumstances at each study site.

An inclusive definition of suburb is used to avoid excluding sites that may fit one definition of suburb but not others. The study uses two overall methods to select suburban sites--(l) excluding urban ***areas*** having the highest population and employment densities, and (2) defining criteria for selecting suburban ***sites*** within the remaining suburban areas.

Office uses were selected for study because they are a fast-growing type of suburban employment (Pivo 1990). Suburban areas reflect recent economic restructuring and shifts in the spatial distribution of employment, and now contain the majority of office space in the U.S. (Pisarski 1987). Office uses are of interest because they are generally viewed as being most related to the traffic congestion problems experienced in suburban areas (Cervero 1989). The study focussed on a single land use to provide more depth of analysis in the case studies.

The research design guided case study site selection in a manner that maximized the useful knowledge gained from ten in-depth case studies. Five case study sites were selected to be typical of suburban office development in the five counties in Southern California; five case study sites were purposefully selected to represent circumstances of interest to parking policy.

The first group of case studies was selected using the following process:

1. spatial differentiation of sites (by county);
2. elimination of geographic areas that are urban;
3. random selection of a community in each county; and
4. selection of a suburban site that met definitional criteria and was representative of office development in that community.

This process resulted in five case studies typical of Southern California suburban office development.

The second group of case studies was purposefully selected on the basis of parking characteristics of interest. This purposeful selection resulted in the selection of five case study projects having special parking problems or policy innovations. Sites were selected to illustrate the following circumstances:

Low Parking Requirements--An employment site was selected in a community where parking requirements are lower than Southern California averages.

Innovative Employer Parking Subsidy Policies--Two study sites were selected because employees pay some or all of the cost of parking.

Shortage of On-Site Parking--A site was selected because it has a shortage of on-site parking.

High Density Redevelopment--A site was selected where high-density redevelopment has occurred, providing urban-like characteristics in a suburban area.

Information on the case study sites was obtained through primary and secondary data collection and analysis and interviews with actors involved in the project. Both quantitative and attitudinal information was collected to provide a broad assessment of parking economics and policy at the case study sites.

Researchers conducted original parking occupancy studies at each site for a typical workday. Appendix A provides additional details on the procedures used for the occupancy studies. In addition, data was collected on site characteristics, economic factors, community characteristics, transit

service, travel mode share, and other relevant factors.

Interviews were conducted with major actors involved in the case studies, including:

1. Local Governments
2. Developers
3. Building Owners/Property Managers
4. Permanent Lenders
5. Lease Agents
6. Parking Operators
7. Project Tenants
8. Transit Operators
9. Transportation Management Organizations
10. Real Estate and Parking Consultants

Each individual was asked a series of questions designed to provide an understanding of their influence on parking at the study site, their perceptions about important factors affecting parking, and their attitudes about parking.

Report Contents

Chapter II summarizes the key findings available in the literature. Chapter III describes the case study sites and their context. Chapter IV analyzes parking at each site. Chapters V, VI and VII review the perspectives of the key actors affecting parking--public sector entities, developer and property owners, and employers. Chapter VIII provides conclusions and offers a series of policy ideas for addressing office use parking in suburban areas.

Appendix A describes the research design for this project, addressing issues such as the way in which suburban was defined, sampling procedures, and the data collection methods. Appendix B summarizes each of the case studies.

# CHAPTER II
## SUMMARY OF PREVIOUS RESEARCH ON SUBURBAN PARKING

### Overview

The literature on suburban parking reflects changes in concerns about parking. The primary issue in the past was providing sufficient parking to support land use activities. In the last decade, a new perspective on parking has emerged--one that recognizes the role of parking in affecting travel behavior. Yet this literature is not well developed. This chapter summarizes research on parking in six topic areas: 1) parking supply/demand relationships, 2) factors affecting parking supply, 3) factors affecting parking demand, 4) economic factors, 5) suburban employers' parking policies, and 6) suburban site planning.

Most studies of parking economics focus on CBD areas, where parking prices usually exist. Far less research has been completed on suburban parking. Yet it is in suburban areas where the bulk of employment growth is occurring (Pisarski 1987). The large scale suburbanization of population that followed World War II has been followed by a suburbanization of employment. During the time period between 1960 and 1980 two thirds of all metropolitan growth occurred in the suburbs. By 1980, approximately 33 million jobs or 47 percent of all metropolitan jobs were located in the suburbs (Pisarski 1987). In addition, suburb-to-suburb commuting became the most typical type of trip to work in America during the 1980s.

### Parking Supply/Demand Relationships

Parking utilization studies show the relationship between parking demand and supply. They measure the peak accumulations of cars in a given facility during a typical weekday. The most widely used reference on parking demand is ***Parking Generation,*** a compilation of reports on parking utilization for the United States. This document provides parking generation rates for various sizes and types of office buildings, as summarized on Table II-l. The table reveals that the average peak parking rate of 2.8 spaces per 1,000 square feet of gross floor area for general office buildings. The rate of parking demand declines as building size increases. The standard deviation value of 2.3 indicates that there is considerable variation in parking demand.

On a per-employee basis, the average parking demand is 0.79, meaning that 0.79 cars are parked in a facility at peak utilization for every employee. The rate is affected by commuting mode, absenteeism, turnover, peak utilization characteristics, and visitor parking.

Table II-l: ITE Weekday Parking Generation Rates

| Land Use | Average Rate | Range of Rates | Standard Deviation |
|---|---|---|---|
| General Office Building | 2.8/1,000 gsf | 0.75 - 32.9/1,000 gsf | 2.3 |
| | 0.79/employee | 0.58 - 1.07/employee | 0.14 |
| Government Office Building | 3.8/1,000 gsf | .6 - 7.8/1,000 gsf | Insufficient Data |
| | 0.77/employee | 0.41 - 1.13/employee | Insufficient Data |
| Office Park | 2.5/1,000 gsf | 0.94 - 4.3/1,000 gsf | 0.76 |
| | 0.76/employee | 0.58 - 0.92/employee | 0.11 |

Source: ***Parking Generation,*** Second Edition, Institute of Transportation Engineers, Washington D.C. 1987.

A survey of Suburban Economic Centers (SEC) by Cervero (1989) indicates that the average parking supply in suburban office centers is 3.9 parking spaces per 1,000 square feet of floor space. This equals approximately one space per employee. Other surveys nationwide indicate similar results of between 3 and 4 spaces per 1000 square feet. (Lea, Elliot, McLean and Co. 1985; Gruen Gruen + Associates 1986; Smith and Hekimian 1985).

Comparing these national data on parking demand and parking supply shows that in most cases, suburban parking is oversupplied. The average peak demand for private offices ranges between 2.5 and 2.8 spaces per 1,000 gross square foot, while Cervero reports an average supply of 3.9 spaces per square foot. This represents almost 50 percent more parking than is demanded. Individual usage surveys in California and Texas show that office workers utilized only 2.0 parking spaces per 1,000 square feet of office space, when in fact 3.7 spaces per 1,000 square feet was provided (Cervero 1989).

Further evidence on the oversupply of suburban parking is available. These studies provide suburban parking utilization data as percentage occupancy of given facilities. A study of east and west coast business parks found 47 percent parking occupancy when the office buildings were well-leased (Gruen Gruen + Associates 1986). In Houston activity centers, there are more parking spaces than would be demanded even if all workers drove their own cars (Hitchock 1987). Finally, a study of nine business parks in suburban Philadelphia revealed that the highest occupancy rate during peak period of parking was only 61 percent (Cervero 1989).

A recent survey by the Warner Center Transportation Management Association in Southern California indicates that parking is over-abundant. Of the 18 companies surveyed (about half the membership) 11,624 employees have 13,434 parking spaces available (Park 1991).

The evidence of the overabundance of parking is well established. Over-supplying parking wastes land and resources, and encourages employees to drive. In addition, the sprawling parking lot designs that often result discourage employees from walking to nearby buildings and make it more difficult for those riding transit to access sites.

Factors Affecting Parking Demand

Parking demand can be defined as the number of vehicles parked at a given time as a result of activity at a site (for an average day, peak day of the week, or peak season) (Witherford 1972). In general, parking demand is determined by the total daily trips attracted, the time pattern of arrivals, and average lengths of stay (Weant and Levinson 1990). Since office parking tends have regular, all-day occupancy patterns, office parking demand is primarily determined by square footage and employee density. However other factors that affect parking demand include the size of a project, the tenant profile (employee mix, operating characteristics), visitor levels, the degree of mixed use, prevailing mode choice, employer transportation policies, and parking pricing (Urban Land Institute 1983).

Weant and Levinson (1990) summarize the accepted practice for determining parking demand, using many of the factors outlined above. In the past, parking price and subsidy policy have not been explicit factors in parking demand calculations because most commuters do not pay for parking. Shoup and Willson (1990) report that both nationally and in Southern California, nine out of every ten commuters who drive to work park free at work. In an analysis of over 3,700 ridesharing plans submitted to the South Coast Air Quality District (SCAQMD) in Southern California, Lopez-Aqueres and Wasikowski (1991) found that 97 percent of employers fully subsidize parking. Finally, an Orange County Transportation Authority (OCTA) study of employers found that only 5 of 75 employers charged employees for parking (Orange County Transportation Authority 1991).

Conventional wisdom has been that commuters, especially those in the suburbs, would drive to work alone even if they had to pay for parking. As a result, many planners feel comfortable setting parking requirements without reference to parking price or subsidy levels. However, the effect of free parking is to increase the amount of solo driving to a site, thereby worsening traffic congestion, air pollution, and energy consumption. Many studies have demonstrated that free parking increases solo driving (Francis & Groninga 1969, Gillen 1977; Transport Canada 1978; Shoup and Pickrell 1980; Surber et. al. 1984; Mehranian et. al. 1987; Soper 1989; Willson and Shoup 1989; Willson 1992; Lopez-Aqueres and Wasikowski 1991).

These studies challenge the notion that planners can know parking demand without understanding the structure of parking subsidies and price. The majority of these studies have examined parking subsidies in CBD or other higher density areas. Less evidence is available in suburban areas, where fewer examples of unsubsidized parking are available. The following paragraphs highlight evidence in suburban areas.

In Los Angeles' suburban community of Warner Center, 20th Century Insurance was one of the first suburban firms to eliminate free parking for solo drivers as a transportation demand management strategy. In 1989, the firm raised the price of parking for solo drivers from no charge to two-thirds

of the market rate ($30 per month) while continuing to offer a package of rideshare incentives (Soper 1989). A dramatic 49 percent decrease in solo driving was achieved, resulting in a drop in the number of automobiles driven to work per 100 employees from 92 to 64. The primary mode shift was to carpooling. Clearly, much less parking is needed under this parking policy. This example is one of the case studies reported on later in this report.

Lopez-Aqueres and Wasikowski (1991) analyzed the ridesharing plans for Los Angeles area employers submitted under the South Coast Air Quality Management District (SCAQMD) Regulation XV. The majority of these plans were from suburban employers. The data is reported as Average Vehicle Ridership (the number of people per automobile commuting to the site). The analysis uses a sample of 3,710 employers to show that employers whose parking policy is "no subsidy" or "partial subsidy" have an AVR that is 8.5 percent higher than those who offer free parking. A higher AVR means that fewer cars are driven to work, showing 'that when employees have to pay some or all of the cost of parking, they drive alone less frequently.

In 1979, the Federal Government raised parking rates from free to between $10 and $32 per month at Federal office facilities in the Washington D.C. area. This included suburban areas in Alexandria and in Montgomery County. Although the prices charged were relatively modest, in most cases statistically significant reductions in solo driving occurred (Miller and Everett 1982).

Factors Affecting; Parking Supply

There are competing views on the importance of the factors affecting parking supply in suburban areas, but local jurisdictions' minimum off-street parking requirements are often cited as a fundamental factor. Jurisdictions impose these requirements to ensure that the development will be adequately served by parking, and therefore a successful land use. Zoning for minimum parking requirements become common after World War II (Weant and Levinson 1990).

Municipalities also impose parking requirements to reduce the likelihood that drivers will park in nearby residential areas, preserving the availability of street space for carrying traffic instead of storing cars (Homburger 1989). The desire for convenient off-street parking is also often tied to maintaining free traffic flow. Finally, local jurisdictions may set high minimum requirements as "insurance" against potential future parking problems created by changes in the use of the building.

Conventional practice in estimating parking demand is to use square footage determinants, since employment levels cannot always be predicted in advance with great accuracy (Smith & Hekimian 1985). Many developers and designers have used an alternative rule of thumb that there should be one parking space per worker in an office building.

Weant and Levinson (1990) provide a guide to setting parking requirements in zoning ordinances. For general office buildings, they cite a demand level of 3.0 space/1,000 gross floor area (gfa). This is an 85th percentile figure derived from a series of studies of similar land uses (rather than an average). As a result, this demand estimate is higher than the average provided in the ITE Parking Generation handbook and other reported figures. Weant and Levinson then go on to recommend that minimum requirements should be greater than the 85th percentile value, by 5 or 10 percent, to

reflect the loss of space availability due to parking space turnover. The result of using an 85 percentile value and a 5-10 percent turnover allowance is high recommended minimum requirements--4.0 spaces/l,000 gfa for buildings up to 30,000 square feet, and 3.3 spaces/l,000 gfa for buildings larger than 30,000 square feet. The 4.0 space/l,000 square feet standard is commonly used in practice, but as discussed earlier, results in a substantial oversupply of parking spaces for most uses. Instead of tailoring specific requirements to high demand uses, this approach forces most office uses to overbuild parking to ensure that enough parking is available for the few high demand uses. Overbuilding parking is wasteful of monetary and land resources, and encourages solo driving.

A compilation of data on office parking requirements for selected California cities reveals a mean parking requirement of 3.6 spaces per 1,000 square feet, and a mode value of 4.0 space per 1,000 square feet (International Parking Design, Inc. 1988).

Existing parking codes typically require more parking than is actually used, as shown earlier. This oversupply usually occurs at a zero price for parking, so the real oversupply (the difference between forced supply and the demand at full market price) is even greater.

Not all cities have high minimum requirements, however. Some cities requirements are lower than the market's perception of demand, and other actors in the development process may establish the supply of parking for a given project. Financial lenders, developers and prospective and current tenants may play an important role. For example, if parking is perceived to be undersupplied, financing may be difficult to obtain, and the project will not be judged as commercially viable (Washington Post 1988). Equity investors may also shy away from projects that are perceived to be underparked. Developers often follow industry-established rules of thumb, such as the 4.0 spaces/l,000 square feet requirement. Finally, tenants may demand certain parking levels as a condition of occupying the site.

ULI's Office Development Handbook (1981) provides somewhat mixed advice on office development standards, but generally supports the 4.0 space per 1,000 square feet standard.

> As a general rule, developers of suburban office parks provide more parking than is required under a typical zoning ordinance but in some cases this is more than is needed. An allowance of four spaces per 1,000 square feet of net rentable area (one space per 250 net square feet) is an across the board ideal solution. A ratio of 3.5 spaces per 1,000 square feet is probably the minimum that should be considered in the absence of public transit alternatives. (pp. 56)

Under certain circumstances, developers and lenders may encourage reductions in parking. This may occur in phased projects. Once the first phase is complete, usually with ample parking, feasibility studies can be performed that may change the amount of parking supplied in subsequent phases. However, this is usually in exchange for programs that reduce travel demand and hence parking demand (Valk 1990). An alternative approach is found in the Howard Hughes Center project in western Los Angeles, which provided below-standard parking for the first phase and then increased the amount as the subsequent phases were built according to the on-site parking utilization. (Cervero 1989).

Despite the cost of over-providing parking, many parties concerned with leasing a building would rather have too much parking than not enough. A prospective tenant may be lost if ample parking is not available (Turner 1989). Tenants want office space to be convenient for their employees, and most equate this convenience with access to abundant and inexpensive parking. They will usually lease as much as is available for their space (Valk 1990).

Economic Factors

Compared to urban land prices of $30 dollars per square foot or more, suburban office space land can often be purchased for less than $20 per square foot. The cost and availability of land determines the size and type of parking facility that will be constructed (Roti 1983). When land values reach $30 per square foot, structures begin to have cost advantages; when they reach $100 to $120 per square foot, underground parking begins to have cost advantages (Weant and Levinson 1990).

The direct (hard) development costs of building a parking structure are as follows: land acquisition, demolition of existing site improvements, parking structure shell costs, ground floor commercial tenant finish, elevators, landscaping/site work. Indirect (soft) costs are often calculated as a percentage of total direct costs and include: architectural/engineering, fees, permits, miscellaneous, developer overhead and profit and construction financing (Anderson & Valenzuela 1985).

About three-quarters of suburban economic center parking is surface parking (Cervero 1989). A well-designed facility uses 300 and 325 square feet per car. This can vary, however, to between 250 and 400 square feet per stall (Highland 1990). Surface parking costs between $3 and $7 per square foot to build, including paving and drainage, lighting, landscaping and basic access/revenue control equipment. A parking stall of 320 square feet therefore would cost between $960 and $2240 per space (Weant and Levinson 1990). Parking structures vary between $8,000 and $12,000 a space, depending on their height and design, plus the cost of land. Below-grade parking can cost $20,000 per space to develop.

Most tenant leases do not separately charge for parking. The cost of parking is “hidden” in the lease rate for the office space. Separating the cost of office and parking space would show tenants the actual costs of providing free parking for its employees. However, property owners may charge a prospective tenant less or nothing for parking in order to ensure the leasing of the office space (Valk 1990).

Parking facilities are often managed or operated by parking management companies. These companies may be paid on the basis of the facility’s revenue, giving little incentive to decrease parking demand (Valk 1990).

Suburban Employers’ Parking Subsidy Policies

The prevalence of subsidized parking was discussed in a previous section. An overwhelming number of suburban commuters park free. Employer-provided parking subsidies are an integral part of the benefit package used to attract and retain employees. These subsidies can be direct (employers purchase or reimburse employee parking) or indirect (employers pay higher lease rates). Indirect

**subsidies** are most common in suburban areas.

Parking subsidies are non-taxable, so employers can provide a fringe benefit whose value exceeds that of the same amount of taxable income (Shoup and Willson 1992).

Employers provide free parking for many reasons. Their employees often assume that free parking is a standard benefit. Free parking is used to attract and retain employees, enhance the availability of the employee to work extra hours, and it is "tax efficient" because it is a non-taxable fringe benefit that does not apply to **an** employee's salary. The rationale behind the tax exemption is to encourage employers to provide desirable working conditions and thus increase employment and productivity (Pickrell 1991). Also, free parking is a non-salary benefit that is easier to cut than salary (Williams 1991).

The OCTA survey asked 50 employers who did not charge their employees for parking their reasons for that policy (employers could respond more than once). Ninety-two percent indicated that they provided free parking because it was considered an employee benefit. Many employers (42 percent) indicated that they never considered the issue. Twenty percent of employers indicated that charging for parking would be too time consuming. Only ***one*** employer indicated a union or employee contract as the reason (Orange County Transportation Authority 1991). This confirms the prevalent view of parking by employers--free parking is standard practice and largely a non-issue. And employers aren't getting any complaints from their employees.

Even though parking may be free to commuters, many suburban employers control access to parking, using gates, ticket booths or magnetic card readers. The OCTA survey found that 28 percent of employers were located in a site that controlled access. Employers also commonly differentiate parking access. The same study found that 51 percent of employers reserve executive spaces, and 73 percent **reserve** carpool spaces. In the absence of price, allocating parking through proximity to the building becomes a differentiating employee benefit.

During the last decade, there has been some change in employers' policies. Spurred by trip reduction ordinances, employers have been implementing rideshare programs that have changed their views on the amount of parking and the subsidy required for their employees. Due to these mandates, such as the SCAQMD's Regulation XV in Southern California, some employers are beginning to look for sites that are "commuter friendly" and have rideshare programs readily available for their employees.

A 1985 national study of employers concerning transportation benefit programs reveals some interesting attitudes about parking benefits. The employers in the survey rated all types of rideshare programs (except subsidized transit passes) as having higher cost effectiveness ratings than free parking. Rankings were based on employee morale and productivity, the cost effectiveness of the benefit, reduction of tardiness, enhancing corporate image, etc. (Peat Marwick 1985). This report raises interesting questions about why parking is so commonly subsidized, when the employers in the study perceived the effectiveness of that subsidy to be lower than many other benefits.

Site Plan Effects of Suburban Parking: Policy

There are many development contexts for suburban office development. Two overall classifications are cluster development and auto-oriented patterns organized along transportation routes (Hughs and Sternlieb 1986). Cervero (1989) identifies six types of suburban employment centers using factor analysis--office parks, higher density office centers, small and large mixed use developments, sub-cities, and large scale office growth corridors. Cervero's study found relatively little difference between parking supply and price at the types of centers. All types of development had generous supplies of parking (usually one space per employee) and free or inexpensive parking. However, there were some differences. For example, parking supply was lower in larger and higher density developments.

One of the key factors cited in designing a suburban office building is access to an adequate supply of parking. Typically, the location of buildings on a site is influenced by the site's parking requirement or by setback requirements, landscaping plans and/or other zoning and design restrictions. With zoning regulations in mind, a designer seeks to create the most effective relationship between building entrance and parking facilities (Rivera 1991). Since more than 90 percent of workers arrive at a building in an automobile, this is logical from the building designer's viewpoint. However, the site configuration that results may discourage transit and non-motorized access.

Current trends in suburban office building design focus on constructing a "spacious, comfortable, and aesthetically pleasing working environment" (Cervero 1989). Frequently, these designs increase the land area per employee by including extensive landscaping and the availability of abundant parking. Assuming that four spaces per 1000 square feet are provided and parking stalls measuring 325 square feet each, these campus style office buildings pave 1300 square feet of asphalt for every 1000 square feet of office space (O' Mara and Casazza 1982; Leinburger and Lockwood 1986).

Generally, the office building is surrounded by parking, offering the employee convenience in walking distance to the building. Studies have found that a mean walking distance of 116 feet exists between main building entrances and the middle of the closest parking lot (Cervero 1989).

Even though environmental concerns may be changing, using parking management strategies to encourage more efficient types of commuting, such as transit, is difficult in suburban areas. Many office parks lack physical integration and discourage pedestrian traffic (no sidewalks). Long walks to and from bus stops or through expansive parking lots are common, and perpetuate private automobile use.

Transit agencies have become more active in trying to influence the design of buildings in a way that will be more transit- and pedestrian-friendly. For example, the Southern California Rapid Transit District (SCRTD) is preparing a site planning handbook to promote developments that can be more easily served by transit, and they regularly comment on projects through the Environmental Impact Report process. In addition, the Orange County Transportation Authority has produced a series of handbooks on parking management for developers, cities, and employers (OCTA 1991).

# CHAPTER III
# DESCRIPTION OF CASE STUDY SITES

The ten case studies provide an assessment of the parking circumstances at suburban office sites in Southern California. This chapter describes them in two groups--five sites in the randomly selected communities, and five purposefully selected sites. Figure III-1 shows the location of each of the case study sites and their respective cities in Southern California.

## Context for Case Study Sites

Table III-l: Summary Characteristics of Randomly Selected Communities

| Site Name | Swift Building | Systemhouse | Toshiba | Stewart Plaza | Rancon Building |
|---|---|---|---|---|---|
| City | Oxnard | Cerritos | Irvine | Upland | Temecula |
| County | Ventura | Los Angeles | Orange | San Bernardino | Riverside |
| City Population (1990) | 142,216 | 53,240 | 110,330 | 63,374 | 27,099 |
| Population Density (per sq. mi.) | 5,828 | 6,191 | 2,608 | 4,197 | 1,026 |
| Employment (1987) | 36,591 | 28,159 | 116,834 | 19,123 | Not Available |
| City Description | Largest city in county, mature | Largely built-out in 1960s and 1970s | Newer, planned community, job-rich | Largely built-out residential suburb | New, fast growing, recent incorporation |

These randomly selected cities illustrate a variety of suburban community characteristics, as shown above. By spatially differentiating the case study sites by county, the study has achieved useful variation in city size, density, employment and stage in development history. These factors reflect the development conditions in the counties in which the sites are located. The population data reflects the existence of many small and mid-sized suburban communities in Southern California. Much of the planning in suburban areas is done by relatively small units of government, which means that resources are seldom available for extensive parking policy development.

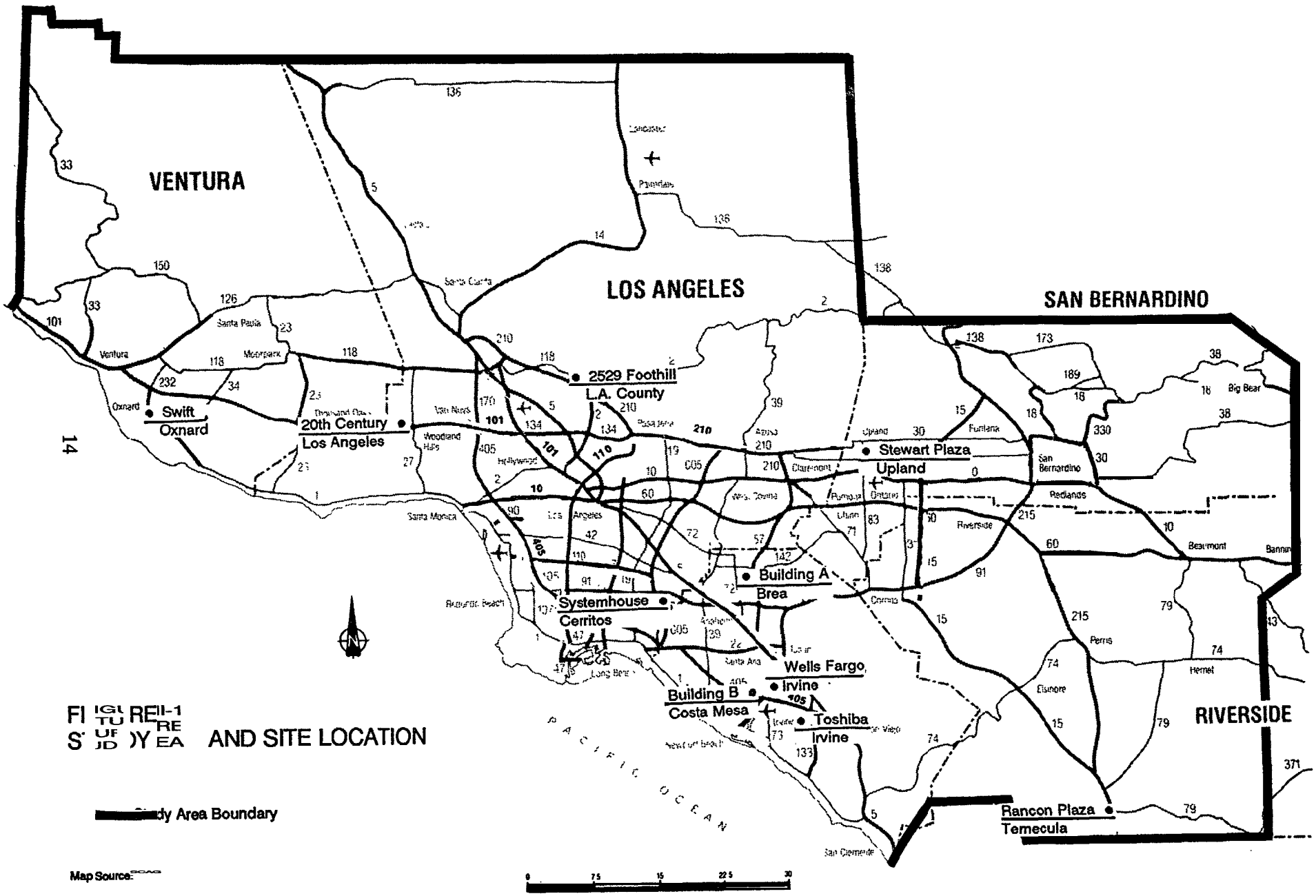


FIGURE II-1
STUDY AREA AND SITE LOCATION

Study Area Boundary

Table III-2: Summary Characteristics of Communities Containing Purposefully Selected Sites

| Site Name | Tishman Building | 2529 Foothill | Building A | Building B | Wells Fargo Tower |
|---|---|---|---|---|---|
| City | Warner Center, in Los Angeles | Unincorp. | Brea | Costa Mesa | Irvine |
| County | Los Angeles | LOS Angeles | Orange | Orange | Orange |
| Reason Site Was Selected | Employer Charges for Parking | LOW Minimum Pkg. Rqmt. | Parking Shortage | Employers Charge for Parking | High Density Redevelop. |
| City Population (1990) | 3,485,398 | N/A | 32,873 | 96,357 | 110,330 |
| Population Density (per sq. mi.) | 7,427 | N/A | 3,287 | 6,177 | 2,608 |
| Employment (1987) | 1877,890 | N/A | 30,334 | 75,517 | 116,834 |
| City Description | Suburban sub-city on the western edges of L.A | Unincorp., mostly residential | Newer, fast-growing | Maturing suburb | Newer, planned community, job rich |

The communities chosen in the purposeful selection procedures broaden the range of suburban contexts. In particular, Warner Center and portions of Costa Mesa and Irvine are large, mixed use suburban employment centers that are referred to as sub-cities or edge cities by some urban analysts. They are of interest because their higher densities increase the potential for ***urban*** parking management strategies.

Case Study Site Characteristics

The sites chosen for study reveal the diversity of building types that are found in areas considered to be suburban, including low density projects with surface parking and high density towers with parking structures. Three generic categories of project exist in the case study sites assembled. The following summaries provide a brief overview of the three categories, and the key features of each case study site.

***Small single-use projects smaller than 50,000 square feet.*** Floor area ratios are low and surface parking is common. Parking is free and uncontrolled; leases do not include separate charges for parking.

Swift Building, Oxnard (Random Selection)

This site has a lower than average parking supply. The project was built with less than the

current Oxnard minimum requirement (2.5 spaces/l,000 square feet versus 4.0 spaces/l,000 square feet). The site has a relatively high FAR for its size because two levels of parking are provided in the building.

Rancon Building, Temecula (Random Selection)

This is a typical low density suburban project, with a 4.3 space per 1,000 square foot parking supply. The developers view plentiful free parking as a necessary component of a successful development.

2529 Foothill, Los Angeles County (Purposeful Selection)

This project was chosen because the County's parking requirement (2.5 spaces/l,000 square feet) is lower than the regional average. The developer supplied parking at code (and therefore less than typical standards used by the development community) to maximize the building area on the site.

***Medium-sized projects between 50,000 and 200,000 square feet.*** These projects have higher densities than the smaller projects, and some have a mix of uses on the site. Some office uses share the site with warehouse and assembly space, or retail uses. These sites primarily have free, surface parking, although access may be controlled.

Systemhouse, Cerritos (Random Selection)

This project is part of a major mixed-use redevelopment project that will include shared parking. As the site is built out, parking structures will replace some of the current surface parking. At completion, the development will be a fairly high density, mixed-use project, but will provide typical suburban parking standards.

Toshiba, Irvine (Random Selection)

This project typifies office development in areas where light industrial uses share the site with office uses, in this case warehouse and assembly operations. The Toshiba site is a large scale project with typical parking circumstances--plentiful, free, uncontrolled surface parking is provided.

Stewart Plaza, Upland (Random Selection)

This site is targeted to a specialized office niche, i.e., mixed use, high amenity, service-oriented tenants. The treatment of parking is typical for medium sized office projects--plentiful (5.0 spaces/l,000 square feet), free, uncontrolled parking.

Building A, Brea (Purposeful Selection)

This site was chosen because of its high employee density. The project has greater than

minimum code requirements, and the highest supply of any of the case studies. Building A is not named because the tenant requested anonymity.

***Large-scale office developments over 200,000 square feet.*** These projects are large scale and have higher densities. Parking is not universally free to tenants or commuters. Parking is often provided in structures, and shared parking is common. These sites have similarities to traditional central business district projects--high land values, large scale development, and controlled parking access. These projects are larger than the typical suburban development, but are increasingly common in the higher density suburban activity centers.

Tishman Building, Los Angeles (Purposeful Selection)

This site was chosen because the single tenant charges its employees for parking and has high ridesharing levels. The developer built more parking than the minimum requirement, (3.3 spaces/1,000 square feet versus the required 2.0 spaces/l,000 square feet).

Building B, Costa Mesa (Purposeful Selection)

Building B was selected because a group of employees must pay market prices for parking. This is a high density site, with structure parking and separate charges for parking. Building B is not named because a tenant requested anonymity.

Wells Fargo Tower, Irvine (Purposeful Selection)

This project was chosen because it illustrates development circumstances in rapidly densifying CBD-like suburbs. This project is part of a mixed use master-planned redevelopment scheme, in which relatively new low density office uses were demolished for this project. Parking is provided in a structure.

Tables III-3 and III-4 summarize data on key characteristics of the case study sites. Further description is provided in the case study descriptions in Appendix B.

Table 1113: Summary Characteristics of Sites in Randomly Selected Communities

| Site Name and Location | Swift Building, Oxnard | Systemhouse, Cerritos | Toshiba, Irvine | Stewart Plaza, Upland | Rancon Building, Temecula |
|---|---|---|---|---|---|
| Land Use | Office | Office | office w/ Warehouse | Office | Office |
| Other Uses on Site | None | Retail, hotel, arts | None | Retail | None |
| Date Built | 1977 | 1989 | 1987 | 1989 | 1986 |
| Gross Square Foot of office | 43,769 | 153,600 | 156,099 | 93,000 | 41,216 |
| Floor Area Ratio | 1.0 | 0.8 | 0.3 | 0.6 | 0.3 |
| Type of Parking | Surface/ Underground | Surface | Surface | Surface | Surface |
| Amount of Parking Required | 4.0/1,000 gfa | 4.0/1,000 gfa | 4.0/1,000 gfa | 5.0/1,000 gfa | 4.3/1,000 gfa |
| Amount of Parking Provided | 2.4/1,000 gfa (See App. B) | 4.0/1,000 gfa | 4.5/1,000 gfa | 5.0/1,000 gfa | 4.3/1,000 gfa |
| Access Control | Partial gated | No | No | No | No |
| Area of parcel devoted to parking | 30% | 79% | 65% | 61% | 70% |
| Shared parking or reciprocal agreements | No | Reciprocal Agreement | No | Reciprocal Agreement | Reciprocal Agreement |

These sites show the characteristics of typical suburban developments in the cities selected for study. The average values for these case studies are follows: building size--94,000 square feet, FAR--0.5; and percent of the parcel is devoted to parking--61 percent.

Most of these projects provided the amount of parking required by code, no more and no less. No parking variances were requested. The amount of parking required averages 4.3 spaces/l,000 square feet, which is on the high side of national averages. Because the Swift Building provided less than current code, the average parking provided is 4.1 spaces/l,000 square feet. The case studies and the attitudinal information discussed later indicate that cities' zoning requirements were the primary determiners of parking supply.

The purposefully selected sites summarized on Table III-4 are more varied, because they were specifically chosen to show parking economics and policy circumstances that are of interest.

Table III-4: Summary Characteristics of Purposefully Selected Sites

| Site Name and Location | Tishman Building, Los Angeles | 2529 Foothill, LA County | Building A, Brea | Building B, Costa Mesa | Wells Fargo Tower, Irvine |
|---|---|---|---|---|---|
| **Land Use** | **Office** | **Office** | **Office** | **Office** | **Office** |
| **Significant Other Uses on Site** | **None** | **None** | **None** | None | Health club, hotel, other office |
| Date Built | 1980 | 1986 | 1984 | 1987 | 1990 |
| Gross Square Foot | 274,000 | 12,858 | 93,000 | 464,500 | 347,000 |
| Floor Area Ratio | 0.8 | 0.5 | 0.4 | 2.6 | 3.0 |
| Type of Parking | Surface | Surface | Surface Structure | Structure | Structure |
| Amount of Parking Required | 2.0/1,000 gfa | 2.5/1,000 gfa | 4.0/1,000 gfa | 2.7/1,000 gfa | 3.4/1,000 gfa |
| Amount of Parking Provided | 3.3/1,000 gfa | 2.5/1,000 gfa | 5.1/1,000 gfa | 2.7/1,000 gfa | 3.4/1,000 gfa |
| Access Control | Partial | No | No | **Yes** | **Yes** |
| Area of parcel devoted to parking | 79% | 63% | 58% | 65% | **48%** |
| Shared parking or reciprocal parking agreements | No | No | No, but lease 50 additional offsite spaces | Shared parking with Performing Arts Center | Reciprocal Agreement |

The purposefully selected projects exhibit a greater range in the number of spaces required (2.0 space/l,000 square feet to 4.0 spaces/l,000 square feet), and differing developer responses to parking requirements. For example, the developer of the Tishman Building case study provided more than code required parking.

The two higher density projects have parking structures, which led developers and city officials to more closely scrutinize parking supply and policy. In Building B, the Costa Mesa reduced the normal 3.0 space/l,000 square feet requirement to 2.7 spaces/l,000 square feet to reflect shared parking potentials. For the Wells Fargo Tower, the city's ordinance reduces the parking requirement for any portion of an office development larger than 250,000 square feet from 4.0 spaces per 1,000 square feet to 2.0 spaces per 1,000 square feet. For this first building, the overall requirement was 3.4 spaces per 1,000 square feet, and it will be 2.0 spaces/l,000 square feet for subsequent office towers in this

development. The average parking requirement for offices at build-out will be 2.2 spaces per 1,000 square feet.

CHAPTER IV
# PARKING ANALYSIS

Parking Supply and Demand Relationships

One of the key analytic tasks in this research is to examine the literature review finding that parking in suburban office sites is substantially oversupplied. Table IV-1 summarizes the parking utilization data for sites in the randomly selected communities. This parking utilization data is based on original parking utilization surveys for each site, conducted in the spring of 1992. See Appendix A for details about the data collection procedures.

Table IV-1: Parking Utilization of Sites in Randomly Selected Communities

| Site Name and Location | | Swift Building Oxnard | Systemhouse, Cerritos | Toshiba, Irvine | Stewart Plaza Upland | Rancon Building Temecula |
|---|---|---|---|---|---|---|
| Time of Peak Utilization | | 10:30 am | 9:00 am | 10:30 am | 3:00 pm | 10:00 am |
| Employee Density (emp./1,000 occupied gla) | | 2.8 | 2.8 | 6.4 | 2.7 | 3.2 |
| Peak Parking Spaces Demanded per Employee | | 0.7 | 0.8 | 0.4 | 1.0 | 0.8 |
| Current Building Occupancy | | 89% | 98% | 100% | 75% | 70% (est) |
| Peak Parking Utilization | @ Current Building Occupancy | 65% | 52% | 51% | 34% | 34% |
| | @ 95% Building Occupancy | 69% | 51% | 48% | 43% | 47% |
| | /1,000 gfa (occupied) | 2.0 | 2.1 | 2.3 | 2.2 | 2.1 |
| Visitor Parking (% of total demand) | | N/A | 2.2% | 7.0% | 4.4% | 9.9% |

The table shows considerable variation in employee density. This variation is what sometimes lead cities to require more parking than a typical building will use. The occupancy levels for these case studies are quite consistent with national surveys of office building occupancy. It should be noted that some employee population data was estimated by building managers, so this employee density data may be less accurate than that derived from direct surveys.

The peak parking demand/employee data also shows that the rule of thumb that one parking space is needed for each employee is not appropriate for these sites. On average 0.7 spaces per employee were used. This figure includes any visitor parking at the site. This level is below one space per

employee because of ridesharing and the characteristics of parking demand at the peak utilization period. Most facilities had their peak demand in the morning. The utilization data suggest that a significant number of workers were not at the site at the peak period, either out of the office for ‘business travel, working alternative hours, or on vacation or leave.

The peak parking utilization section of the table shows parking utilization two ways: utilization percentages (at current and at 95 percent building occupancy) and parking spaces used per 1,000 occupied gross floor area (irrespective of building occupancy). The results support the literature findings cited earlier. Parking utilization at all sites was quite low.

Translating the measured peak occupancy to the occupancy expected when the building is 95 percent leased yields peak parking utilization levels of between 43 and 69 percent, with an average of 51 percent. Said another way, an average of 2.1 spaces per 1,000 occupied gfa was occupied at the peak utilization period. The average parking supply for these projects is 4.1 spaces per 1,000 square feet. ***When these sites are fully leased, their parking will be half empty on any given day.***

The purposefully-selected sites show more variation in parking utilization, but do confirm a pattern of parking oversupply. Table IV-2 summarizes the results.

Table IV-2: Parking Utilization of Purposefully Selected Sites

| Site Name and Location | | Tishman Building, Los Angeles | 2529 Foothill LA Cty. | Building A, Brea | Building B, Costa Mesa | Wells Fargo, Irvine |
|---|---|---|---|---|---|---|
| Time of Peak Utilization | | 11:00 am | 11:30 am | 11:00 am | 2:00 pm | 10:00 am |
| **Employee Density (emp./1,000 occupied gla)** | | **4.4** | **2.0** | 8.2 | 5.0 | 4.4 |
| **Peak Parking Spaces Demanded per Employee** | | **0.7** | **0.7** | 0.7 | 0.3 | 0.6 |
| Current Building Occupancy | | 100% | 76% | 100% | 89% | 85% |
| Peak Parking Utilization | @ Current Building Occupancy | 76% | 56% | **98%** | 54% | 57% |
| | @ 95% Building Occupancy | 72% | 70% | **98%** | 58% | 64% |
| | /1,000 gfa (occupied) | 2.5 | 1.8 | 5.0 | 1.5 | 2.3 |
| Visitor Parking (% of total demand) | | 5.8% | 33.4% | 1.0% | N/A | N/A |

The exception to the pattern of low parking utilization levels is Building A, which was chosen because it has a high employment density (8.2 employees per 1,000 square feet of gross leasable area, roughly double the common employee density). The firm is engaged in loan processing at the site and has a large amount of computer-based processing. The remaining sites have typical employment densities.

The parking demanded per employee is similar to that found for the randomly selected sites. Estimates of peak parking utilization at 95% building occupancy range between 58 percent and 98 percent, with 98 percent being an outlier (Building A). Building A's high employee density contributes to its high parking utilization level. That employer's workers demand 5.0 spaces per 1,000 square feet, as much as the highest requirements in some zoning ordinances. However, this project is an exception to typical parking utilization, and was studied specifically because of that reason. Excluding Building A, an average of 2.0 spaces per 1,000 square foot were occupied at the peak utilization period.

Cost and Pricing of Parking

An underlying problem in suburban parking is that there is generally no relationship between the cost of providing parking and the price that commuters pay to park. Market prices rarely exist, because a large oversupply has been provided. Even when they do, employers usually directly or indirectly subsidize parking. As a result, most commuters do not receive price signals about the cost of the resources they use when they park. Most suburban commuters perceive no opportunity cost to parking, and therefore treat it as a free good. They consume more parking than they are willing to pay for.

This section compares the cost and price of parking for the case study sites. Where possible, land, capital cost and operating cost data were collected from the developer. When complete data was not available, secondary sources and estimates were used. The figures used are 1992 dollars.

The results show the magnitude of the underlying subsidy provided to most automobile commuters. Tables IV-3 and IV-4 show the monthly per space charge that would cover the total of the amortized capital costs and operating costs of parking. This break-even fee is a standard method of expressing the economic cost of providing parking--the revenue required to cover the cost of providing a single space. This assumes that each space that has been provided generates income.

However, if one is concerned about the revenue required to break even for the parking ***facility*** (rather than a single space), then parking utilization must be taken into account. Most parking facilities are not fully used, so another expression of parking ***is*** used: the ***utilization adjusted break-even*** fee. This fee shows the amount that a property owner would have to charge those who park in the facility to cover the cost of providing the entire facility.[1] Because parking utilization levels are

1 This assumes that there is no turnover in these spaces because they are used for all-day parking for office workers. It is possible that a space may generate revenue during non-peak times, but because there is an overabundant supply of parking at those times, that provides no economic rationale for providing a space. The fee is calculated at a 95 percent office space occupancy level.

low, this fee is much greater than the previous one. The fees presented assume that parking utilization would not change if parking charges were instituted--a very conservative assumption. If parkers were charged the full cost of providing a parking facility, fewer would drive, meaning that the cost burden of providing parking would be borne by an even ***smaller*** group than currently park at the site. This would result in an even higher ***utilization adjusted break-even fee.***

Table IV-3: Parking Economics of Sites in Randomly Selected Communities

| Site Name and Location | Swift Building, Oxnard | Systemhouse, Ccrritos | Toshiba, Irvine | Stewart Plaza, Upland | Rancon Building, Temecula |
|---|---|---|---|---|---|
| Capital Cost (per space) | **$5,858** | **$4,564** | **$7,839** | **$7,035** | **$8,425** |
| Operating Cost (per space per month) | **$3.33** (est.) | $1.65 (est.) | $1.65 (est.) | $1.65 (est.) | $1.65 (est.) |
| Break-Even Fee (monthly, per space fee to amortize the capital cost and recover the operating cost of ***one parking space)*** | $49 | **$37** | **$6'2** | **$56** | **$66** |
| Utilization Adjusted Break-Even Fee (monthly, per **occupied** space fee to amortize the capital cost and recover the operating cost for the ***parking facility)*** | $71 | **$73** | $129 | $131 | $143 |
| Cost of Parking to Tenants | No separate charge | No separate charge | Owner Occupied | No separate charge | No separate charge |
| Cost of Parking to User | $0 | $0 | $0 | $0 | $0 |

The parking facilities in the randomly selected sites have a ***break-even*** fee of between $37 and $67 from ***each*** parking space provided, with an average of $54 per month. None of these sites had any explicit charges for parking, either as charges to tenants or charges to commuters who park. Therefore, the developer/property owner must find revenue or cost reduction equal to $54 per month or $648 per year to pay for the cost of providing ***each*** parking space. Where does this money come from? At least two explanations are possible--developers pass these costs on to tenants in the form of higher office space lease costs (if the market supports it), or property owners who sell sites to developers lose value because the use of their land is burdened with the obligation to provide much more parking than is demanded by the users of the building.

As noted, the $54 per space would provide sufficient revenue to pay for parking only if each space could generate revenue. However, this group of case studies had an average peak occupancy level of 52 percent. ***The utilization adjusted break-even fee*** for these sites ranges between $71 to $143 per space per month, with an average of $109 per month or $1,313 per year. Any revenue level per occupied space lower than $109 per month means that parking is being subsidized.

This parking cost data is strikingly at odds with common perceptions about the cost of providing parking. Because market prices are rare in suburban areas, most people perceive that parking has little cost. This analysis shows the large underlying subsidy given to automobile commuters in suburban offices. Under these circumstances, it is not surprising that attempts use financial incentives to convince commuters to change modes often fail.

No commuter pays ***any*** cost for parking in these case studies. No employer pays a separate charge for parking. Drivers did not receive a market signal about the cost of providing parking, nor could they recoup any of this hidden subsidy by changing travel modes. Employers, because of the structure of their leases, did not receive a market signal about the value of parking, nor could they recoup any of this hidden cost if they convinced their employees to rideshare and used less parking. This lack of price signals and information flow is key to the problem of suburban parking policy. The problem has two roots--the common practice of not charging tenants or commuters for using parking, and the oversupply of parking that has resulted from local jurisdictions' zoning requirements.

Table IV-4 (next page) summarizes the parking economics of the purposefully selected sites.

Table IV-4: Parking Economics of Purposefully-Selected Sites

| Site Name and Location | Tishman Building, Los Angeles | 2529 Foothill, LA County | Building A, Brea | Building B, Costa Mesa | Wells Fargo Tower, Irvine |
|---|---|---|---|---|---|
| Capital Cost (per space) | $7,060 | $3,750 | $7,790 | $15,675 | $8,928 |
| Operating Cost (per space per month) | $5.60 | $1.60 (est.) | $2.90 (est.) | $12.50 (est.) | $8.15 |
| Break-Even Fee (monthly, per space fee to amortize the capital cost and recover the operating cost of ***one*** parking space) | $60 | $31 | $63 | $134 | $77 |
| Utilization Adjusted Break-Even Fee (monthly, per **occupied** space fee to amortize the capital cost and recover the operating cost for the ***parking facility)*** | $84 | $44 | $65 | $235 (not inc. revenue from Arts Center) | $120 |
| Cost of Parking to Tenants | No separate charge for unreserved, $70/month for reserved | No separate charge | No separate charge | $60 per month | Some pay--usually deferred in lease |
| Cost of Parking to User | $30 for solo driver; $0 for carp001 | $0 | $0 | Depends on tenant-btwn, $0 & $125/mo | Depends on tenant-btwn. $0 & $110/mo |

The three purposefully selected sites with surface parking have similar parking fee structures as the first group of case studies. However, two of these projects have the lowest utilization adjusted break-even fee. The 2529 Foothill project has low parking cost and relatively high parking utilization (because 2.5 spaces per 1,000 square feet was provided), resulting in a $44 per month utilization adjusted break-even fee. Building A has high parking utilization, so the break-even fee and the utilization adjusted break-even fee are almost identical ($63 and $65 respectively).

The two projects with large parking structures (Building B and the Wells Fargo Tower) show the parking costs found in higher density suburban buildings. Under these circumstances there is a greater economic incentive for developers to optimize parking supply when they are building

structures--each additional unneeded space has a greater impact on the project's financial return. In these projects, parking access is controlled, and there are market prices for parking. Employers and commuters may pay part of the cost of parking.

Travel Characteristics

Mode choice data was obtained from secondary sources, when available, and from estimates made by employers and building managers. The primary secondary source is Regulation XV rideshare plans, which must be prepared by all employers having over 100 employees at a given worksite. Tables IV-5 and IV-6 summarize these data. The average vehicle ridership (AVR) shown in the table is a measure used by the South Coast Air Quality Management District. It is an expression of the number of persons commuting to the site between 6:00 and 10:00 am, divided by the number of vehicles used in commuting to the site during the same time period.

Table IV-5: Mode Share of Sites in Randomly Selected Communities

| Site Name and Location | Swift Building, Oxnard | Systemhouse, Cerritos | Toshiba, Irvine | Stewart Plaza, Upland | Rancon Building, Temecula |
|---|---|---|---|---|---|
| Type of Data and Source | Building Manager Estimate | Tenant Estimate | Reg XV plan, sole tenant | Tenant Estimate | Tenant Estimate |
| Solo Driver Mode Share | At least 95% auto commuting | At least 95% auto commuting | 78% | At least 95% auto commuting | At least 95% auto commuting |
| Carpools/Vanpool Mode Share | | | 18% | | |
| Transit Mode Share | <5% | <5% | 0.5% | <5% | <5% |
| Regulation XV AVR | N/A | N/A | 1.1 | N/A | N/A |

Table IV-6: Mode Share of Purposefully-Selected Sites

| Site Name and Location | Tishman Building, Los Angeles | 2529 Foothill, LA County | Building A, Brea | Building B, Costa Mesa | | Wells Fargo, Irvine |
|---|---|---|---|---|---|---|
| Type of Data and Source | Reg XV plan, sole tenant | Tenant Estimate | Reg XV plan, sole tenant | Reg XV Emp. #1 | Emp. #2 | Reg XV plan, one tenant |
| Solo Driver Mode Share | 45% | At least 95% auto commuting | 65% | 91% | 73% | 91% |
| Carpool/Vanpool Mode Share | 52% | | 33% | 8% | 20% | 8% |
| Transit Mode Share | 2% | <5% | 0.5% | 0% | 2% | 0% |
| Regulation XV AVR | 1.4 | N/A | 1.2 | 1.02 | 1.2 | 1.05 |

The tables show that automobile commuting is the dominant travel mode, and that those commuting by automobile primarily drive alone. Where there was significant ridesharing, it took the form of carpooling. Cases where actual data on carpooling is available show an average mode share of 23 percent for carpooling. Transit ridership was insignificant all sites, because of the low levels of service available. The average transit mode share at those sites where Reg XV data was available was 0.8 percent. Transit service was limited and headways were long, which in turn reflects the difficulty of serving low density employment centers and a dispersed workforce.

There is considerable variation in ridesharing levels among the case studies. The most striking example is 20th Century Insurance (Tishman Building), which has instituted parking charges and has experienced large increases in ridesharing. This policy is described further in Chapter VII. That chapter also reviews pay for parking and commute allowance examples in Building B in Costa Mesa.

Correlation Analysis

Correlation coefficients are calculated for some of the data reported in the last two chapters to assist in the identification of relationships between parking variables. These correlations also provide a basis for hypothesis development, statistical tests and modelling on larger samples. More detailed tests and modeling are not appropriate for this study because ten cases is a small sample size.

These correlation coefficients measure the degree of variation around a linear least-squares equation. They vary between -1.0 and 1.0, the former indicating a strong negative relationship and the latter indicating a strong positive relationship. Values close to zero indicate that no linear relationship was present. For this group of case studies, correlation coefficients greater than 0.55 or less than -0,55 are statistically significant at a 95 percent confidence interval; values greater than 0.48 or less than -0.48 are significant at a 90 percent confidence interval.

The data reveal significant correlations in many expected relationships. The first group of correlations concern the variables that describe the case studies. For example, the correlation between building size (gross square feet) and density (FAR) is 0.83, indicating that the larger projects have higher densities. There is also a positive correlation between the capital cost of parking and measures of building size and density (gross square footage--0.78; FAR--0.83). The larger projects in the study are built on more valuable land, which affects density goals and parking strategies.

The previous tables summarizing parking requirements and parking supply show that most but no all developers built the amount of parking required by zoning ordinances. The correlation coefficient between required parking and the amount provided is 0.60. Table IV-7 shows correlations for selected parking variables.

Table IV-7: Pearson Correlation Matrix for Selected Variables in Ten Case Studies

| Variable | Parking Provided | Parking Required | Parking Demanded /1,000 gfa | Parking Demanded /Employee |
|---|---|---|---|---|
| GSF | -0.25 | -0.47 | -0.21 | -0.63 |
| FAR | -0.45 | -0.31 | -0.30 | -0.48 |
| Employee Density | 0.45 | 0.10 | 0.74 | -0.49 |
| Capital Cost | 0.07 | 0.16 | -0.11 | -0.65 |

This analysis confirms the ITE parking generation study findings that parking demand is lower (on a per unit basis) in larger buildings. The coefficients for building size (GSF) and density (FAR) are negative across all the parking variables. Larger, more dense buildings have lower parking demand per unit of measurement.

Employee density shows positive but insignificant relationships with the level of parking provided and parking required. Either cities' requirements do anticipate employee density, or employers having high employee densities select projects in locations with high parking supply. The relationship between employee density and parking demand per 1,000 square feet is the strongest correlation in the table. High employee density translates to high parking demand per square foot of building area. This points to the weakness in using square foot of building area as the basis for establishing parking requirements--such a standard cannot address varying employee density levels. Finally, employee density is negatively correlated with parking space demand per employee, indicating perhaps that the type of employers that have high employee densities have greater ridesharing and/or less visitor parking.

Capital cost is negatively correlated with the level of parking demand. This suggests that the cost of providing parking does have a bearing on parking demand. The two projects with the highest capital cost for parking have some type of parking charges--either to tenants or commuters.

# CHAPTER V
# PUBLIC AGENCY PERSPECTIVES ON PARKING

## Local Perspectives on Parking Requirements

The research revealed that municipalities are influential actors in establishing parking supply levels, and that they strongly affect private entities' decisions about pricing parking. Zoning code minimum requirements were the strongest determinant of the supply of parking in the ten case studies. This is not to say that other actors, such as tenants or lenders, would not make parking supply demands if zoning code minimums did not, but in most cases those actors' judgements have been superseded.

The minimum parking requirements for the office developments in the communities studied ranged between 2.0 spaces per 1,000 square feet to 5.0 spaces per 1,000 square feet. The commonly used measure was gross floor area. This variation is greater than that usually found in Southern California cities--most cities' requirements fall in the 3.3/1,000 to 4/1,000 range. In most of the cases, the zoning codes do not offer procedures for allowing less parking to be built. No city studied established maximum parking standards, although they have been proposed for the new Warner Center Specific Plan.

For most cities studied, suburban parking requirements were not an important issue. Their requirements generally mandated an oversupply of parking, so most cities were not experiencing problems with parking overspill or inadequate parking. Constituents rarely complained about parking problems in office developments. In many cases, developers were not concerned about the requirements, so planners received little pressure to examine parking requirements for office buildings. However, in the City of Los Angeles the lower office parking requirement (2.0 spaces per 1,000 square feet) has led to controversy about parking supply levels.

Some cities do pay more attention to office parking standards. For some, parking policy is tied to transportation, transit development, urban form objectives. The City of Irvine has been pursuing coordinated land use and transit development schemes, and sees parking policy as potentially supporting those schemes. For others, growing concerns about traffic congestion and air pollution has spurred an examination of parking issues. Brea recently adopted a TDM ordinance that allows the city to enact site-specific requirements related to parking when a discretionary action is required. Those requirements could include pay-for-parking schemes or reductions in parking supply based on ridesharing achievement. After Brea gains experience in applying these requirements on a case-by-case basis, they may be adopted as part of the parking code provisions. One recent project has been required to charge its employees for parking.

In general, more attention was paid to parking requirements for uses ***other*** than office buildings--multi-family residential, retail, and other special uses--because it is in those areas that cities have experienced problems. For example, Irvine undertook a comprehensive review of its parking requirements in 1981, but the original data collection concerned multi-family residential, not office uses.

How are standards set? Many cities indicated that they relied on "industry standards'!, ITE averages, and research on what neighboring cities are doing. Many city officials said that they do not have

the time or resources to do original parking studies. A planner from Temecula said that typically planners choose a standard that is in the middle of the range of other neighboring cities. The ITE parking generation handbook was widely cited as a reference. Most planners indicated that the planning department would take the lead in proposing new parking requirements, with the review of engineering and transportation departments, as applicable.

As mentioned, all cities studied had minimum parking requirements (rather than letting the market determine parking supply). City planners justified minimum requirements in a number of ways. First, they require off-street parking to avoid traffic congestion on the street. The idea is that adequate parking allows vehicles to be quickly stored without affecting street traffic. Planners were also concerned about the uses of a building over its life--some acknowledged that while most tenant compositions do not use the full parking supply, activities with high employee density might use the full required amount of parking. Many cities would prefer an oversupply to a possible future undersupply because they usually do not have recourse to address parking problems after a certificate of occupancy has been issued.

Cities in California are very concerned with maximizing their sales and property tax revenues, and therefore have a strong interest in the success of commercial developments. As a result, city officials may impose minimum requirements based on their perception of the market demands, replacing the developer's judgement about marketability with their own.

There was considerable variation in the sophistication of the parking requirements, but generally they were not finely tailored to office use characteristics. For example, Upland's parking requirements were quite general, and the base requirement had not been reviewed for decades. Upland's requirements were the highest of any City studied (5.0 and 6.6 per 1,000 leasable square feet, depending on site size).

In the City of Los Angeles, the 2 space per 1,000 square feet requirement was established in 1946 for all non-residential uses. Many changes have taken place since then, but the basic requirement for office uses has not changed. The City recently increased its parking requirement for some commercial uses to 3 spaces per 1,000 square feet, but office developments were exempted from this change after opposition from TDM and transit advocates. A striking element of the Los Angeles ordinance is that it imposes the same parking requirements in most areas of the city, except for downtown. Land use, density and development history vary widely in Los Angeles (the population is 3.5 million), but the minimum parking requirements are not tailored to conditions in the many communities that make up the city. (Some Los Angeles specific plans do modify these rates.)

An improvement to a standard office building parking requirement is one that reflects the building's specific characteristics. For example, Costa Mesa has had a 4 space/l,000 square foot requirement since the 1970s, but in 1985 added a lower 3.0 space/l,000 minimum requirement for larger buildings. Larger buildings require fewer spaces on a per square foot basis. This reduction was initiated by the City because of their experience that the upper floors of parking structures in the Town Center area were almost never occupied. Also, Irvine's ordinance reduces the minimum requirement from 4.0 spaces/l,000 square feet to 2.0 spaces/1,000 square feet for any portion of a building greater than 250,000 square feet.

Irvine's ordinance also includes provisions for reducing parking by up to 20 percent if ridesharing plans are implemented. However, few developers have acted on this provision. The City of Los Angeles also has provisions for parking reductions if sites are near transit facilities, or if a TDM program is implemented, but they have rarely been used. A key issue in these provisions is the conditions, costs or fees that developers are asked to bear if they take advantage of them. In the case of Los Angeles, the conditions and potential costs associated with reducing parking have been perceived by developers as greater than the potential benefits.

Shared parking is also recognized in some cities' ordinances. The Building B project in Costa Mesa took advantage of those provisions. The parking for this project is shared with a performing art center. The city used ULI publications as guides for establishing the requirements, and established limits on the operation of the performing arts center to ensure that parking was sufficient for both uses. This sharing of parking results in a more efficient use of the parking facility. It was spurred in part by land prices that dictated a parking structure. The Wells Fargo Tower also used shared parking provisions.

Most city officials interviewed believe that developers are willing to supply the minimum code requirement. Requests for variances to build less than code parking are not common, and are not generally reviewed favorably by city officials. Some planners actively discourage developers from applying for variances to reduce parking. In some cities, such as Temecula, the city council is not inclined to grant variances from minimum parking requirements. Other city officials said that developers complain about minimum requirements, but do not generally seek variances. The exception in the case studies was Upland, where the parking requirement for some office uses is so high (6.6 spaces/l,000 leasable square feet) that economic pressure spurred some developers to seek approval to build less than code requirements.

The Manager of Special Transportation Projects in Irvine indicated that no developer has yet requested a reduction in parking in exchange for developing a TDM plan under the ordinance provisions. He indicated that developers tend to supply what the market requires and that market forces and lender requirements are important factors in determining parking supply. In most cases, developers supply the amount of parking required by code, and not more or less. The 4 spaces per 1,000 square feet required by the city is the same standard used in the office market and development industry. He said that while the city would like to see more innovative parking measures used, it is also concerned that the Irvine office market remain competitive with other cities in the area. If the parking becomes undersupplied, tenants will locate in adjacent cities where more parking is available.

Planners were asked to interpret council members' and citizens' attitudes about parking. Because parking is not a problem in most communities, it is not a major issue for the council or citizens. The exception is Los Angeles, where parking requirements are the lowest and where office development is occurring in the residential communities in the San Fernando Valley. Citizens and city council are very concerned about spillover parking in those areas. For most other areas, however, concerns about traffic congestion far overshadow concerns about parking. The two issues can become linked because some perceive that plentiful, free parking reduces traffic congestion (by reducing on-street parking, and time spent searching for spaces). However, the evidence about the effect of free parking on mode choice suggests the opposite--that plentiful free parking increases solo driving,

thereby increasing congestion.

In Los Angeles, the Planning Commission favors parking reductions to encourage transit use, but the city council is more conservative. Many council members have dealt with spillover parking problems in some parts of the city, and are quite conservative when it come to parking supply issues.

City officials from Irvine indicated that parking can be a controversial issue within the city, and is strongly affected by the political orientation of the council. The current city council takes a traditional minimum-supply orientation to parking. However, the city has goals to develop fixed rail transit service, and sees parking management as potentially contributing funds that those systems (e.g., in lieu fees for parking used for transit development).

Most of the cities studied ban or severely limit on-street parking on major roadways. Overspill parking can only occur in these communities on local streets or in nearby off-street facilities provided for other uses. Those cities that did permit on-street parking did not price the use of that parking resource.

Most of the public sector innovation in parking requirements was found in the purposefully-selected projects. In the randomly selected communities, parking policy was not an important issue.

Local Perspectives on Land Use Policy

Most cities officials interviewed viewed parking as a necessary support to land use activities, but not as an integral part of land use policy. They generally did not make connections between minimum parking requirements and urban form, transportation mode choice, and development density issues. However, there are exceptions, such as Irvine. That city is interested in coordinating parking policy with transit development, TDM, and urban form.

There may be some instances where zoning code minimum requirements are not the public policy that has driven parking supply. This can occur when building setback requirements or FAR restrictions result in a large area of land that cannot be used for building footprint. In that case, developers might over-provide parking simply to use land they cannot use for other purposes. None of the cases studied involved this phenomenon. Minimum parking requirements were the primary factor that limited the size of building that could be constructed, not setbacks or FAR requirements.

Transit Operator Perspectives

Public transit operators serving the study sites were contacted regarding their attitudes about parking, including pricing, supply and project design. The larger transit operators are well aware of the link between parking policy and transit. However, the interviews revealed that transit agencies currently play a relatively small role in project-level decisions, lacking power to influence local land use decisions. However, the responses reveal considerable effort and interest in this issue.

The most immediate level that transit operators are involved in is reviewing development plans to determine service requirements, bus stop locations, turnouts, etc. Safety issues are also raised in this

level of review. The cooperation the transit operator receives depends on the attitude of city officials. One transit operator indicated that some cities have resisted transit planning initiatives, such as developing transit centers, on the ground that it would draw the kind of customers who "ride buses". Some of the officials from transit agencies experienced frustration in trying to influence development patterns (including parking and access) so that the sites can be more effectively served with transit.

Transit operators are often involved in development projects when they provide comments during the environmental review process required by the California Environmental Quality Act (CEQA). The lead agency for a project must address these comments in any negative declaration or EIR. The larger transit operators often provide comments about a project's parking. For example, the Southern California Rapid Transit District has provided comments such as the following:

- Orient building footprint so that the building is close to the street and the parking is located behind.
- Provide amenities for transit riders and pedestrians, such as walkways and shelters.
- Limit the amount of long-term parking provided by projects.
- Institute a cash-out commute allowance program.
- Use shared parking when appropriate.

Transit operators have difficulty getting these modifications implemented. Some cities chose to ignore the comments. Further, the transit operators are rarely at the table when development projects are designed or when key provisions are negotiated.

In Southern California, both the SCRTD and the Orange County Transportation Authority (OCTA) have devoted some resources to advocate parking issues. The OCTA recently commissioned a series of three guidebooks for parking management--for cities, developers and employers. This kind of educational effort can help raise awareness of the connections between parking design and management, and transit.

# CHAPTER VI
# DEVELOPER AND PROPERTY OWNER PERSPECTIVES

## Overview

This section summarizes the perspectives of the private sector actors involved in developing and managing a development project, including developers, property owners/property managers, lenders, leasing agents, and parking operators. Each actor approached parking from a different perspective, but there was considerable consistency in their views about parking. Differences in views were often related to variations in the scale and density of the project studied. The larger and more dense the project, the more likely that parking supply was scrutinized, parking charges existed, and parking management schemes were implemented.

## Developer Perspectives

How do developers determine the amount of parking to provide? Developers generally said that they follow city codes, and evaluate those requirements in light of the specific type of development and their own experience. There is a natural tendency to build to the level of the competition. If zoning requirements are lower than what the competition is providing, then developers often build to the market.

In smaller projects, the project architect has input on the parking facilities provided. For larger projects, especially those involving parking structures, a parking consultant is more likely to be retained. The developer of Rancon Building (Temecula) indicated that they used space planners to help analyze the likely employee density within the building--this affected their deliberations on the number of spaces to provide. Sometimes developers build parking to exceed minimum requirements, if municipal requirements are lower than industry standards (this occurred in the Tishman Building case study). Also, some developers said excess parking would be perceived as a plus in project marketing, and said they would provide it if possible (Rancon Building, Temecula; Stewart Plaza, Upland).

The developer of the Wells Fargo Tower explained that for large projects, more parking than required may be built as the result of construction phasing and site considerations. That developer is providing a three-phase parking structure, matched to each development phase. Parking is currently about 30 percent oversupplied because of the size of the bays and design phasing issues. Similarly, the Toshiba site currently over-provides parking, but a future expansion will eliminate that oversupply. A building that is mid-point in a multi-phase project may be substantially over-parked for this reason.

The most common parking supply "rule of thumb" cited by developers was 4 spaces per 1,000 square feet. Developers said that this is what most cities require, what potential tenants most often request, and what lenders are used to. One developer called 4.0 spaces per 1,000 square feet the "magic number". Unfortunately, the parking utilization studies show that it is not magic--usually substantially less parking is demanded. One developer acknowledged that while the 4.0 space per 1,000 square foot standard is appropriate for two and three story buildings, it results in an oversupply for larger buildings. The Koll Company commissioned parking utilization surveys for one of its large Irvine

projects (1 million square feet), and found that the true parking demand was about 2.5 spaces per 1,000 square feet.

Ease of use and quality of design are also important factors for developers. If some spaces are difficult to access, even a project that has over-provided parking may be perceived in the market to have parking problems or a parking "shortage". Larger parking facilities may have problems with the number of turn movements required to access the facility and the amount of travel required within the structure. In the Systemhouse case study the developer designed parking so that parkers would not have to walk more than 300 feet to get to the building. Finally, covered or structure parking is sometimes perceived as an important amenity by tenants, and distinguishes market segments. On the other hand, some developers reported that suburban commuters resist using structure parking.

Developers balance providing an amount of parking that will seem adequate, convenient, and easy to use with trying to maximize the square footage of development they can build. In speculative buildings, the developer is unaware of the final tenant composition of the building, and therefore may fear building a project that does not have enough parking for tenants. This may occur when an office building leases a significant amount of space to retail and service-retail uses that require more parking. The Stewart Plaza project in Upland is an example of a project that leased up with more retail uses than originally anticipated. However, no parking shortage has occurred. The owner of the Swift Building in Oxnard noted that the project experienced temporary parking shortages when labor-intensive tenants are in the building (this project has 2.5 spaces per 1,000 square feet). Uncertainty about the parking demand of future potential tenant(s) may cause developers to supply more parking than is normally used.

Developers are also concerned with trends in office space employee density. For example, the developer of the Rancon building noted that increased automation in office uses, especially due to computers, is increasing employee density. The density in some office buildings may be 5.5 employees per 1,000 square feet. As example of such a high employee density use is insurance companies with claims processing departments. The Rancon developer would consider a 6 space per 1,000 square foot parking ratio for such a building.

Developers working in areas that have substantial commercial development and higher densities (such as Irvine and the Cerritos Town Center) noted that parking shortages can be addressed by making agreements with other land uses. The two Irvine business complexes have a large inventory of parking, so neighboring sites can help address site-specific parking shortage problems. This potential for sharing parking reduces the risk to developers of undersupplying parking. The developer of Building B, in Costa Mesa, believes that eventually projects in high density suburban employment centers may be built without any parking, because such a large inventory of parking has been built by previous projects. However, this developer felt that it would be difficult to get city officials and lenders to agree to such a proposal.

The developers of projects in lower density, fast growing areas were most skeptical about the merits of reducing parking supply from traditional levels. Their assumption was that almost every employee will drive, and they do not foresee significant changes in mode choice. These developers are farthest from the transit development activities occurring in core of the region, and because their projects are

smaller, they are less likely to have tenants who must comply with the Regulation XV ridesharing mandate. For example, the developer in Temecula felt that most workers would continue to drive alone and expressed the most favorable attitudes about the marketing benefits of oversupplying parking.

City minimum parking requirements are usually closely followed by developers, and they relatively seldom seek variances to build less than code. The developer of the Koll project indicated that some cities require exactions for parking reductions. For example, if a stall is worth $5,000, the city may ask the developer to pay a $3,000 in-lieu fee to fund transit. City officials feel that reduced parking requirements in turn reduces the developer's cost, and therefore should be desirable. However, the risk to the developer of gaining approval for reducing parking (and marketing a building with less parking) may outweigh the comparative cost advantage. The City of Irvine, for example, hopes to fund transit development in part through in-lieu fees from parking reductions. Cities should carefully establish these in lieu fees to avoid making them prohibitively high, thereby ***discouraging*** reductions of parking when they are appropriate.

Developers who build to city or lender-established minimum requirements may seek greater efficiency in providing parking by altering the size of spaces or the percentage of compact spaces. These efficiencies are carefully balanced against reductions in the convenience of the parking facility.

When the minimum code requirement is less than the normal demand, developers sometimes build more than the minimum requirement. The Tishman Building was subject to the Los Angeles 2 space per 1,000 square feet requirement, but the developer chose to build 3.3 spaces per 1,000 square feet. The developer judged that amount to be the minimum required to successfully market the building. However, this does not always occur. The 2529 Foothill project just met the minimum 2.5 spaces per 1,000 square feet Los Angeles County requirement, and the Swift project built 2.5 spaces per 1,000 square feet as well. Not all developers will chose to build to the 4.0 spaces/1,000 square foot level. This is sensible, because the actual demand exhibited at those site is much closer to 2.5 spaces per 1,000 square feet.

Developers were asked about their perceptions of cities' goals for parking. They perceive that cities are most concerned that a project may lack parking spaces, and therefore cause overspill parking problems. They also perceive inertia in local parking requirements. One developer said the reason for suburban parking oversupply lies primarily with cities--either by being inflexible or seeking too much revenue from parking reductions. Real estate analysts echoed this view. Developers and real estate analysts also said that city requirements are responsible for the overall land use organization of the suburbs, which in turn has caused reliance on the automobile and necessitates a high parking supply.

Developers said that cities hold on strongly to the notion that every development must be required to build parking, even if a large oversupply is nearby and available. This leads to a circumstance where a city believes it should "get something" in lieu of parking, instead of the notion that developers should be allowed to make whatever arrangements for parking that are most efficient, even if it means no on-site parking.

Developers gave a variety of accounts about lenders' concerns with parking supply. The predominant view was that lenders usually accept parking plans as proposed as long as they meet city codes. Others, who had tried to work with lenders to have them accept less parking, indicated that lenders have been quite conservative in the past and have been unwilling to consider reductions unless shared parking or transit use can be conclusively proven. One of the real estate analysts interviewed indicated that it was difficult to finance a project having less than 3.7 spaces per 1,000 square feet because of the strength of the 4.0 spaces per 1,000 rule of thumb among some lenders.

The economic problem with oversupplying parking is that it usually provides no income, and therefore hurts the financial performance of the building. It wastes land and increases maintenance costs, insurance and taxes. Developers indicated that additional landscaping adds more value to a project than additional parking area. On the other hand, parking undersupply results in frequent tenant complaints and additional property management tasks (assuming, of course that the developer can find tenants).

Developers and real estate analysts were asked how they value suburban parking. One method is calculating the replacement cost--amortized land and construction costs, plus annual operating costs. Income methods of valuing suburban parking are of little use. Since suburban parking usually generates no revenues, its value based on income is technically zero. However, its real value is that it makes the project marketable. Therefore, a typical suburban parking facility should be valued in terms of its contribution to the value of the entire project.

Without on-site parking, the income generated by an office building would be substantially lower. Too much parking may be a small marketing advantage, but beyond a certain point adds nothing to the value of the project. Surprisingly little research and sensitivity analysis has been conducted to estimate the amount of parking that maximizes overall rates of return.

Property Owner/Property Manager Perspectives

Property owners and managers are concerned with efficiently running the facility and avoiding tenant problems. As buildings approach full occupancy, building owners see parking as key factor in maintaining tenant satisfaction with their office space, and therefore retaining tenants.

Even in a case where no parking access control is used, such as Systemhouse in Cerritos, lease provisions include two kinds of agreements. The first is the right of the tenant to use a certain number of spaces (even though no explicit charges are made). This is not closely monitored, but is included in case a potential future shortage causes conflict. The second aspect is a parking license agreement that covers rules and regulations concerning using the parking spaces.

One property manager gave an example of the difficulties encountered in charging for parking at a site (not studied here) that has surface parking. In that case, there was considerable tenant and employee dissatisfaction. Tenants left the project because of the parking charges. Employees broke the control gates, creating maintenance problems. A single employer must carefully design pay-for-parking schemes, especially if competitive areas offer free parking.

In the higher density projects studied, some property owners do charge tenants for parking. In the Wells Fargo project, the property owner asks for $50 per stall per month, charged separately in the lease. Tenants can vary the amount of parking they are allocated. However, that owner has not been able to charge these fees for the full term of the lease; they usually apply them in the latter years of the leases and apply them more fully in longer-term leases. This is because of the current weakness in the market for office space. Free parking is used as a concession in lease negotiations. The $50 parking charge, even when applied, does not cover the developer's cost to provide the space.

In Building B, office spaces leases do not include parking. Tenants lease the parking they need from the parking operator, or in some cases commuters lease the spaces directly. Property owners can separate parking charges from the cost of leasing the office space, as shown in this example. This practice sends an economic signal to tenants about the cost of the parking that their employees utilize. The case studies did not reveal a clear reason why the development community uses parking charges as a lease concession, rather than separating parking charges and charging a lower lease rate. Perhaps this practice has evolved because lenders and investors assign more emphasis to lease rates than total revenues when evaluating a project's desirability.

Lender Perspectives

Lenders' concerns about parking supply are based on their need for the project to generate a cash flow that minimizes the risk of the developer defaulting on the loan. Therefore, any aspect of parking that lenders perceive to increase the risk of the project may be an issue in gaining a loan commitment. Examples of those risks include a project that is perceived in the market to be undersupplied with parking, a project with poor parking design or access, or a project that may have parking problems sometime in the future. Any of these conditions can reduce occupancy levels or lease rates, lowering net operating income and increasing the chance of a default.

One lender indicated another reason why generous parking requirements may be favored by some lenders. When there is a large supply of surface parking, land value is a larger proportion of the loan. This reduces risk of the loan, and gives the lender more flexibility to consider potential future uses of the site.

Because of these concerns, lenders are often cited as a significant influence on parking supply levels. However, in most of the cases studied, ***the primary factor influencing lenders' parking supply requirements was local zoning ordinance requirements.*** Most lenders interviewed indicated they simply ensured that the development met local parking requirements.

However, some lenders indicated that they looked further than local parking standards. The lender for the Rancon building indicated that it usually follows city codes, but has its own rating scheme regarding parking supply: minimum--3.0 spaces per 1,000 square feet; standard--4 spaces per 1,000 square feet; and preferred-- 5.0 spaces per 1,000 square feet. That lender said they also consider the geographic area of the project, location in downtown versus suburban areas, the level of parking supplied by competitive projects, and transit availability.

The lender for the Systemhouse project provided some additional comments on the process used in

reviewing the parking provided in projects seeking financing. That lender has internal staff who review plans submitted for loans, and part of that review concerns parking. The factors they examine include building occupancies in the vicinity of the project, the level of automobile commuting expected, and whether there are properties near the site that could have reciprocal parking agreements. This lender could not recall an instance in the last nine years where parking supply had been a significant issue.

Leasing Agent Perspectives

Lease agent comments echoed those of developers and building owner/managers. In smaller communities such as Temecula, the lease agent felt that free parking supplied at a 5.0 space per 1,000 square feet rate was needed. Lower parking supplies and parking charges were perceived as being at odds with the "rural" character of the community. Most leasing agents did not perceive that an oversupply of parking could be a problem at all.

A lack of parking can be a problem in attracting and retaining tenants. This problem may only emerge after a few years of operation, when the building approaches full occupancy. At that time, some of the leases may be coming up for renewal, and the building owner may have difficulty retaining those tenants.

In small projects, specific parking spaces are usually not allocated to tenants. However, the lease may allocate spaces in case a shortage emerges in the future. In larger buildings, lease negotiations include the number of spaces allocated to each tenant. In the Wells Fargo Tower, spaces are generally allocated on the standard 4 spaces per 1,000 square foot basis, and tenant can ask for a larger allocation. If they are a large tenant they have the leverage to gain more spaces. However a small tenant with high parking needs might experience difficulty in gaining this commitment.

Parking is often a key element in project negotiations. Because there is currently an oversupply of office space in the region, potential tenants are in strong position in lease negotiations. Some leasing agents perceive that it is difficult for the developers to institute separate charges for parking if none of the competitive projects are doing the same.

Parking Operator Perspectives

Only three sites studied employ a parking operator: Tishman Building, Wells Fargo Tower, and Building B. In each of these instances either commuters or employers pay part of the cost of parking. Some of the other sites have controlled access, such as the Swift building, but do not employ a parking operator.

In the Tishman Building, the parking operator manages the parking facility for the building owner on a reimbursement basis. It manages and controls the facility, collects money from visitor parking, conducts accounting and reporting functions, and solves day-to-day parking operation problems. The parking operator also conducts price surveys of nearby buildings to determine what they should be charging for parking.

Some parking operators are also involved in the design of the project. In the Wells Fargo Tower, a parking operator assisted the developer in determining how many spaces to provide and in functional parking design. Parking operators can also alert project designers to potential parking operation problems.- In this project the parking operator is paid operating costs (about $8 per space per month) plus a management fee.

Shared parking has led to parking management challenges in some instances. For example, the Wells Fargo Tower shares its parking with a health club. When the project was opened, there was conflict between office space parkers and health club parkers--not for spaces but for ease of access. Health club parkers did not have key cards, and therefore slowed access through gates for office workers.

# CHAPTER VII
# EMPLOYER PERSPECTIVES ON PARKING

## Employer Parking and Transportation Policies

Parking policy was a moot question for most of the employers interviewed. Most of them have always provided free parking to their employees, and view this as standard operating practice. In addition, most employers do not pay for parking separately in their leases. Employers did indicate that adequate and convenient parking was an important criteria in their site selection process.

Despite providing free parking, employers may still receive complaints from their employees about parking convenience. For example employees in the Toshiba building have complained about long walking distances from parking to building entrances. Parking spaces that are close to entrances are sought after and highly valued, and the company allocates close-in spaces to company executives. Parking is more than a space to park your car--it often conveys status in the organization.

Employers who do not pay a separate charge for parking in their leases have little monetary incentive to induce their employees to use less parking. If they increase ridesharing and therefore use less parking, their lease rates do not change until they renegotiate their leases. Of course, employers who charge their employees for parking receive revenue which is often used to fund rideshare incentives or commute allowances.

Employers' attitudes have begun to change in response to the South Coast Air Quality District's (SCAQMD) Regulation XV. Employers having over 100 employees at a worksite are required to institute rideshare programs, and a small number of employers in the region have responded by charging for parking. Regulation XV allows employers to propose their own rideshare strategies, and many initial plans involve incentives such as preferential parking, ridematching, and incentive schemes. However, if an employer does not meet the AVR target over a number of reporting periods, it is encouraged to investigate parking charges or commute allowance programs.

One case study was chosen specifically because of its high parking demand. Building A in Brea currently has a high parking demand because of its high employee density (8.2 employees/l,000 gla).[1] The building contains a single financial services tenant. Even though this project is generously supplied with parking (5.0 spaces/l,000 square feet), the employee density results in a shortage of on-site parking. To meet this demand, 50 additional spaces are leased in a nearby site. This employer has instituted ridesharing incentive programs with moderate success, but does not charge for parking. The tight parking on the site may also encourage ridesharing, because the lot is almost always full and reserved, preferential carpool spaces are provided.

Building A is the only example in the study in which on-site parking was insufficient. It shows the effect of high employee density on parking demand, which is present in a small subgroup of office

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1 This employee density is much higher than average, but not unprecedented. The 8.2 employees per 1,000 square feet is within one standard deviation of a national average reported by Gruen + Gruen (1986).

uses. These projects may use more than the standard 4.0 space per 1,000 requirement, and this can present a problem for cities (uneconomic land uses, overspill parking, etc.). Planners may recommend overly high parking requirements for ***all*** uses to cover the infrequent circumstance found in Building A. A solution to this problem is for the city to control employee density in a building through covenants, thereby reducing the risk of having a building with insufficient parking create traffic congestion and overspill parking problems.

In only two of the case studies do tenants pay separate charges for parking. As mentioned, most of the tenants in the Wells Fargo Tower pay for parking at some point in their lease. Parking charges are a negotiable item, and tenants generally pay only in the later years of their leases. Both tenants interviewed in the Wells Fargo Tower had not yet begun paying for parking, but indicated when they did so they would not pass those charges on to employees.

In Building B, the high density Costa Mesa project, parking is not provided for in the office space leases. Tenants (or employees) may lease parking at market rates in the garage. This is an ideal situation for parking management and transportation demand management. Either tenants (if they subsidize parking) or employees (if they must pay themselves) receive price signals on the market cost of parking. ***There is an immediate cost savings to either the employer or employee when a commuter switches from solo driving to a rideshare mode.*** In this building, the circumstance so common in other suburban projects does not exist--commuters who drive alone in part to take advantage of parking that the employer has indirectly paid for in the overall lease rate, and which cannot be "cashed-in" if not used.

The Building B case study includes a major tenant that does not subsidize its employees' parking, and one that provides a commute allowance program. The tenant that does not subsidize parking (Employer #1**)** is a professional services firm in which many employees do substantial work outside the office. Half the employees do not report to the worksite on a given day. Employees must pay the market rate for parking if they drive ($60 per month for unreserved spaces). This provides a price signal to commuters about the cost of automobile commuting that is usually absent in suburban areas. However, that price signal is still below that which would amortize the cost of providing the parking, because zoning regulations have forced an oversupply of parking in this project and the surrounding area. The existence of plentiful parking keeps the market price low. Despite not subsidizing parking, this firm does not have a significant level of ridesharing. Part of the reason is the high proportion of employees who work outside the office on tax preparation or audits. They believe that they must use a private automobile in their work, and find ridesharing very difficult. Only 8 percent of the firm's employees Carpool. For this firm, a $60 per month charge did not induce carpooling.

Employer #2 in the same building has a commute allowance program. This legal firm offers employees a $90 per month commute allowance, with an additional $20 per month available to those who rideshare. The after-tax value of this allowances exceeds $60 for most commuters, so they can use the money to park in the building at no cost to themselves. However, they are foregoing $90 per month income that can be used for other purposes (or $110 if they rideshare). This opportunity cost provides an incentive to rideshare without taking away free parking privileges from employees. This employer achieved a 20 percent carpool mode share and a 1.2 AVR, despite having a high percentage

of employees who need their car at work for work travel purposes. This employer experiences the inequity of current Federal tax law--the commute allowance is taxable income, while parking subsidies would be tax free.

The 20th Century Insurance Company (Tishman Building) is the largest example of an employer instituting a pay-for-parking scheme in the study, and is one of the first suburban Southern California employers to do so. The company had instituted a conventional rideshare program involving incentives such as preferential parking. This proved relatively ineffective. They then began to charge employees who drove to work two-thirds of the market price for parking. This $30 per month charge had a dramatic effect on mode choice--solo driving decreased 49 percent, with most of the diversion to Carpools (carpooling increased from 6 percent to 48 percent mode share (Soper 1989)). The most recent Regulation XV plan confirms the high level of carpooling to the site under the current policy (45 percent solo driving, 52 percent carpooling). The parking utilization data also confirm the effectiveness of this policy. Before the parking charges, the parking lot was often full and additional spaces were leased off-site. After the policy was instituted, peak parking utilization substantially declined. This firm has a high percentage of clerical employees.

Despite this admirable ridesharing performance, the firm does not benefit financially as a result of using less parking. The lease for the building does not separately charge for parking, and the lease rate is unchanged by the lower amount of parking used. This is why leases should be structured to separately allocate parking charges. Twentieth Century Insurance cannot recapture these savings until its lease terms are renegotiated.

There are some problems with spillover parking at the 20th Century Insurance site. Some employees park at a mall down the street from the site, apparently to avoid parking charges. This problem can occur when one facility charges for parking while others offer uncontrolled, free parking.

Employer attitudes about parking are a key factor in developers', lenders' and leasing agents' perspectives. If employers adopt other parking pricing and management strategies, they will begin to demand different levels of parking supplied in their projects and different lease provisions. Employers have been slow to do this in the past, but many now face, or will face, ridesharing mandates similar to Regulation XV. This may play a significant part in educating employers about parking policies, and bringing about changes in what they ask of developers.

<u>Transportation Management Associations/Organizations</u>

Two of the areas studied had active Transportation Management Agencies/Organizations (TMA/TMO). These non-profit groups are composed of employer members; they provide services to assist their members in transportation demand management. The TMAs having jurisdiction in the case study sites include Irvine Spectrum Motion TMA (Toshiba), and Warner Center TMO (20th Century Insurance).

The directors of these TMAs provided an overview of employer attitudes regarding parking. In general, they indicated that employers resist charging for parking. Many perceive that charging for parking would hurt employee morale, especially at a time when staffing levels and benefits are being

reduced because of the recession. No one employer wants to be the first to charge for parking. However, the Warner Center TMO director indicated that 20 percent of the employers in that employment center have instituted some charge for parking.

Most employers prefer to attempt to increase ridesharing levels through incentives, and see charging for parking as a last resort. This perception indicates that employers may not see the advantages of commute allowance option programs, in which employees could continue to park free, but would have the option of selecting the cash value of the parking subsidy.

TMA/TMO directors also indicated that employers are increasing the sophistication of their control of parking facilities, using card key systems with automated AVR tracking. Having instituted these systems, pay for parking and commute allowance programs can be more easily administered and monitored.

TMA/TMOs can play a major role in addressing parking issues, by sharing information on commute allowance programs that are effective, or helping members find ways to use excess parking. However, they are membership-funded organizations. Until employers demand new solutions to parking problems, only the most innovative TMA/TMOs will be leading this issue.

# CHAPTER VIII
# CONCLUSIONS AND POLICY IDEAS

This chapter offers a number of conclusions and policy ideas concerning suburban parking economics and policy. They are drawn from the ten case studies and the review of literature. Because the number of sites studied was limited to allow for adequate depth of analysis, statistical verification of these conclusions will require research on larger samples of worksites. These conclusions should be used as a basis for policy development and analysis by researchers, jurisdictions and developers.

The policy ideas provide suggestions on how suburban parking policies can be reformed. The status quo in parking policy, in which parking is over-provided and underpriced, brings with it many disadvantages. It wastes land resources, decreases density, encourages solo driving, and worsens environmental quality.

American suburbs have matured from their bedroom-community origins. They now have substantial employment, mixed land uses, and higher densities. They also have many urban problems, such as traffic congestion and air pollution. Because of this, it is time to rethink the simplistic approach to parking of past three decades. Parking should be seen as integral part of communities' objectives in economic development, community design, transportation and environmental quality.

## Conclusions

Parking is substantially oversupplied at suburban office worksites. The parking utilization at the five randomly selected case study sites is estimated to be 51 percent when the buildings are 95 percent occupied. The purposefully selected sites had a slightly higher utilization level, but showed the same pattern of oversupply. Most suburban office worksites have much more parking than is demanded.

Employers and/or commuters rarely receive appropriate price signals about the cost of providing parking. Most suburban office parking is free, despite its substantial cost. The lack of a price signal causes commuters to demand more parking than they are willing to pay for. Further, employers do not treat parking as a valuable resource because its cost is often hidden in lease charges. The ***Break-Even*** Fee for parking averages $54 per space per month for the five randomly selected case studies. This fee would cover the amortized capital costs, plus operating cost, of a single parking space. The ***Utilization Adjusted Break-Even*** Fee for the same facilities averages $109 per space per month. This fee covers the same costs, but recognizes that many parking spaces are not used, and therefore assigns the total costs of the parking facility to the ***users*** of the parking facility. These two measures of cost are higher yet in the purposefully selected case studies.

Cities often require developers to provide too much parking. By "conservatively" over-requiring parking, many zoning codes increase the cost of the development, encourage solo driving, lower density, and worsen environmental quality. When too much parking is required, parking management and pricing strategies become difficult to implement. How can a developer or employer charge for anything so oversupplied? Developers do not usually object to providing more parking than is needed because they are responding to inflated perceptions of demand held by themselves, tenants, lenders, and others.

Parking standards are usually not tailored to the specific use characteristics of office buildings. Rules of thumb and the requirements of neighboring cities often replace detailed analysis of mode choice, building occupancy, and daily use patterns in the particular city or subarea. Office parking standards are based on square footage of development, not the level of employment, and therefore are insufficiently sensitive to differences in use characteristics. Relatively few cities or developers have undertaken sophisticated parking demand analyses.

Parking policy is rarely an issue of political importance in suburban cities. Overspill parking is often an important concern, but that rarely occurs because most cities over-require parking. The effects of requiring more parking than demanded (e.g., wasting land resources, increasing solo driving) are usually not debated. Parking is largely invisible as a policy issue. Most developers have not pressed parking standards issues because they usually agree with the local requirements. However, developers in higher density areas are more concerned about the money wasted on unused parking spaces in parking structures.

Transit operators face a daunting task serving low density, overnarked employment centers. Transit ridership was insignificant in the sites studied. High parking requirements have kept densities low, and have made sites difficult to serve with transit. Parking reforms, such as halting parking oversupply and charging for parking, are unlikely to immediate ridership gains to transit, because the current service areas and headways render transit infeasible for most commuters to suburban office buildings. However, those parking reforms will help bring about long-term changes in suburban land use organization and transportation that ***can*** increase the role of transit. For example, densification, transit-oriented site planning, and mode changes resulting from passing the true cost of parking to commuters can help build transit ridership and service levels.

Some suburban areas have matured to the point where they resemble central business districts, and can use urban parking management strategies. This maturation brings higher land costs, densities, and a greater motivation for developers and cities to reform parking requirements and practices. In these areas more rigorous study of parking supply and demand is occurring. Innovations in suburban parking policy will occur first in these higher density areas.

Suburban parking policy is unlikely to change unless most of the actors involved in parking supply and management are convinced that change is desirable. For example, if a developer seeks to reduce parking supply to real demand levels, then lenders, leasing agents and potential tenants may perceive the project as risky, unless they too are convinced that less parking is needed. It is difficult for a single developer to change its approach parking unless other developers also do so. Similarly, if cities lower their minimum parking requirements, but developers are not convinced that the minimum is sufficient, they will build more than the minimum requirement.

Policy Options

A major emphasis in this section is local government reform of parking requirements. Reforming suburban parking requirements is a key element because the pattern of over-requiring parking makes parking management strategies difficult, and makes it unlikely that the other actors affecting parking will change their attitudes or practices. The policy options are intended to provide ideas that local

jurisdictions can test for feasbility. In addition, policy options are offered for developers, employers, the Federal government and local transit operators. Finally, suggestions are offered on educational programs that could lead to changes in suburban parking policy.

Local Government

Cities should reassess their commercial parking requirements. One option is to eliminate minimum requirements and let the market determine parking supply. In this instance, policies should be instituted to price or control on-street parking and to address potential overspill parking problems. If parking minimums must be instituted, then requirements should take into account two factors: 1) parking demand at a price that reflects the full cost of providing parking; and 2) specific office use characteristics and the characteristics of the surrounding land uses and transportation systems. Minimum requirements should reflect characteristics such as employee density, transit availability, and opportunities for sharing parking with existing uses.

As long as cities force developers to over-require parking, market charges will be infrequent and pricing strategies will be very difficult to implement. Cities need to integrate their thinking about parking policy, transportation demand management, and land use policy. When that fails to happen, cities are sometimes in a position of requiring a developer to build parking but then requiring the developer and property owner to not use the parking (through TDM requirements). Parking policy should support TDM and land use policy.

If cities lower their parking requirements, concerns will be raised about future uses that might have high parking demand that could occupy the site. In the past, cities have over-required parking of ***all*** uses to avoid this problem on a small number of uses. This reaction comes in part from the pattern of ministerial permitting, wherein the certificate of occupancy releases the property owner from taking any further measures to provide parking. However, more and more projects now receive discretionary approvals, and there are many options for establishing mechanisms to reduce the risk associated with possible future changes in the use of a building. For example, cities could use development agreement and covenant conditions to ensure that no use with a employee threshold greater than an agreed-upon level would occupy the building without a parking program approved by the city.

Cities should also consider changing the way they institute parking requirements. Because employee density can vary quite substantially, and has direct consequences for parking demand, cities should explore methods of setting requirements on a per-employee basis. In addition, zoning provisions should be much more specific to each type of use. A one-size-fits-all office parking requirement cannot adequately respond to the variety of uses that are defined as office.

Cities should also examine their on-street parking policies. If on-street parking is permitted, then it should be priced, just as off-street parking should be priced. Allowing free on-street parking while attempting to institute parking management strategies in off-street facilities invites spillover parking. Just as off-street parking has an economic cost that should be passed on to the user, so does on-street parking.

Finally, cities should evaluate their site planning standards so that parking location is not a major obstacle to transit and non-vehicular access to office sites. The traditional practice of locating a building to the rear of a large surface parking lot perpetuates automobile commuting. Innovative site planning techniques that bring the building toward the street can provide long-term benefits as transit systems develop and as an area matures.

Suburban cities have many opportunities to change the status quo in parking. In newly developing areas, reformed parking requirements and greater use of shared parking can result in a more economical, environmentally sound, and pedestrian- and transit-friendly city. There are also numerous opportunities in existing areas where parking has been over-built. One is the reuse of portions of former sites at higher building densities. There is already support for this in larger, high density suburban employment centers. The other opportunity is developing mechanisms to facilitate neighboring uses sharing parking to use existing oversupply. Developers will require mechanisms to allow them to comply with ordinances and reduce the risk of trying innovative approaches. Cities can play a major role in helping those innovations to occur. For example, cities could expand their consideration of shared parking beyond a single site, and to include new and existing sites.

Developer and Property Owner Actions

Developers should carefully assess the amount of parking they provide in each development to avoid oversupplying parking. Tenants' expectations regarding parking supply and policy are changing because of ridesharing mandates; status quo assumptions about parking will not serve developers well. For example, developers may find that separating parking and office space costs in leases allows them to offer more competitive rents to tenants, as well as flexibility in the number of spaces allocated to each tenant. Developers should also take advantage of the many opportunities for shared parking within and outside the site. Finally, developers should work with lenders, equity investors and leasing agents on parking standards and practices.

The potential for additional commercial development in the next decade is likely to be much less than the previous one. Most markets are overbuilt and are experiencing declining values. In this environment, the practice of ignoring the cost of oversupplying parking may be impossible. Tenants are likely to need less parking (because of ridesharing mandates) and will be especially cost sensitive. Developers are unlikely to be able to cover the cost of over-providing parking in their lease rates. Under these circumstances, developers may scrutinize parking supply cost much more closely than in the past, challenging cities when their requirements are clearly greater than demand.

The other opportunity in the next decade will be managing existing projects which may be over-parked. Developers should seek alternative uses for unused spaces (redevelopment, storage, service facilities, shared parking with nearby uses) to enhance revenues. Significant opportunities exist in this area because such a large stock of parking is in place in major suburban activity centers--the result of over-supplying parking over the last two decades.

Employer Actions

Employers should institute parking policies that pass the true cost of parking on to commuters, either

through parking charges or commute allowance programs. They should ask that property owners separate the lease costs for the office space from the lease cost for parking. Employers should also request flexibility in the number of spaces they lease, so that they benefit when employees rideshare.

Charging for parking is an effective way of increasing ridesharing. The Twentieth Century Insurance example shows the potential of even a $30 per month charge. This strategy can be controversial with employees, but using the money for a commute allowance or rideshare incentives can reduce employee opposition. These strategies must be carefully tailored to characteristics of the employer. For example, employers who have a high percentage of employees who use their car for out-of-the office professional work face a different challenge in instituting parking management strategies.

Federal Actions

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and Clean Air Act support a more comprehensive and inclusive view of transportation planning. The Federal government can support State and regional efforts to more fully integrate parking policy into regional transportation policy. Parking policy is key to supporting the development of alternative travel modes.

Federal action is also needed to reform the current tax treatment of parking. This issue has not been addressed in this report, but is a strong factor in parking policy (see Shoup and Willson (1992)).

Transit Operator Actions

Transit operators should undertake efforts in at least three areas. First, they should fully participate in regional and subregional transportation policy, to increase recognition of the effect of parking subsidies on travel behavior. Second, they need to build coalitions with other agencies concerned with parking, such as air quality management districts. Together they are more likely to influence local jurisdictions and private entities. And third, transit operators should continue to attempt to influence parking policy by commenting in the development approval process, affecting the supply of parking and the design of thk development. Now that employers face ridesharing requirements under Regulation XV, transit operators may find that developers are more willing to examine parking management strategies that can help their tenants meet their ridesharing requirements.

Education

An education program on parking policy is needed. Because parking has been a largely invisible issue, efforts to increase knowledge and awareness of parking issues would be beneficial. Parking policy is affected by a multitude of actors, all of whom must be convinced of the merits of parking reform. Materials should be targeted to the interests of each group. For example, cities would benefit by understanding the tax revenue loss associated with over-requiring parking. Developers and lenders would benefit from financial analyses showing the effects over-supplying parking, and from ideas for reducing the risk of negative marketing consequences. Citizen's groups are interested in issues such as overspill parking and traffic congestion. These specific programs should be part of a overall effort to increase public awareness of how abundant free parking, which seems to be a birthright of the suburbs, is tied to suburban problems such as traffic congestion and air pollution.

APPENDIX A

# RESEARCH DESIGN

## Introduction

This project is study of ten employment sites (called "study sites") in Southern California. Each of the study sites is treated as a case study (Yin 1984) and comparative analyses are performed. The goal of the research design is to (1) select sites in a manner that maximizes the useful knowledge gained from the in-depth case studies, and (2) develop methods that can efficiently provide information concerning the parking, transportation, and development circumstances at the study site.

Southern California is used as a study area because it exemplifies many of the advantages and problems of large, fast-growing regions.[1] Chicago was seen as a prototype for American cities in the fiit half of the century. Now Southern California has many of the problems and opportunities that other cities will experience. The study focussed on a single region because greater benefits could be derived from an in-depth study of series of case studies.

A variety of definitions of the term suburban have been posited in the literature, and many variables have been used to help tell the difference between a suburb and adjacent non-suburban communities (Bogue, 1949; Guttenberg, 1960; Levy, 1985; Levy, 1981; Muller, 1981; Warner, 1968; Sternlieb & Hughes, 1975; McKelvey, 1963; Callow, 1973; Morris, 1972; DeGrove, 1984; Ratcliff, 1972; Little, 1976; Hoyt, 1939; Wingo, 1961; Harris, 1945). The most often used differentiation variables are: distance from a primary employment center, population gradients and employment base multipliers. As described later, this study adopts an inclusive definition, to avoid excluding sites that may fit one definition of suburb but not others.

The study examines office-based developments. Office uses were selected because they are a fast-growing type of suburban employment (Pivo 1990). Suburban areas reflect sectoral economic restructuring and shifts in the spatial distribution of employment, and now contain the majority of office space in the U.S. (Pisarski 1987). Office uses are of interest because they are generally viewed as being most related to the traffic congestion problems experienced in suburban areas (Cervero 1989).

Previous studies of suburban transportation and land use patterns have focussed on large suburban activity centers (Cervero 1989, Rice Center 1987). This study does not exclusively focus on large activity centers or clusters, because there are a significant number of sites in small growing clusters and non-cluster development which are deserving of examination. The sampling methodology will result in a spatially differentiated group of case study sites having varied site characteristics.

A large survey-based sample research approach was not used because it might not have provided information on the full range of parking circumstances that need to be measured. The sampling process is a hybrid of a convenient sample, with a series of steps taken to avoid bias in case study

[1] Southern California defined as the non-rural portions of Ventura, Los Angeles, Orange, Riverside, and San Bernardino Counties (based on Southern California Association of Governments transportation modelling region).

selection. The case study selection process involves a combination of de-selection of study areas and communities, with some degree of randomness, and purposeful selection of sites.

The second purpose of this Appendix is to outline the methods used to collect the data. Case studies of sites are used because of the number of factors involved in parking supply, city policies, employers' parking policies, and commuters' travel choices. Survey research can fail to capture the complexity of parking economics because (1) it may fail to accurately determine the facts, and (2) it may miss important interrelations between factors. For example, employers may be unaware of the true cost of parking because of the structure of their leases. Also, local jurisdictions' parking requirements and setback regulations affect the supply of parking, but in any given development, the developer, lender or tenants may have established the minimum amount of parking provided. The complexity and interrelations of parking necessitates an in-depth case study approach to understanding the economics of parking. The case study method attempts to collect data from all relevant actors involved in a building's parking, such as city officials, developers, property managers, tenants, lenders, and other parties.

Site Selection Process

The site selection methodology is designed to improve the chances of selecting sites in a way that avoids bias. Although there is purposeful selection and substantial defining, we want to avoid studying only the better known sites. The site selection process is designed to:

1. spatially differentiate sites;
2. eliminate geographic areas that are clearly not suburban;
3. select candidate cities; and
4. select suburban sites within candidate cities.

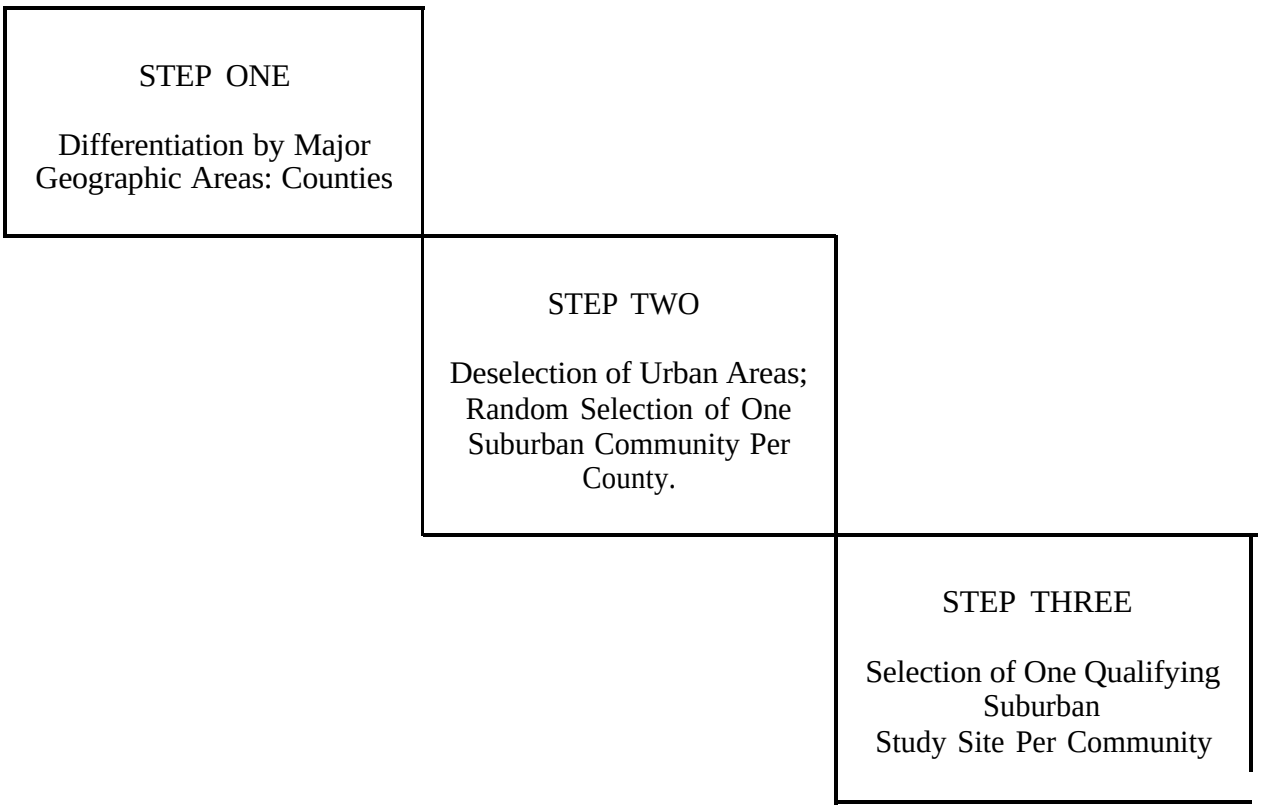
To achieve the stated goal of the research design, two methods of study site selection are used. The first method involves dividing the study area into the five counties that make up Southern California, and then systematically "de-selecting" cities, eliminating cities that are clearly urban. Candidate cities are randomly selected from the resulting pool of suburban cities in each county. Sites are selected according to a series of definitional and differentiation criterion, with the assistance of local planning departments. Local planners were asked to identify sites that are typical of office developments in their city.

The second method is purposeful selection of sites that have characteristics of interest. Cities chosen with this method meet the requirements for inclusion in the first pool of cities and additionally embody other characteristics which could not be practically factored into the first method. These cities are chosen based on research about those desired characteristics.

## METHOD A: SPATIAL DIFFERENTIATION AND SYSTEMATIC DE-SELECTION

The goal of the first site selection method is to select sites that are representative of suburban office developments in Southern California. To achieve this goal, a multi-tiered process for the selection of cities and study sites is used. This multi-tiered process is best described as a

systematic narrowing of choices through successive steps (see illustration below). Each step (tier) is assigned restrictive criteria whereby potential candidate cities and then study sites are siphoned out until, ultimately, sites are selected. This methodology seeks to reduce bias in the selection of study sites so that better known ones are not necessarily selected for inclusion in the study. The procedures employed maximize the opportunity for representative employment centers to be evaluated.




STEP ONE -- Selection of Major Geographic Areas

Spatial differentiation of the study sites is important to increase the chances that they represent a cross section of others like themselves. Thus, spatial differentiation becomes a surrogate variable which potentially can take the place of "difficult to measure" factors (Floyd, 1974; Grebler, 1952; Harvey, 1975; Heilbrun, 1974; Holvorson, 1973; Little, 1976; Lowry 1960; Olson, 1969; Ratcliff, 1972; Warner, 1972). Some of these factors may include varying distances from major employment centers, differences in employment base, housing concentrations, housing price differentials, land cost differentials, or major geographic features which may affect parking behavior, transit use and legislation.

For purposes of this study, the definition of "Southern California" is restricted to the Southern

California Association of Governments' (SCAG) "modeling area." It consists of five counties which represent a variety of development histories and characteristics. They include:

1. Los Angeles--large, mature, primarily built-up, containing urban and suburban areas.

2. Orange--classic 1950s bedroom suburb that has matured, still rapidly growing; now has a large employment base.

3. Riverside, San Bernardino, and Ventura--newly urbanizing, fast growing, with a job/housing imbalance.

To ensure that geographic representation is achieved, legal county boundaries (or portions thereof) are used as the first level of spatial differentiation. This is a useful procedure, as the counties embody certain characteristics which need to be accounted for, such as stage in development and other contextual variables.

STEP TWO -- Deselection of Urban Cities and Random Selection of Five Suburban Cities

This step selects a pool of cities or census defined places (CDPs) from each county, from which one study community will be selected. Southern California has 281 cities and CDPs (these units are the basis for random selection).[2] The following paragraphs discuss the background and process used to define suburban communities.

The census defines the municipal boundaries of the central city of a county as urban, the remaining areas (and surrounding, non-agricultural counties) as suburban. In Southern California, there are two central cities--Los Angeles in the Los Angeles/Long Beach SMSA and Anaheim in the Orange County SMSA. Baldassare (1986) summarizes the reasons why the traditional census definition of suburb is inadequate for Southern California, and lays out a series of inclusionary guidelines.

Because the bulk of growth in Southern California has occurred in a polycentric, politically fragmented pattern, the region is different from urban forms found elsewhere in the U.S. This is especially true in the economic/political relationship between a central cities and outlying areas. Southern California does not have a strong identification with any administrative central city.

The City of Los Angeles provides a good example of this complexity. It covers a large geographic area, including both urban and suburban areas. The Los Angeles CBD contains only three percent of employment in the region. However, a large dominant employment core starts in downtown and reaches west along Wilshire Boulevard to Santa Monica, containing fully half of the region's employment that is located in centers (Giuliano and Small 1990). The true "central city" in Los Angeles county is comprised of portions of a number of cities.

Other parts of the City of Los Angeles have low density and still others contain medium-sized

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2 By using census data for this de-selection process, we include major geographically contiguous non-incorporated areas (census defined places). These "places" represent between 10 and 30 percent of the county populations. However, small unincorporated fragments between and within cities are not included.

employment clusters far from the CBD. For example, Cervero classifies Warner Center (part of the City of Los Angeles) as a sub-city, which is a downtown-like in density and land use mixture, but retains a suburban character. Warner Center is 25 miles from downtown Los Angeles.

It is safe to say that most Southern California cities can be classified as "suburbs" by most models using population/distance gradients, employment base location, commuting patterns, etc. We use a de-selection procedure that eliminates those cities with the highest population and employment densities from consideration. No minimum employment density threshold is used, because many new, fast-growing suburban communities have low employment densities. However, a minimum population threshold is applied to screen out communities that are too small to have any significant office use. Finally, most rural and desert areas are excluded by the study area boundaries.

As surrogates for economic activity and population/distance gradients, a four step (sub-step) procedure is performed. The sub-steps are conducted on cities and census defined places. The exception to this is population density in the City of Los Angeles. Because of its large size in both population and area, the City of Los Angeles is broken down into 17 communities that are roughly similar in size to the cities that surround them. Each community is treated as a separate city for the deselection and sampling process.

Non-suburban cities and CDPs are eliminated using population density and employment density based on an analysis of outliers. Percentile divisions are developed based on this analysis and are used eliminate non-suburban areas.

The sub-steps in deselection are as follows.

1. Rank all study area cities and CDPs by population. Eliminate any city or CDP having less than 10,000 population. These places do not have office space of regional significance.

2. Rank all study area cities and CDPs by population density. The top tenth percentile was excluded from further consideration. When plotted on a histogram, these are clearly the outliers. This results in the elimination of 28 cities or census defined places and portions of the City of Los Angeles. The cutoff population density was 10,200 persons per square mile.

3. Rank all study area cities and CDPs by employment density. The top twentieth percentile was excluded from consideration, based on an analysis of outliers. This resulted in the elimination of three additional communities: east Los Angeles, downtown Los Angeles, and Vernon.

4. Randomly choose (with a random number generator) eligible cities or CDPs within each county. The process chocess chose five candidates for each county; the first city or CDP was chosen for study.

STEP THREE -- Selection of One Qualifying Suburban Study Site Per City

The final tier of the site selection process is the selection of a study site from each randomly selected

city or census defined place. First, qualifying suburban areas were identified within each selected city or CDP. Then a list of candidate study sites was created with assistance of city or county officials according to criteria listed below.

1) Suburban Site Criteria

Small and Giuliano (1990) analyzed Southern California employment clusters, ranking them by employment density using minimum size and density differentiation criteria. These clusters represent the highest density employment in the region, and are defined on the basis of census tracks, not city boundaries. The sampling methodology excludes the high density employment clusters. The top seventy-fifth percentile of these clusters were excluded from study. This cutoff was derived from an analysis of the distribution of employment cluster densities, and excludes eleven of the thirty two identified clusters. If a city or CDP contained one of these clusters, that portion of the city was not eligible for inclusion in the study.

One additional exclusion was used. Sites in historical defined CBDs in cities are excluded from study. Many Southern California cities have these CBDs, which generally have higher densities and higher priced land than surrounding areas.

2) Site Characteristic Criteria

Two types of site characteristic criteria are used to narrow the list of candidate sites. The first are upper limits concerning project density, to eliminate projects that achieve high urban-like density in suburban areas, but are not representative of the bulk of suburban office development. The second criteria is to identify sites that are ***typical*** of office development in the communities being studied.

We used density and building height measures to establish site characteristic criteria. Cervero (1989) provides data on floor area ratio (FAR) and building height in suburban employment centers (SECs); Hooper (1989) provides additional survey data on SEC's. Both find a wide range of densities in suburban employment centers. This study uses statistics from those studies to establish criteria. The standard used is to exclude projects whose density or height is one or more standard deviations greater than the mean from the Cervero and Hooper studies. We have chosen a density cutoff of 2.0 FAR, and a building height cutoff of eighteen stories. Any projects of greater density or height are not eligible.

Having eliminated the outliers, we sought sites that are typical of the context in which they are located. We asked city planners to define typical office sites in their communities, with regard to size, density, use, development context, and other characteristics.

Parking conditions are affected by the size and characteristics of the employment site. For example, Cervero (1989) found that parking price, size (# number of employees), percentage of retail uses, FAR, and miles from CBD were related to parking supply. By spatially differentiating the case studies we identified sites that represent a variety of these contexts. We have not used complex site typologies for site differentiation because the case study method involves a small number of case studies.

Because of the data needs of this case study approach, only relatively recent projects were studied. Each case study involves interviews of those individuals who were involved in project design,

negotiation, development and management. Therefore, only projects built after 1975 were considered. A second criteria is that the project be at least 50 percent occupied. This is necessary because parking utilization surveys were undertaken, and underutilized buildings will not have typical parking utilization. Finally, the planning department was asked to provide a preliminary assessments of whether the individuals associated with the project are available for interviewing.

3) Verification of Site Suitability

We needed cooperation from the study site manager/owner. If we did not receive cooperation, then another similar site within the city was used. This occurred in one of the communities studied.

METHOD B: PURPOSEFUL SAMPLING OF STUDY SITES

The second selection method used purposeful sampling to ensure the inclusion of employment centers which embody important factors that may affect parking and which could not be easily accounted for in the previous process.

The process used for this selection involves research with local agencies regarding potential study cases. For example, Regulation XV rideshare program files were used to identify suburban employers who charge for parking. Similarly, research was undertaken with planning agencies regarding sites that have other interesting parking characteristics. These sites meet the selection criteria established in the previous section, with two exceptions: FAR may exceed 2.0 and sites do not have to be typical of the community in which they are located.

These sites are selected from Los Angeles and Orange Counties, since the bulk of office employment is located in those two counties.
The following factors are used to select sites:

> Low Parking Requirements--An employment site was selected in a community where parking requirements are lower than Southern California averages.
>
> Employer Parking Subsidy Policy--Two study sites were selected because employees pay for some of all of the cost of parking.
>
> Parking Undersupply--A site was selected because it has a shortage of parking.
>
> High Density Redevelopment--A site was selected where high-density redevelopment has occurred, providing urban-like characteristics in a suburban area.

We approached building managers and employers in these buildings directly, and then approached the respective cities for additional information.

<u>Case Study and Data Collection Procedures</u>

Information on the selected case study sites was obtained through 1) interviews conducted with

the various actors involved in the development process of a project, and 2) data collection and analysis. The following actors were interviewed, as appropriate:

1. Local Governments
2. Developers
3. Building Owners/Property Managers
4. Permanent Lenders
5. Lease Agents
6. Parking Operators
7. Project Tenants
8. Transit Operators
9. Transportation Management Organizations
10. Real Estate and Parking Consultants

Each of the actors was asked a series of questions designed to provide an understanding of the role they played in the development process, and, in particular, the influence they had on parking for the study site. In addition, real estate analysts and parking consultants were interviewed regarding their general perceptions about suburban parking.

Parking studies were conducted at each site. Researchers studied parking occupancy for each. site on a single typical parking use day. For each case study, a parking utilization survey was completed for the entire day on a Tuesday, Wednesday or Thursday. This utilization study recorded parking utilization, by type of parking, on half hour intervals (including visitor parking, Carpool parking, reserved spaces, etc.). In each case, researchers checked with building management to determine if the day the studies were conducted was in fact typical for that building. Field work also included noting any off-site parking, pedestrian and access patterns, and other relevant information.

The visitor parking data indicates the percentage of total parking demand that was recorded as taking place in parking spaces designated for visitors. Actual visitor parking levels may vary from those reported if visitors parked in other spaces, or if employees parked in spaces designated for visitors.

Parking utilization is affected by the building occupancy, and the employee density within that occupied space. Utilization data is reported for actual building occupancy and is estimated for 95 percent occupancy. We also asked building managers to estimated employee density within occupied space. Some building managers had data on this while others made estimates. Therefore the employment density data do not have the level of reliability of actual employee counts.

Because this study was undertaken while Southern California was in a recession, there was a concern that employee densities may have been lower than normal conditions. The average employee density of the five sites in the randomly select communities was 4.5 employees/1,000 square feet. One national survey of employee density reported a mean average for low-rise office buildings of 4.3 employees per 1,000 square feet. Therefore, the estimated employee densities for sites in this study are in the range usually founds in those types of office buildings.

Researchers also collected data on transit availability to the sites, documenting transit operators

serving the site, headways, walking distance to sites, service areas, etc. This information was used to assess the quality of transit service available.

Case Study Interviews

The following sections discuss the types of questions asked of each actor. For each case we attempted to interview all relevant actors; in some cases only partial data or access to actors was available.

Local Governments

I. Parking Requirements and How They Were Developed

II. Other Development Standards That Indirectly Affect Parking
- Setbacks
- Floor Area Ratio (FAR)

III. Issues Related To Parking Policies
- Common Complaints About Requirements
- Issuance of Variances

IV. Attitudes Regarding Different Aspects of Parking
- Number and Size of Spaces
- Convenience
- On-street Parking
- Spillover Parking

V. Project-specific Questions
- Amount of Parking/On & Off Street
- Parking Negotiations
- Parking Agreements
- Attitudes About Adequacy of Parking

Developers

I. General Parking Standards and How They Were Established

II. General Attitudes about Parking
- Adequacy of City & Lender Requirements
- Problems/Benefits of Undersupplying Parking
- Problems/Benefits of Oversupplying Parking

III. Project-Specific Questions
- Type of Project
- Financing

- Property Ownership
- Lease Negotiations

IV. Amount of Parking For Study Site

V. Cost of Providing Parking

VI. Adequacy of Parking For Study Site

Building Owner/Property Manager

I. Amount of Parking for the Project
- Their role in determining this amount
- Parking studies conducted

II. Cost of Providing Parking
- How parking is valued
- Annual operating cost
- How costs are recovered

III. Parking Management
- Who operates parking
- Management problems associated with parking

IV. Attitudinal Questions About the Project
- Adequacy of parking
- Problems/benefits associated with oversupply or undersupply of parking

Lenders

I. General Parking Questions
- Parking Requirements
- How Requirements Determined

II. General Attitudinal Questions About Parking
- Adequacy of Parking Requirements
- Problems With Undersupplying Parking
- Benefits of Oversupplying Parking

III. Minimum Parking Requirements for Study Site

Lease Agents

I. Attitudinal Questions About Parking
- Importance of supply and price in attracting tenants
- Problems or benefits associated with an undersupply or oversupply of parking

II. Parking Questions About Project

- Parking negotiations
- How parking costs are paid
- Adequacy of parking supply and affect on project marketability

Tenants/Employers

We selected the largest employer and one randomly selected employer for interviews.

I. Tenant Characteristics
- Type of business
- Type and number of employees
- Length of time at this site
- Parking as a factor in locating at this site

II. Employee Parking Arrangements

III. Parking Costs
- Parking fees
- How fees recovered
- Amount of subsidies for employees
- Parking as a benefit

IV. Parking Supply
- Adequacy of parking supply
- Affect on business

V. Parking Surveys or Studies Conducted
- Regulation XV
- Other surveys

Parking Operators

I. Parking Questions About Project
- Parking costs/who pays
- Management problems
- Qualitative information, such as busiest days, occupancy, percentage of visitors parking
- Parking operator contractual agreements
- Parking studies conducted

II. Adequacy of Parking Supply

Transit Operators

We identified all the transit operators that have jurisdiction over the area in which the study sites

are located and collected data on transit service in the vicinity of the site.

I. General Parking Questions and Perceptions
   - The effect of parking cost and supply on transit utilization
   - Perceptions about parking
   - Share of ridership that is peak period journey to work trips

II. Questions Related To Project
   - Involvement in development process
   - Level of transit service available to site
   - Information about transit utilization for site

APPENDIX B

# CASE STUDY SUMARIES

This appendix provides a summary of each case study. Each summary includes sections describing the key conclusions about the project, the characteristics of the site and project, the results of the parking analysis, and attitudes about parking. The sites are presented in two groups: the first five summaries are sites in the randomly selected communities, and the second five summaries are the purposefully selected sites. They appear in the following order:

Swift Building, Oxnard (Random Selection)
Systemhouse Building, Cerritos (Random Selection)
Toshiba America, Irvine (Random Selection)
Stewart Plaza, Upland (Random Selection)
Rancon Building, Temecula (Random Selection)

Tishman Building, Los Angeles (Purposeful Selection)
2529 Foothill Building, Los Angeles County (Purposeful Selection)
Building A, Brea, (Purposeful Selection)
Building B, Costa Mesa (Purposeful Selection)
Well Fargo Tower, Irvine (Purposeful Selection)

SWIFT BUILDING
2500 Vineyard Boulevard
Oxnard, California

## I. Conclusions

This site has a lower than average parking supply, but has only had parking problems when tenants have high employee density levels. The project was built with less than the current Oxnard minimum requirement (2.5 spaces/l,000 square feet versus 4.0 spaces/l,000 square feet). The site has a relatively high FAR for its size because two levels of parking are provided in the building.

## II. Characteristics of Site and Project

### A. Location

Oxnard, California is the randomly selected city chosen for study in Ventura County. It is located in the southern region of the county, is the largest city in the county, and has 142,216 residents. The City of Oxnard began as an agricultural and residential community, but as it became more developed, commercial, retail and light industrial uses enveloped much of the agricultural lands.

The study site, known as the Swift Building, was selected for study with the assistance of a the planning department and a local commercial real estate agent. It is located at 2500 Vineyard Avenue in Oxnard.

### B. Development Information

The Swift Building is a 5-story office building. Two levels of parking are provided within the building and the remainder is surface parking. The building was completed in 1979. It was a speculative project, and a portion of the building is occupied by one of the original owners.

The site is located near a residential area. It was granted a development permit during a time in Oxnard's development history in which low density professional development were built in close proximity to residential areas. The building plans were presented to the planning staff in 1977. Planning staff recommended denial based on a lack of compliance with a variety of general plan policies, including its circulation design. The staff report noted that the "circulation plan is inadequate because of the size an shape of this parcel and could be detrimental to the public safety and general welfare". However, the project was approved.

### C. Site Description

The Swift Building, situated on a 1.02 acre parcel, is located near the Ventura Freeway (I-101) and the Ventura County Airport. It is close to a large retail warehouse and other small retail strip-type developments.

South Coast Area Transit (SCAT) is currently provides transit service to the site. The transit route most directly serving the site is Line 6. It operates on 1 hour headways, and stops 1/4 mile from the site.

D. Building Description

The front entrance to the building is located on Ventura Boulevard. The northwest elevation facing Vineyard Avenue is four stories, while the southeast elevation facing the frontage road is five stories due to the topography of the land. Parking is located on the first two floors, with north access limited to the second story and south access limited to the first story. Outdoor on-site parking is also available.

TABLE 1: SWIFT BUILDING DESCRIPTION

| Number of stories | - Parking on 1 and 2 |
|---|---|
| Gross Square Footage | 64,500 inc. parking; 43,769 w/o parking |
| Leasable Square Footage | 39,790 |
| Floor Area Ratio | 0.99 |
| Building Coverage | 0.33 |

E. Building Occupancy

Chuck Covarrubias, President of Alert Management Company, said that the building is approximately 89 percent occupied. Tenants, include mortgage and real estate companies, attorneys, and a variety of other service-based firms.

II. Parking Analysis

A. City Parking Requirements

According to the City of Oxnard, the parking requirement is 4 spaces per 1,000 square feet of floor area. However, the staff report for the project states that the amount of required parking was 100 spaces, which is a 2.5 space per 1,000 square feet ratio. The developer actually provided 106 spaces. Because this project was built in 1977, staff planners at the city were not aware of the development history of this project. Our research has turned up no evidence that the requirement in 1977 was 2.5 spaces per 1,000 square feet, so it appears that the project was approved with less than code required parking.

B. Parking Supply

There are 2 gate-controlled garage access points to the garage. The north entrance/exit and the south entrance/exit are exclusive for the first and second story parking respectively, which results in awkward circulation. Indoor parking is designated for tenant use only, while

outdoor parking is available for both tenant and visitor parking. Parking is allocated to each tenant based on the leasable square footage of their suite. Individual spaces are not assigned.

TABLE 2: PARKING SUPPLY FOR SWIFT BUILDING

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted - Outdoor | 40 |
| Non-Restricted - Indoor | 63 |
| Restricted - 20 minute limit | 2 |
| Handicapped | 1 |
| TOTAL PROVIDED FOR SITE | 106 |
| AMOUNTREQUIRED BY CITY | 100 in staff report; 160 by code |

C. Commuter Mode Choice

No mode choice surveys were available for this site. However, the tenant that was interviewed for this study stated that most of her staff people drive alone and that parking is not an issue at the site.

D. Parking Occupancy/Utilization

The parking utilization study conducted for the site on July 15, 1992.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY - SWIFT BUILDING

| | | |
|---|---|---|
| Time of Peak Utilization | | 10:30 am |
| Employee Density (Emp./1,000 occupied gla) | | 2.8 |
| Spaces Demanded Per Employee | | 0.69 |
| Current Building Occupancy | | 89% |
| Parking Utilization | @ Current Occupancy | 65% |
| | @ 95% Occupancy | 69% |
| | /1,000 Occupied gfa | 1.95 |
| Level of Visitor Parking | | I Low |

E. Parking Agreements/Tenant Parking

Parking for tenants of the office site is non-restricted. However, only those tenants with

remote control devices may enter the indoor garage area. Parking is free and is not separately charged for in leases. A small deposit fee is collected for each remote control released to tenants.

F. Parking Economics

Information about capital costs to build parking spaces and operating costs was difficult to obtain, because the building was the oldest in the study. Estimates were used, and the results are shown in Table 4.

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - SWIFT BUILDING

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $6.00 |
| | Land Area/Space (Sq. Ft.) | x 132 |
| | Land Cost/Space | = $792 |
| | Construction Cost/Space | + $5,066 |
| | TOTAL | = $5,858 |
| | AMORTIZED AT 8.5% INTEREST RATE | $45.42 |
| OPERATING COST | Surface and Structure | $3.33 |
| TOTAL | | = $48.75 |

G. Parking Management

Parking is managed by the property management company. The daily maintenance staff ensure that the indoor spaces are being used appropriately. The property manager stated that occasionally the outdoor spaces are fully utilized because they are considered more convenient by the tenants. However, this behavior creates a shortage of visitor parking.

IV. Attitudes About Parking

A. Public Sector

Local Government

Supervising Planner Dennis Tagashiro stated that the parking standards of 4.0 spaces/l,000 square feet have not been changed for a long time. In general, developers in Oxnard want to maximize floor area.

Oxnard residents do not generally complain about parking, they do complain about traffic.

The City is implementing transportation system management plans, such as revising traffic signals and widening roadways. At this time, however, the city is not studying parking utilization.

B. Private Sector

Developer/Building Owner

The developer/building owner of this project could not be reached for comment. However, the building management company that has been with the site since soon after its completion says that parking on this site is barely adequate. Even though the building is well situated and close to freeways, there is a great deal of traffic generated from the building during the evening peak hours. Other parking problems associated with the site stem from tenants who prefer to park outside the building in spaces designated for employees and visitors who do note have gate control remotes. The maintenance staff patrols the lots to ensure the garage remains full.

C. Tenants

Frank B. Hall, an insurance company with thirty two employees leasing space at the Swift building has been a tenant since the building opened in 1979. He indicated that the number of spaces allotted per tenant is reviewed with each lease renewal.

SYSTEMHOUSE BUILDING
Cerritos Town Center
12750 Center Court Drive
Cerritos, California

## I. Conclusions

This project is part of a major mixed-use redevelopment project, involving shared parking. As the site is built out, it will transition from surface to structure parking. At completion, the development will be a fairly high density mixed use project, but will provide typical suburban parking standards. City parking requirements were the driving force in the amount of parking supplied. No parking charges exist or are anticipated. The current parking space demand (2.1 spaces per 1,000 square feet) is approximately half the required amount of parking (4 spaces per 1,000 square feet).

## II. Characteristics of Site and Project

### A. Location

Cerritos is the randomly selected city that was chosen in Los Angeles County. It is a mature suburban community located in the geographic center of the Los Angeles Basin, at the eastern edge of Los Angeles County and the border of Orange County. The 8.6 square mile city has 53,240 residents. By 1985, the largely residential city was 97% built-out, and the study site is located on one of the last developable parcels.

The study site, known as the Systemhouse building, was selected for the study with the assistance of the Cerritos Planning Department. Located at 12750 Center Court Drive, it is part of Cerritos Town Center, a master-planned, mixed use, corporate development within the Los Coyotes Redevelopment area.

### B. Development Information

The Systemhouse building, completed in June 1989, was a speculative project built during phase one of a multi-phased development. It was designed to attract industrial support-type tenants, such as large tenants with data processing and sales/marketing centers. This type of use is common in the surrounding area. When complete, the entire project area will incorporate 21 buildings with 1.2 million square feet of floor area in offices, a 203-room hotel, a community art center, and other facilities. Four, two level parking structures will be also be provided during later phases of the development.

The Cerritos Redevelopment Agency retains ownership of the land, but has a long-term lease agreement with the developer. The developer owns and manages the Systemhouse building.

**C.** Site Description

The Systemhouse Building and its surface parking area are located on a 4.3 acre parcel (including the square footage for parking spaces provided on the adjacent parcel), within the inner ring of the development. Adjacent uses include a hotel directly to the north of the building, a community arts center to the southwest, and a 7-story office building to the northwest.

The site features the use of greenbelts and pedestrian walkways, which connect different uses within the site and also connect the corporate center with an adjacent retail/commercial center to be developed to the north. Although the plan calls for the use of parking structures for the office buildings during the later phases of development, there is currently only surface parking available. Surface parking is located directly next to the Systemhouse building and also at the adjacent parcel.

Cerritos Town Center is bordered by the Artesia Freeway (91), Shoemaker Avenue, 183rd Street and Bloomfield Avenue. It is directly linked to the freeway via on-site on and off ramps.

Access to the office site is provided by the Southern California Rapid Transit District (SCRTD) and the Orange County Transportation Authority (OCTD). Stops are between 1,400 and 4,200 feet of the site, with headways of between 30 and 60 minutes. These lines in turn connect with many others at the Los Cerritos Center, a major transit depot in the city. No transit service is currently provided in the internal streets of the Cerritos Town Center, resulting in relatively long walking distances. However, property manager Robert Schafhausen indicated that future plans include transit service within the site.

D. Building Description

The 7-story Systemhouse building was designed to attract upscale corporate tenants, and it includes features such as a granite-lined lobby, vaulted ceilings, and floor-to-ceiling glass walls.

TABLE 1: SYSTEMHOUSE BUILDING DESCRIPTION

| | |
|---|---|
| Number of Stories | 7 |
| Gross Square Footage | 153,600 (est.) |
| Leasable Square Footage | 139,638 |
| Floor Area Ratio | 0.83' |
| Building Coverage | 11.8%' |

'This information is based on the total square footage needed for the site, including square footage for parking spaces provided on adjacent sites.

E. Building Occupancy

As of May, 1992, the building was 98% occupied (137,548 square feet), with 24 tenants and a total of 387 employees. The anchor tenant is Systemhouse, a computer systems development **firm** that occupies 40,000 square feet. Other tenants include professional firms, insurance companies, and governmental offices.

III. Parking Analysis

A. City Parking Requirements

The minimum parking requirements for professional offices are 1 space for each 250 square feet of gross floor area, or 4 spaces per 1,000 square feet. This parking requirement has been in effect since 1972. On-street parking is prohibited in the vicinity of the site.

B. Parking Supply

According to both the developer and the city, there were no parking negotiations for the site. The developer provided parking for the Systemhouse building to meet the city requirement of 4 spaces per 1,000 square feet of gross area, which is a total of 560 spaces. The precise plan for the entire project area includes reciprocal parking and maintenance agreements that permit shared parking between contiguous parcels. While each parcel itself may not have the parking required by code for that use, each group of contiguous parcels must include enough parking to satisfy the requirements of the buildings located within the designated area. The Systemhouse Building is located in an area of contiguous parcels that includes two 7-story office buildings, two 6-story office buildings, one 203-room hotel with an attached parking garage, and a community arts center. Upon completion, the contiguous parcel area will also include four 2-level parking structures to meet the overall parking requirement for all 6 structures of 2,374 spaces.

Currently, the only structures that exist on the contiguous parcels are the two 7-story office buildings and the hotel. It was determined that, by this stage in the development, the art center would be complete and that the two 7-story office structures would share its 788 spaces. Only 319 of the required 560 parking spaces for the Systemhouse Building are provided on the building parcel itself.

TABLE 2: PARKING SUPPLY FOR SYSTEMHOUSE BUILDING

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted | 291 |
| Handicapped | 6 |
| Visitor | 16 |
| Loading | 6 |
| TOTAL PROVIDED AT SITE | 319 |
| TOTAL PROVIDED ON ADJACENT PARCELS | 241 |
| AMOUNT REQUIRED BY CITY | 560 |

C. Commuter Mode Choice

The tenants interviewed at the Systemhouse building indicated that they were not subject to Regulation XV, and as such, no mode choice surveys were available. However, based on observations made during the parking utilization study and discussions with tenants, the dominant mode choice is the private automobile.

D. Parking Occupancy/Utilization

A parking utilization study was conducted for the Systemhouse building on May 6, 1992. The figures shown in Table 4 are based on total square footage of the site, including square footage for 241 parking spaces provided on adjacent sites.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY - SYSTEMHOUSE BUILDING

| | | |
|---|---|---|
| Time of Peak Utilization | | 9:00 am to 9:30 am |
| Employee Density (Emp./1,000 Occupied gla) | | 2.8 |
| Spaces Demanded Per Employee | | 0.75 |
| Current Occupancy | | 98% |
| Parking Utilization | @ Current Occupancy | 52% - of total spaces to be provided, including art center area |
| | @ 95% Occupancy | 51% |
| | / 1,000 Sq Ft gla | 2.1 |
| Level of Visitor Parking | | Low-5% of all space occupied at peak |

E. Parking Agreements/Tenant Parking

Parking for tenants of the building is unrestricted and unreserved, except for a few visitor spaces. Employees may park wherever they wish on the site. As part of the lease agreement, each tenant is allocated 4 spaces per 1,000 square feet of leased space. Property Manager Robert Schafhausen indicated that this is not currently monitored, and that tenants might actually be using more or less spaces than they are allotted. He stated that a specific amount of parking is allocated in leases to safeguard against future complaints.

As required by the city, the Systemhouse building, the other 7-story office structure, the hotel, and the community art center (under construction) have reciprocal parking agreements which permit shared parking. The two office structures will be permitted to use a portion of the art center's 788 parking spaces during the workday in order to satisfy their parking requirements. However, the art center parking will not be available until the building's completion in Spring 1993.

F. Parking Economics

Information about capital costs to build parking spaces was available; operating costs were estimated.

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - SYSTEMHOUSE BUILDING

| | | |
|---|---|---|
| CAPITAL, COST | Land Value/Sq. Ft. | **$ 13.50** |
| | Land Area/Space (Sq. Ft.) | x 264 |
| | Land Cost/Space | = $3,564 |
| | Construction **Cost/Space** | + $1,000 (est.) |
| | TOTAL | $4,564 |
| | AMORTIZED AT 8.5% INTEREST | $35.39/mo. |
| OPERATING COST | Surface/Uncontrolled | $1.67 |
| TOTAL | | = $ 37.06 |

Despite the costs of providing parking, tenants are not charged a separate cost for parking; it is built into their leases. The property manager indicated that currently parking charges are a rent concession. Due to the market, current lease agreements include free parking. Because tenants are not charged for parking, there is no reason for employers to charge employees for parking. Neither of the two tenants interviewed charge employees for parking.

G. Parking Management

The parking is managed and operated by the developer/owner. The property manager noted that one of the main parking management problems is unauthorized use of the parking lot for long-term automobile storage by park-and-ride participants (working at other sites). The site is located near the junction of two freeways, where rideshare participants like to meet.

Iv. Attitudes About Parking

A. Public Sector

Local Government:

Advance Planning Manager Robert Brady said that cities are driven by the need for sales tax revenue, and this affects their parking requirements. In order to make a retail or commercial development marketable for many years to come, cities want to ensure that ample parking is provided. The extra parking available acts as a "buffer" and allows flexibility for future uses of a project.

The majority of development in the city has occurred since 1970, and because the standards were already in place, there has been no real problems with parking. Cerritos generally does not grant parking variances (i.e., for less parking), and developers do not often request them. In many cases, developers build a few extra spaces in addition to the city requirement.

Mr. Brady said that while the City Council feels that parking is important, and it upholds the current parking standards, parking is generally not one of the major issues or concerns of the council.

B. Private Sector

Building Owner/Developer:

Steve Phillips, Project Manager for the developer, said that developers feel that because land is expensive, they should build parking to the minimum city requirement and not more. The city requirements are usually adequate. On occasion, the developer will consult with a parking design consultant when parking structures are being built, or will consult the Urban Land Institute's Shared Parking Analysis when shared parking is an option.

An important factor in determining parking is the market. He indicated that while the parking standard for offices is usually around 3 spaces per 1,000 square feet, the actual usage of parking is approximately 2.2 to 2.5 spaces per 1,000 square feet. He felt that, in general, city parking requirements lead to an oversupply of parking, especially in suburban areas.

Another important aspect of parking is convenience. To make a building marketable, the parking area should be built within a 300 foot radius around the building. Spaces outside this

radius are generally never used and become wasted space. It should be noted that no transit serves the site within this radius.

Mr. Phillips said that one problem associated with oversupplying parking is underutilization of land. Essentially, the land is wasted when not put to its highest and best use. Also, maintenance costs are a problem. If there is excess land, landscaping is preferable to blacktop, because it is more appealing, and the maintenance costs can be kept low through the use of low maintenance vegetation. The only benefit associated with oversupplying parking is that it provides flexibility for future uses of the site.

While parking in suburban areas is often oversupplied, on occasion it may be undersupplied if the building has high employment density tenants. The obvious problem with an undersupply of parking is tenants' complaints. Currently, at the Systemhouse site, parking is very tight because the adjacent art center is under construction, and some of the shared spaces are being used for storage of construction vehicles. The shortage of parking at the site is a temporary situation.

Lender

The permanent lender for the project was Wells Fargo Bank. Because a contact name for the lender was not available to us, we interviewed the Vice-President of one of Wells Fargo's commercial branches. James Brisbane indicated that the primary driving force behind a bank's parking requirements is the nature of the office development being financed. The lender's concern is that parking is sufficient for the needs of the intended uses. The bank has internal engineers and staff to review plans submitted for loans.

Lease Agent

The lease agent, Lonnie Riddle of Grubb and Ellis, felt that parking was one of the most important factors in attracting tenants to a site. On a scale of 1 to 5, it is a "5". The reason is that the vast majority of employees, clients and visitors commute by automobile to a worksite and they need somewhere to park their cars. Public transit is generally not a viable alternative.

There are both quantitative and qualitative aspects to parking supply. Parking must not only be adequate, but it must be on-site and convenient. If parking is undersupplied, it has a negative impact on the marketability of the site. Generally, an oversupply of parking is not a big problem. The negative aspects are excess maintenance costs and opportunity costs (i.e. the land may have been put to better, more profitable use). He felt that oversupplied parking is much better than undersupplied parking, and that the standard of 4 spaces per 1,000 square feet is sometimes not enough for certain types of office uses. Some tenants may need 5 or 6 spaces per 1,000 square feet.

C. Tenants

Two of the 24 tenants in the building were interviewed regarding their perceptions about parking. Paul Goldberg of Systemhouse, the premier tenant, indicated that parking was an important factor in the company's decision to locate in the Town Center. Their basic concern was that there would be enough parking for all their employees. They are guaranteed approximately 160 spaces in their lease. He felt that parking was adequate and not usually a problem. On a few occasions, it has been difficult to find a space, but this is due to the art center construction. Overall, there is plenty of parking in the center.

The other tenant interviewed was Marty Young, of National American Life Insurance. She noted that she was not involved in the original decision to locate at the site (those who were no longer with the company), but she felt that parking would not have been an issue. Since locating here, the company has downsized considerably, with 60 of the original 65 employees having moved to a new location out of state. Parking is adequate, although on occasion it has been difficult to find a space due to the construction at the art center next door.

TOSHIBA AMERICA
9740 Irvine Boulevard
Irvine, California

## I. Conclusions

- This project typifies developments in areas where office uses share sites or buildings with light industrial uses, e.g., warehouse and assembly operations. The Toshiba site includes these other uses, and is very large in scale--so large that walking distances from parking has become an employee concern. The site remains quite typical in parking circumstances--plentiful, free, uncontrolled surface parking is provided.

- Toshiba supplied 11% more parking spaces than required in the expectation of future building expansion. The current parking demand of 2.25 spaces per 1,000 square feet is far below 4 spaces per 1,000 square feet city requirement. Although transit service to the site is convenient for a suburban area, transit utilization is negligible. It is difficult to promote ridesharing because of high salaries (incentives are ineffective). Convenience is a priority among employees who work long, irregular shifts.

## II. Characteristics of Site and Project

### A. Location

Irvine is the randomly selected city that was chosen in Orange County. It is a newer, planned community located near the geographic center of the county. The 42.3 square mile city has 110,330 residents. The study site, known as Toshiba America, was selected for the study with the assistance of the Irvine Community Development Department. The site is located at 9740 Irvine Boulevard in the Irvine Spectrum, a high tech industrial complex that has been in existence since the 1980s.

### B. Development Information

The Toshiba site, developed in 1987, was a build-to-suit project for Toshiba. It serves as one of the corporate headquarters for Toshiba in America.

The Irvine Company, one of the largest landowners/developers in the area, retains ownership of the land and has a long-term land lease agreement with Toshiba. The Toshiba Corporation owns the buildings and other improvements on the site. While the Irvine Company designed the original land plan and lot configuration, and supplied the infrastructure for the site, the building design and on-site improvements were planned by Toshiba acting as its own developer, with the aid of an architectural firm. As the landowner, the Irvine Company retained control over the amount of square footage that could be constructed on the site and reviewed the architectural design of the building to ensure that it met established standards for the Irvine Spectrum area.

Toshiba's architect Lloyd Nikaido said that a master plan was originally developed for the site, which planned for future expansions of both the office and assembly/warehouse buildings. Specifically, the site was designed so that Toshiba could provide additional parking in some areas once expansion was complete. The assembly/warehouse building was expanded by approximately 102,449 square feet in 1989, and at that time the parking area at the south east corner of the building was expanded as well.

Financing for the project came through Toshiba Japan; further information on financing was not available.

C. Site Description

The 26.2 acre site includes two buildings, an administrative office and an assembly/warehouse building, and the related parking area for these uses. The layout of the buildings and parking on the site was determined by the unusual triangular-shaped lot. Because a linear-shaped building was needed for efficient production, Toshiba and its architect designed the parking to be located around the buildings, where employees areas could park relatively **close** to the workplace, instead of in a single parking area. It was determined that a single parking area would require nearly 8 acres of land, which would not allow for the assembly/warehouse complex to be situated in a linear plan. The scattered parking arrangement utilizes the less efficient triangular shapes for parking.

In the final design, each corner of the triangular lot is used for parking, the bottom western section is used for loading, and the middle section includes the two rectangular-shaped buildings with a landscaped courtyard and fountain in between them.

The site is bounded by Irvine Boulevard, Parker, Fairbanks, Alton Parkway, and Trabuco Road. Adjacent uses include another Toshiba site across the street on the eastern side, and commercial/industrial uses on all other sides. Access to the site is provided by 3 freeways. The Santa Ana Freeway (5) is 2 miles from the site, via Alton Parkway; the San Diego Freeway (405) is 2 miles from the site, via Irvine Center Drive; and the Laguna Freeway (133) is 2 miles from the site via the I-5 or 405 Freeways. Public transit service to the site is provided by five Orange County Transportation Authority (OCTA) bus lines, operating at headways between 25 and 60 minutes. Most have stops at the perimeter of the sites.

Employees also have the option of participating in a vanpool service administered by the Transportation Management Organization for the Irvine Spectrum area.

D. Building Description

There are two buildings on the site--an office/administrative building and an assembly/warehouse building. A portion of the warehouse/assembly building (56,350 square feet) is devoted to offices uses, and this square footage is included in the building description in Table 1. Specific information about the remainder of the warehouse building is not provided because it was not the focus of this study.

In order to make accurate calculations for office component of the Toshiba site, it was determined that 11.9 acres was needed for the office uses (45% of the total site). Table 1 does not include the square footage devoted to buildings and parking for other uses on the site.

TABLE 1: TOSHIBA OFFICE/ADMINISTRATIVE BUILDING DESCRIPTION

| | |
|---|---|
| Number of Stories | 2 |
| Gross Square Footage | 156,099' |
| Leasable Square Footage | 140,489 |
| Floor Area Ratio | 0.3 |
| Building Coverage | 20% |

1 ,350 square feet ot this office square footage is located in the Assembly/Warehouse burlding.

E. Building Occupancy

The building is owned and occupied by Toshiba. There are no other tenants. There are currently 967 employees at the site, 93% (899) of which are office personnel and 7% (68) of which are warehouse personnel. According to Employee Transportation Coordinator Lorraine Valencia, this number can vary daily because employees transfer between the different Toshiba sites in the area. There is another site directly across the street.

III. Parking Analysis

A. City Parking Requirements

As stated in Section V.E.-403.3 A of the Irvine Zoning Ordinance, the off-street parking requirements are as follows:

> Administrative, business and professional offices: 1 space per 250 square feet of gross floor area. Ten percent of the spaces must be designated for use by Carpools and located as close as is practical to the entrances of buildings to encourage carpooling.

No on-street parking is permitted in the vicinity of the site.

B. Parking Supply

At the original office square footage of 152,889 (including office uses in the warehouse building), 612 spaces were required by the city, and Toshiba provided 639 spaces. When the assemble/warehouse was expanded, increasing the total office square footage at the site to 156,099, the city required a total 625 spaces and the developer provided that amount. All of the spaces are located in uncontrolled, surface parking areas.

TABLE 2: PARKING SUPPLY FOR TOSHIBA SITE

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted | 764 |
| Handicapped | 8 |
| Visitor | 28 |
| Carpool | 4 |
| Vanpool | 4 |
| Management | 22 |
| Medical | 46 |
| Spaces located in restricted loading area (currently available) | 38 |
| TOTAL PROVIDED FOR ALL USES | 914 |
| TOTAL AMOUNT REQUIRED BY CITY | 822 |
| AMOUNT PROVIDED FOR OFFICE USES | 695 |
| AMOUNT REQ'D BY CITY FOR OFFICE | 625 |

C. Commuter Mode Choice

Toshiba **is** subject to the AQMD's Regulation XV, and the following information about employee mode choice was obtained from the most recent plan of 1991. It should be noted that, at the time the mode-choice survey was conducted, Toshiba had approximately 45 percent more staff at the site than it did at the time of this study. At the time the survey was conducted in 1991, 78 percent of employees responding said that they drove alone, 17.5 percent commuted to work by 2 or more person Carpool, 0.5 percent used public transit, and a small percentage used other means such as bicycling or walking. The current Average Vehicle Ridership for Toshiba is 1.11.

Employee Transportation Coordinator Lorraine Valencia indicated that convenience is a priority for Toshiba employees. Due to recent layoffs at the company, many employees are working longer, more irregular hours, which makes it difficult for many to rideshare. For these reasons, the preferred mode appears to be the private automobile.

D. Parking Occupancy/Utilization

A parking utilization study was conducted for the Toshiba site on June 2, 1992.

**TABLE** 3: PARKING UTILIZATION - THE TOSHIBA OFFICE PORTION OF SITE

| | | |
|---|---|---|
| Time of Peak Utilization | | 10:30am to 11:00 am |
| Employee Density (Emp./1,000 occupied gla) | | 6.4 |
| Spaces Demanded Per Employee | | 0.39 |
| Current Occupancy | | 100% - owner occupied |
| Parking Utilization | @ Current Occupancy | 50.5% |
| | @ 95% Occupancy | 48% |
| | /1,000 Occupied gfa | 2.25 |
| Level of Visitor Parking | | Low-3% of all parking at peak |

**E.** Parking Agreements/Tenant Parking

The parking area is used exclusively by Toshiba employees and visitors. Employees may park anywhere on the site, as permitted. Toshiba has designated a number of convenient parking spaces for management personnel, located close to the administrative office building. The parking area is policed by a guard, who ensures that reserved spaces are being used correctly.

F. Parking Economics

**TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING** (MONTHLY PER SPACE) - THE TOSHIBA OFFICE BUILDING

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $12.00 |
| | Land Area/Space (Sq. Ft.) | x 482 |
| | Land Cost/Space | = $5,784 |
| | Construction Cost/Space | + $2,055 |
| | TOTAL, | $7,839 |
| | AMORTIZED AT 8.5% INTEREST RATE | $60.78/mo. |
| OPERATING COST | Surface/Uncontrolled | $1.67 |
| TOTAL | | = $62.45 |

Toshiba owns the parking area and does not charge its employees for parking. The capital and operating costs for parking are borne by the company.

G. Parking Management

Toshiba America operates the parking area. Architect Lloyd Nikaido indicated that Toshiba had briefly considered the option of building a controlled parking area, but decided against it. One of the main parking problems related to the lot is its layout. Toshiba has experienced some building security problems in the past, and so has restricted the number of entry points into the buildings. As a result, some employees who parking in the outlying locations often have to walk a long distance from their cars to the building. This can result in employee tardiness, and also has a significant effect on employee morale.

Iv. Attitudes About Parking

A. Public Sector

Local Government

The City of Irvine has a progressive set of parking regulations that are described in Chapter V. They allow flexibility in the number of spaces supplied and encourage ridesharing and other transportation demand management (TDM) measures. The only special provision that applied to this site is that 10% of parking spaces be designated for Carpools, and that those spaces be located conveniently near buildings.

B. Private Sector

Building Owner/Developer

Duane Bazzett, Facilities Manager for Toshiba, said that when Toshiba leased the land from the Irvine Company, it already had the required infrastructure/improvements. All Toshiba did was build its own structures and design the parking area. In designing the parking area, Toshiba supplied the amount of parking required by the city.

Employee Transportation Coordinator Lorraine Valencia said that the City of Irvine played an important role in site design, including the design of the parking areas. She felt that the city has very stringent development guidelines for the Irvine Spectrum area.

Ms. Valencia said that the biggest problem Toshiba has with parking is its design. The supply is adequate, although at the moment the staff level is down and so there are a lot of empty spaces on the south east side of the lot. Three years ago, when the number of staff was high, there were some minor problems with inadequate parking. Staff levels are constantly changing so such problems are generally temporary. The major complaint amongst employees is the layout of the lot, which leaves many of the parking spaces in very inconvenient locations. Employees parking in outlying areas often have to walk what they perceive to be a significant distance to access the building. Because Toshiba has experienced some security problems, it has reduced the number of entrances to the building, and this has exacerbated the problem. Although the work shift starts at 9 am, a large number of employees arrive

significantly earlier to get convenient parking.

Ms. Valencia said she never realized before how important convenient parking is to employees. “It has a significant affect on employee morale.” At Toshiba, awards are given for “Employee of the Month”, and the most requested incentive is a special parking space; it is more valued than even monetary incentives.

When asked how the AQMD's Regulation XV has affected its parking operation, Ms. Valencia said that, as a result of the plan, Toshiba began to designate rideshare spaces. Also it began to participate in vanpool program coordinated by Spectrum Motion. She said that Toshiba faces challenges in meeting its ridesharing target. From the time of the first plan in 1990 until the update in 1991, it did not make any progress in its Average Vehicle Ridership (AVR). As a result, the AQMD suggested that Toshiba institute measures such as monetary incentives and flextime to encourage more ridesharing. She said that these measures are not effective for Toshiba employees because they make high salaries, which reduces the effect of monetary incentives, and because they often work odd, extended hours due to staff cutbacks, making ridesharing difficult. For the employees “convenience is the number one priority,” and the private automobile is the preferred mode.

Architect

In designing its buildings, Toshiba worked closely with the architectural firm of Kajima Associates. When asked if there was any industry standard for parking, architect Lloyd Nikaido said that typically parking supply is regulated by city zoning requirements. In speculative project, a lender may have its own requirements in addition to city requirements. Generally, developers meet the minimum city requirements first, and then look to the market to see if the supply is competitive with the local office market. When building high rise office structures, developers are careful to supply an adequate amount of parking, but not too much because structures and underground parking facilities are very expensive. Overall, they want to minimize parking, at the same time ensuring that it is competitive. He said that developers spend a lot of time researching this type of information, because parking is an important selling point for a building.

Other factors that affect a developer’s decisions about parking may be the type of uses to be located at the site and the employee density expected. Developers also consider site design. They try to provide as much parking as possible, while maintaining a good site design. He felt that it is very uncommon for developers to ask for variances when a city has a high parking requirement. When designing the site, he said that no consideration was given to making the site amenable to transit.

Lender

The financing came through Toshiba Japan and a Japanese bank. No contact name was available for the lender. Architect Lloyd Nikaido said that because the building is owner-occupied, the lender probably did not play an important role in determining parking supply.

C. Tenants

Toshiba is building owner and tenant. Refer to the comments under Building Owner/Developer section for Toshiba's attitudes about parking.

Transportation Management Agency

Irvine Spectrum Motion is the transportation management agency (TMA) put in place to administer the transportation management plan for the Irvine Spectrum industrial complex. The agency works with employers and developers to develop ridesharing and other programs. It is mandatory that all developments located in the area fund and participate in the TMA's program.

Steve McCaughey of Spectrum Motion said that Toshiba has a very comprehensive trip reduction plan and good incentives that include ridesharing matching, a guaranteed ride home, and transit pass sales/subsidies. Spectrum Motion works closely with them to develop these programs.

When asked about pay-for-parking programs, Mr. McCaughey indicated that there is a lot of resistance in the area to charging employees for parking. Parking is abundant, and so no one considers this to be a workable plan. Also, none of the companies wants to be the first one to begin charging. He recalled an instance in which a consultant doing a parking study in the area could not get any of the businesses to cooperate on a pay-for-parking experiment.

STEWART PLAZA
400 North Mountain Avenue
Upland, California

## I. Conclusions

This site's characteristics describe a specialized office niche, i.e., mixed use, higher levels of amenities, many service-oriented office uses. The treatment of parking is typical for medium sized office projects--plentiful (5.0/1,000 square feet), free, uncontrolled parking. Actual parking utilization was below the manager's expectations on the day studied, but empty spaces are seen as a desirable marketing feature rather than a revenue loss.

## II. Characteristics of Site and Project

### A. Location

Upland, California is the randomly selected city that was chosen for study in San Bernardino County. It is located in the western region of the county, and is 15.2 square miles in size. The City of Upland is a largely built-out residential community. Most of the remaining vacant land will be developed for commercial uses.

Stewart Plaza, located at 400 North Mountain Avenue in Upland was selected for study with the assistance of the Upland Planning Department.

### B. Development Information

Stewart Plaza is a retail/commercial/office complex and was developed in five phases with the final phase being completed in June, 1990. It was a speculative project, but was based on an analysis of the Upland marketplace. Stewart Plaza was designed to be attractive on a move-up basis to tenants that were already familiar with the area and wanted to stay in Upland.

Ownership is structured in a partnership and the project was financed by Coast Federal Bank.

### C. Site Description

The overall development contains four commercial and retail structures, including a restaurant facing Mountain Avenue and three office structures set back further on the property. The entire site (including the retail establishments) is located on 9.064 acres. The study area, however, was limited to the three office buildings located to the rear of the site.

Stewart Plaza is located near the San Bernardino Freeway (10), the Ontario International Airport and is close to other adjacent freeways, such as the Foothill Freeway (210). It is located on the corner of Arrow Highway and Mountain Avenue.

Transit service provided by SCRTD and Foothill Transit, and includes three lines having

headways between 30 and 60 minutes. Transit stops are located at the vicinity of the site.

D. Building Description

The complex is built in the Southwestern style. The office buildings are designed with upscale amenities, including larger common areas and wide high entry corridors.

TABLE 1: STEWART PLAZA OFFICE BUILDING DESCRIPTION

| | |
|---|---|
| Number of Stories | 3 buildings @ 3-stories each |
| Gross Square Footage | 93,000 |
| Leasable Square Footage | 74,400 |
| Floor Area Ratio | 0.56' |
| Building Coverage | 18.7%' |

[1] This information is based on the total square footage needed for the buildings, including site area needed for parking on adjacent sites.

E. Building Occupancy

The General Manager of the site, Ronald Gray, said that the office portion of the site is approximately 75 percent occupied as of May, 1992. There are 43 office-type tenants, including mortgage and real estate companies, computer firms, attorneys, and a variety of other service-based firms. There are approximately 150 employees on the office portion of the site.

III. Parking Analysis

A. City Parking Requirements

According to Senior Planner John Atwater, the original Upland parking requirements were established in the city's 1958 zoning code. The current office parking standard is 1 space per 200 square feet of gross floor area for sites over 5 acres. On-street parking in the vicinity of the site is available.

B. Parking Supply

According to the parking utilization study performed on April 28, 1992 for this study, there are three access points to the office related portion of the site. This analysis covers the portion of the site containing the office buildings and an additional portion devoted to parking for those office uses through reciprocal parking agreements.

TABLE 2: PARKING SUPPLY FOR STEWART PLAZA

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted | 438 |
| Handicapped | 9 |
| Restricted (1 hour limit) | 18 |
| TOTAL SPACES PROVIDED | 465 |
| AMOUNT REQUIRED BY CITY | 465 |

C. Commuter Mode Choice

**According** to the tenants that were interviewed for this study, employees tend to drive alone to work. Since parking is free and abundant **and** no tenant is subject to the requirements of Regulation XV, ridesharing and utilization of public transit are not significant.

D. Parking Occupancy/Utilization

The parking utilization study conducted on April 28, 1992 revealed that the parking lot was significantly underutilized during the work day. The building management had estimated the parking area to be approximately 65% occupied during the day.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY - STEWART PLAZA

| | | |
|---|---|---|
| Time of Peak Utilization | | 3:00 pm |
| Employee Density (Emp./1,000 occupied gla) | | 2.69 |
| Spaces Demanded Per Employee | | 1.03 |
| Current Building Occupancy | | 75% |
| Parking Utilization | @ Current Occupancy | 33.9% |
| | @ 95% Occupancy | 42.7% |
| | /1,000 occupied gfa | 2.2 |
| Level of Visitor Parking | | High |

E. Parking Agreements/Tenant Parking

Parking for tenants of the office site is non-restricted and tenants may park wherever they choose within the lot. Generally, they tend to park on the periphery of the lot, making the spaces closest to the entrances available for visitors. The parking is free and is separately

charged for tenant leases. Parking is shared among the retail and commercial tenants. However, only a small percentage of visitors to the retail and commercial facilities park toward the rear of the site, where the office area is located.

F. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - STEWART PLAZA

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $15.00 |
| | Land Area/Space (Sq. Ft.) | x 433 |
| | Land Cost/Space | = $6,495 |
| | Construction Cost/Space | + $540 |
| | TOTAL, | $7,035 |
| | AMORTIZED @ 8.5% INTEREST RATE | $54.55/mo. |
| OPERATING COST | Surface/Uncontrolled | $1.66 |
| TOTAL | | = $56.21 |

G. Parking Management

Parking is self operated, but maintenance of the lot is the responsibility of the building owner, including lighting, landscaping, garbage collection and striping.

IV. Attitudes About Parking

A. Public Sector

Local Government

Senior Planner John Atwater and Associate Planner Jeffrey Bloom stated that the planning department has not observed a lack of parking within the office complexes under their jurisdiction. However, if a developer requests a parking variance, the city council will require that studies be conducted before considering the action.

B. Private Sector

Developer/Building Owner

The building owner, developer and lease agent for the Stewart Plaza site is Westrend Development. According to General Manager Ronald Gray, Westrend followed city code

with respect to the amount of parking provided. However, in general, they prefer to provide as much parking as possible. The amount of parking provided depends on prior experience, city code and the opinions of their engineers and architects, and also the specific use they are developing.

The developer stated that parking is very important, particularly with retail tenants. They want to ensure that there is adequate parking for customers as well as for the tenants themselves. If there is not enough parking, tenants will be reluctant to lease space. However, if there is adequate or more than adequate parking, the site becomes desirable because customers feel more comfortable coming to that site.

Lender

According to Jennifer Laurie, Senior Project Analyst for Coast Federal Bank, and the lender for the Stewart Plaza project, the parking should be up to city code. If the proposed site has very little parking, the lender will question the amount. However, if the parking seems adequate, it is not an issue.

C. Tenants

Due to the ample amount of parking available at Stewart Plaza, there are no complaints about parking adequacy. However, situations do arise with respect to designating spaces directly in front of storefront spaces. While this policy promotes visibility for the storefront, it is prohibited according to the Declaration of Covenants and Restrictions (CCR). The CCR is an attachment to the tenant lease that explains site rules and regulations. As a compromise, the building manager will designate certain spaces with one hour time limits to discourage long term parking in front of storefronts.

According to Susan Wallace of Advo Systems, an office tenant in the Stewart Plaza complex, parking is not cause for concern. It is not recognized as an issue, since the parking provided is ample.

RANCON FINANCIAL BUILDING
27720 Jefferson Avenue
Temecula, California

## I. Conclusions

This is a typical small-scale suburban project, with a 4.3 space per 1,000 square foot parking supply. The current parking space demand of 2 spaces per 1,000 square feet is less than half the required amount of parking. Those interviewed for the case study strongly believed that plentiful free parking was a necessary component of a successful development. This community is the most recent one to make a transition from rural uses to low density suburban uses.

## II. Characteristics of Site and Project

### A. Location

Temecula is the randomly selected city that was chosen in Riverside County. It is a newer suburban community, having incorporated recently in 1989. Located along the Interstate 15 corridor in the southern portion of Riverside County, Temecula is part of a rapidly growing region that experienced a residential and commercial development boom from 1987 to 1989. Despite its rapid growth, the 26.4 mile city with 27,099 residents maintains a rural character.

The study site, known as the Rancon Financial building, was selected for the study with the assistance of the Temecula planning department. The site is located at 27720 Jefferson Avenue, along one of the main business routes in the city and near the western boundary of the city. The Interstate 15 Freeway is directly adjacent to the site on the east.

### B. Development Information

Developed in 1986 by Rancon, the office was built to serve as the corporate headquarters for the developer and for its support companies. It is one of the premiere office buildings in the Temecula area. When it was built, existing office buildings in the area were mainly two story, garden type structures.

According to Vice-President Leroy Storaasli, the land and the building are owned by a limited partnership known as Rancho Park Partners, of which Rancon is a partner. There is an association formed between the four adjacent lots, which includes a set of Codes, Covenants and Regulations (CCR's) and a reciprocal parking agreement.

### C. Site Description

The site, bordered on one side by the freeway and on the other by a major arterial street, is relatively narrow. The Rancon Financial building and its parking area are located on 2.88 acres (including square footage for the parking provided on adjacent parcels). Adjacent uses

include office buildings to the north and south of the site, both of which were developed by Rancon in the same architectural style. The office to the north was developed at the same time as Rancon Financial and the office to the south was developed more recently in 1990. There is also a vacant lot located northeast of the site and next to the 15 Freeway; an office structure is planned for this site. Shared surface parking surrounds each of the buildings.

Access to the site is provided by a major arterial street and freeway on-ramps are located within 3/4 of a mile from the site, in both the north and south directions. Riverside Transit Agency (RTA) is the only transit agency currently providing service within the city. Temecula is not connected with other communities in the area via public transit. RTA's line 23 provides service within the city at 1 hour intervals throughout the day, including peak travel hours. The transit stop is located directly in front of Rancon Plaza. However, the majority of public transit trips in Temecula are for shopping or other non-work purposes.

D. Building Description

The Rancon Financial building, as well as the other buildings in Rancon Plaza, were designed to attract upscale, prestigious corporate tenants. The building's red brick exterior, large glass windows, and the use of a greenbelt with a water amenity also set it apart from the existing office developments in the city.

TABLE 1: RANCON FINANCIAL BUILDING DESCRIPTION

| | |
|---|---|
| Number of Stories | 4 |
| Gross Square Footage | 41,216 |
| Leasable Square Footage | 35,453 |
| Floor Area Ratio | 0.33' |
| Building Coverage | 10%' |

These figures include land area for 42 parking spaces located on adjacent parcels.

E. Building Occupancy

The Rancon Financial building is currently at 70% occupancy, with 3 tenants occupying just over 24,800 square feet. Rancon is the major tenant and the others include a real estate management firm with 60 employees and a branch office of an architecture firm with 2 employees that are only at the site two days a week. Both provide support services for Rancon. The total number of employees in the building is 79.

III. Parking Analysis

A. City Parking Requirements

At the time the Rancon Financial building was approved and built, the Temecula area was

under the jurisdiction of Riverside County. When the city incorporated in 1989, it retained the county's zoning ordinance, so the parking requirements have not changed. According to Section 18.12, Part C (29) of the Riverside County Zoning Ordinance, the parking requirements for professional business offices are 1 space for every 200 square feet of gross leasable floor area (or about 4.3 spaces per gross floor area for this project).

On-street parking is prohibited in the vicinity of the site.

B. Parking Supply

According to Leroy Storaasli of Rancon. there were no negotiations about parking for the site. Parking was built to conform to the county's standards, with no consideration given to employment density in the building.

TABLE 2: PARKING SUPPLY FOR RANCON FINANCIAL BUILDING

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-restricted | 118 |
| Handicapped | 2 |
| Visitor | 8 |
| Management Reserved | 6 |
| Loading | 1 |
| TOTAL ON SITE | 135' |
| TOTAL, PROVIDED ON SITE AND ON ADJACENT PARCELS | 177 |
| TOTAL REQUIRED BY CITY | 177 |

The balance of the required parking for the building (42 spaces) is located on the adjacent parcels A reciprocal parking agreement allows sharing of the parking areas between adjacent parcels.

C. Commuter Mode Choice

The tenants interviewed at the Rancon Financial building indicated that they were not subject to the AQMD's Regulation XV, and that no other mode-choice surveys had been conducted. Based on observations made during the parking utilization study and discussions with the developer and tenants, the dominant transportation mode appears to be the private automobile.

D. Parking Occupancy/Utilization

A parking utilization study was conducted for the Rancon Financial building on April 23, 1992. The figures shown in Table 3 are based on all parking provided for the site, including 42 spaces provided on adjacent parcels.

TABLE 3: PARKING UTILIZATION FOR RANCON FINANCIAL BUILDING

| | | |
|---|---|---|
| Time of Peak Utilization | | 10:00 am to 10:30 am |
| Employee Density (Emp./1,000 occupied gla) | | 3.18 |
| Spaces Demanded Per Employee | | 0.77 |
| Current Occupancy | | 70% |
| Parking Utilization | @ Current Occupancy | 34% |
| | @ 95% Occupancy | 47% |
| | /1,000 gfa | 2.12 |
| Level of Visitor Parking | | High-10% of all parked at peak |

E. Parking Agreements/Tenant Parking

According to Mr. Storaasli of Rancon, the Rancon building is part of an association formed by the four separately-owned adjacent lots. The association includes a reciprocal parking agreement, allowing sharing of the parking areas between the buildings. Susan Dell, President of Partnership Asset Management Company (PAMCO), a tenant in the building, said that there is no allocation of parking spaces in the lease, and that employees can park anywhere they want in the unreserved spaces surrounding the building. There are four covered spaces behind the building, reserved for management. Rancon and PAMCO each have two of these reserved spaces.

F. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - RANCON FINANCIAL BUILDING

| | | |
|---|---|---|
| CAPITAL, COST | **Land Value/Sq Ft** | **$15.00 (dev. est.)** |
| | **Land Area/Space (Sq. Ft.)** | **x 495** |
| | **Land Cost/Space** | **= $7,425** |
| | Construction Cost/Space | + $1,000 |
| | TOTAL | $8,425 |
| | AMORTIZED AT 8.5% INTEREST RATE | $65.32/mo. |
| OPERATING COST | Surface/Uncontrolled | $1.67 |
| TOTAL | | = $66.99 |

Tenants do not pay a separate cost for parking; the cost is built into their leases. Mr. Storaasli of Rancon said that the office market in that area would not support a charge for parking, and that any attempt to charge tenants for parking would drive the occupancy rate down rapidly. Tenants do not pay for parking, and no parking cost is passed down to their employees.

G. Parking Management

The parking is managed and operated by the owner/tenant Rancon. Neither the developer/owner nor the tenants commented on any parking management problems.

Iv. Attitudes About Parking

A. Public Sector

Local Government

When the Rancon Financial building was developed, the area was still under the jurisdiction of Riverside County. County planners could not be reached for their attitudes about parking. Senior Advance Planner John Meyer with the City of Temecula felt that the Riverside County Zoning Ordinance, adopted in full by Temecula when it became incorporated, could be improved. As far as parking requirements, he felt that Temecula is over-parked in many areas, while it is under-parked in others. He commented that it would be more effective to look at each use and its related parking needs separately, instead of looking at land uses as part of a homogeneous zone.

The city of Temecula and a consultant are currently in the process of developing a new general plan and zoning ordinance, and parking is one of the areas they will be looking at. Mr. Meyer said that the parking standards for tourist areas (currently under-parked) and retail shopping areas (currently over-parked) would be changed in the new ordinance, but that the standards for free-standing buildings (i.e. office uses) would not change much. At the most, the standard might decrease from 5 to 4 spaces per 1,000 square feet of gross leasable floor area.

When asked how the new parking requirements would be determined and the type of background research that would be conducted, Meyer commented that Temecula is just like other cities in that it will probably copy the parking standards from other cities. Also, when surveying other cities, a city will consistently pick the standard right in the middle of the range. An important issue for a city is that parking for different uses should be adequate as well as convenient. If it is not, business and tax dollars will be lost to other communities in the area.

Meyer said that most developers build the parking required by the city, and there are not many complaints about parking requirements. Staff planner Mark Rhoades commented that developers have only asked for variances in a few cases, and that they are invariably denied. City planners discourage variance applications by advising developers up front that they will likely be denied.

B. Private Sector

Developer/Building Owner and Manager

Leroy Storaasli, Vice-President of Asset Management for Rancon, said that the development industry standard for parking for multi-occupancy office projects is a 4 to 1 ratio. “It’s the magic number.” This standard is established by the development community and is also dictated by tenants seeking office space. It is determined first by looking at the city’s parking requirements and then by making a determination of anticipated occupancy in a building (how many people occupy a certain amount of building area). Developers sometimes use the expertise of space planners and architects to help them determine these requirements. What space planning has shown is that each person in a building needs approximately 250 square feet, which equates to 4 parking spaces required per 1,000 square feet.

Mr. Storaasli commented that most developers will generally supply the minimum number of spaces required, depending on the land available for parking. Typically, Rancon attempts to stay within the 4 to 1 or 5 to 1 ratio for parking, as dictated by a city. If a city has a large setback requirement, Rancon might try to use the setback area to provide additional parking, if there is a variance opportunity. The additional parking helps in marketing the project. He felt that when a building has a high traffic count and a high occupancy level, enhanced parking makes the building more marketable and therefore more valuable. The benefits of oversupplying parking far outweigh the costs (i.e. maintenance costs) “by 1000 percent”. As a building approaches 100 percent occupancy, parking becomes critical in tenant satisfaction.

It is important in attracting new tenants and, more importantly, in retaining existing ones.

Lender

According to Mr. Storaasli, Rancon did not take out loans for permanent financing. However, the construction financing was obtained. A loan number was not available, however so the original lender was contacted and asked general questions about its attitudes and perceptions about parking for suburban office developments.

Robert Maher, Portfolio Manager with Woodman of the World in Omaha, Nebraska, said that Woodman usually agrees with the city's parking requirements, but that the bank does have its own set of minimum requirements, based on experience. These comments are provided in Chapter VI.

Lease Agent

Rancon, the building owner and developer, maintains its own in-house leasing office. The leasing agent for the Rancon Financial building, Maggie Smith, felt that parking needs can vary considerably from tenant to tenant. The current standard of 5 spaces per 1,000 square feet is not necessarily enough for an employer with a high number of employees and clients. She said that the general standard is 200 square feet of office space per employee, but that other things to be considered are type of business, location, and the availability of on-street parking. She felt strongly that the current requirement in Temecula is adequate, and that a lower requirement would adversely affect the rural character of the area. She has never seen a situation in which parking was "oversupplied".

Ms. Smith said that parking supply is important to the marketability of the site. If a nearby office site supplies more parking, it will have a marketing advantage. Another important factor is convenience. If parking is difficult to access from the street, building marketability can be affected.

C. Tenants

Rancon is the major tenant in the building and the others, a real estate management firm and an architecture firm, provide support services for Rancon.

As the developer, Rancon's attitudes about parking are discussed in Section IV (B) above. The other major tenant, Partnership Asset Management Company (PAMCO), has been located at the site for 4 years and President Susan Dell said that the parking was not a major factor in their decision to locate at the site, because it was obvious to her that ample parking was provided. Their only concern is that enough spaces should be provided for all the employees to park their cars. PAMCO has had no problems to date with the parking for the site.

# TISHMAN WARNER CENTER BUILDING (20TH CENTURY INSURANCE)
6301 Owensmouth Avenue
Los Angeles,California

## I. Conclusions

This site was chosen because the single tenant charges its employees for parking. The result is a high level of carpooling, and reduced parking demand. However, because the lease does not separately charge for parking, the tenant does not receive any savings in occupancy costs as the result of reducing parking space utilization. The project also shows that when parking requirements are low, developers sometimes build more parking than the minimum, up to their perception of the market demand (code required 2.0/1,000; the developer provided 3.3/1,000).

## II. Characteristics of Site and Project

### A. Location

Woodland Hills is a largely built-out suburban community that experienced much of its development in the 1960s and 1970s. It is located in the southwest corner of the San Fernando Valley and in the northwest section of the City of Los Angeles.

The study site, known as the Tishman Warner Center Building, is located within the Warner Center Specific Plan area, one of four existing urban centers in the San Fernando Valley with intense, regional-oriented office and commercial development. With its existing specific plan dating back to 1971, the 1.5 square mile Warner Center is the only business district in the San Fernando Valley that was developed from the start in accordance with a private/public master plan. There are currently 15 million square feet of non-residential development (commercial/industrial) and 4,000 residential units located within the Warner Center.

The study site was purposefully selected for inclusion in the study because of its unique "pay-for-parking" scheme, instituted at the beginning of 1989, in which employees commuting to the site in single-occupant vehicles are required to pay a monthly fee for parking through a payroll deduction.

### B. Development Information

The site was developed in 1980 by Tishman West Companies. Although it was built as a speculative project, the building was designed under the assumption that 20th Century Insurance Company would be one of the major tenants in the building. While 20th Century did originally occupy 50% of the building, it now occupies 98% of the building.

Tishman West Companies manages and operates the site, maintaining a long term ground lease with the landowner, West Valley Partnership. The Tishman Warner Center building is owned by three entities: Tishman Warner Center Limited Partnership, Metropolitan Life

Insurance Company, and West Valley Partnership.

Information about the permanent lender and project financing was not available.

C. Site Description

The Tishman Warner Center building and its associated parking area are located on a 7.87 acre parcel along Owensmouth Avenue, between Victory Boulevard and Erwin Street. The east side of the building is adjacent to Owensmouth Avenue, with a landscaped setback, and the building is surrounded on all other sides by a large area of surface parking.

Adjacent uses include another office site to the north, a residential condominium complex to the east, a low-rise commercial building to the south, and an empty lot to the west.

Access to the site is provided by DeSoto Street, a major arterial street that connects with the Ventura Freeway (101), 1 mile to the south of the site. The Southern California Rapid Transit District (SCRTD) is the only public transit agency providing regular service to the site. The transit routes most directly serving the site are 161,164 and 164. Line 161, serving the areas of Westlake Village, Agoura Hills, Calabasas, and Canoga Park, stops l/4 mile from the site and has peak period headways of 30 to 60 minutes. Lines 164 and 165, serving the areas of Canoga Park, Reseda Van Nuys and Burbank, have peak period headways of 20 minutes. Line 164 stops 1/4 mile from the site and line 165 stops approximately l/3 mile from the site. In addition, Antelope Valley Transit and the Simi Valley/Warner Center Express provide limited service between outlying residential communities and the San Fernando Valley. These express services stops l/4 mile from the site.

Employees at the site also have the option of participating in a vanpool service (Vanpool Services, Incorporated) that is coordinated by the Warner Center Transportation Management Organization.

D. Building Description

The building is an upscale, corporate style building.

TABLE 1: TISHMAN WARNER CENTER BUILDING DESCRIPTION

| | |
|---|---|
| Number of Stories | 11 |
| Gross Square Footage | 274,000 |
| Leasable Square Footage | 230,000 |
| Floor Area Ratio | 0.8 |
| Building Coverage | 6.3% |

E. Building Occupancy

According to Property Manager Chris Day, the building is currently at 100% occupancy, with 7 tenants. The anchor tenant, 20th Century Insurance Company, occupies 98% of the building, while support tenants, which include uses such as a card shop and a coffee shop, occupy only 2% of the building. The total number of employees in the building is 1,020.

III. Parking Analysis

A. City Parking Requirements

The building was approved and developed under City of Los Angeles parking requirements, which were incorporated into the original specific plan for the area. According to the Los Angeles Municipal Code, "there shall be at least two automobile parking spaces for each 1,000 square feet of combined gross floor area contained within all office, business, commercial, or research and development buildings on any lot." Michael Davies, Hearings Examiner for the Los Angeles City Planning Commission, indicated that this parking requirement has been in effect since the introduction of the original code in 1946.

A new specific plan for the Warner Center is currently being developed, and the review process is expected to be completed in March 1993. At the time the new specific plan takes effect, the parking requirements for Warner Center will change considerably. Three future phases of development are planned, and at each phase there will be a set of maximum parking requirements for single occupancy vehicles and minimum parking requirements for high-occupancy vehicles. Minimum requirements for intercept parking will also be imposed. While existing developments will not be subject to the new parking requirements, they will be required to comply with Transportation Demand Management measures, which include Average Vehicle Ridership (AVR) requirements for all companies employing 50 or more employees.

On-street parking is prohibited in the immediate vicinity of the site, and the closest on-street parking available is five blocks away, with a two-hour time limit. Jeff Gunn of 20th Century Insurance indicated that it is not feasible for employees to utilize on-street parking.

B. Parking Supply

According to Larry Friedman, a planner with the Van Nuys Neighborhood Planning office, there were no discretionary actions for this site. Although the city's minimum parking standards would have required 548 parking spaces for the site, there are actually 891 spaces available, 63 percent greater than the required amount.

James Sinsheimer of Tishman West Companies explained that the amount of parking provided at the time the site was developed was determined by market demand for parking in the area. It was felt that the City of Los Angeles' requirement of 2 spaces per 1,000 gross square feet would result in insufficient parking, and so Tishman West provided parking to

meet a demand of slightly over 3 spaces per 1,000 square feet in order to match the amount of parking supplied at most other office developments in the area.

TABLE 2: PARKING SUPPLY FOR TISHMAN WARNER CENTER BUILDING

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-restricted | 735 |
| Handicapped | 8 |
| Visitor | 44 |
| Reserved | 95 |
| Vanpool/Carpool | 6 |
| Mail Van | 3 |
| TOTAL AMOUNT PROVIDED | 891 |
| AMOUNT REQUIRED BY CITY | 548 |

C. Commuter Mode Choice

Twentieth Century Insurance Company is subject to the AQMD's Regulation XV. Because 20th Century occupies 98% of the building, the Regulation XV Plan accurately reflects the mode choice for the site. The most recent Regulation XV Plan shows that, of those employees responding to the survey, 45 percent drove alone, 50 percent commuted by 2 or more person Carpool, 2 percent used vanpool services, and 1.7 percent used public transit or buspool services. The current Average Vehicle Ridership (AVR) at 20th Century Insurance is 1.4. This is the highest level of ridesharing at any of the study sites.

D. Parking Occupancy/Utilization

A parking utilization study was conducted for the Tishman Warner Center building on April 8, 1992.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY - THE TISHMAN WARNER CENTER BUILDING

| | | |
|---|---|---|
| Time of Peak Utilization | | 11:00-11:30 am and 3:00-3:30 pm |
| Employee Density (Emp./1,000 Occupied gla) | | 4.43 |
| Spaces Demanded Per Employee | | 0.67 |
| Current Building Occupancy | | 100% |
| Parking Utilization | @ Current Occupancy | 76.3% |
| | @ 95% Occupancy | 72% |
| | /1,000 Occupied gfa | 2.48 |
| Level of Visitor Parking | | Low-5% of total spaces at peak |

E. Parking Agreements/Tenant Parking

The parking area is utilized by the seven tenants in the building. No spaces are leased to outsiders. Because the parking is controlled, each vehicle must use a card key to access the lot. Twentieth Century Insurance tracks all of its ridesharing vehicles and single-occupant vehicles on computer, and issues card keys based on the type of vehicle. Because the building is essentially a one-tenant building, 20th Century Insurance is not allocated a specific amount of parking or location to park. Unreserved parking for employees (single-occupancy vehicles and Carpools) is generally located around the perimeter of the parking area, while reserved spaces, vanpool spaces, and visitor parking is close to the building.

F. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - TISHMAN WARNER CENTER BUILDING

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $20.00 |
| | Land Area/Space (Sq. Ft.) | x 303 |
| | Land Cost/Space | = $6.060 |
| | Construction Cost/Space | + $1,000 |
| | TOTAL | $7,060 |
| | AMORTIZED AT 8.5% INTEREST RATE | $54.74/mo. |
| OPERATING COST | Surface, with attendant and card key entrances | $5.61 |
| TOTAL | | = $60.35 |

Tenants do not pay a separate cost for unreserved parking; the cost is built into their leases. Tenants do have the option of leasing ***reserved*** spaces for a fee of $70 per space per month. Jeff Gunn of 20th Century said that currently his company has 48 reserved spaces, but that it only pays for a portion of these; the rest are part of the parking that is granted in the lease agreement.

Although 20th Century Insurance does not pay a separate fee for unreserved parking, it does charge employees who drive alone to work a parking fee of $30.00 per month. Employees who choose to carpool receive free parking benefits and employees who use the vanpool service operated in the Warner Center or use public transit are subsidized by 20th Century Insurance.

G. Parking Management

The parking area is owned by Tishman West Companies, but is managed by a private parking company, Parking Concepts. Dennis Morris, District Manager for Parking Concepts, said that his company manages the facility for Tishman, and is reimbursed for the operation. Parking Concepts manages and controls the operation, monies collected from visitor parking, and validated parking and monthly parking. It also handles daily management problems, equipment problems, and other related parking management problems.

Mr. Morris indicated that there are no management problems at the site, as far as outsiders using the parking area, because it is basically a one-tenant building and the lot is controlled--it can only be accessed with a card key. Property Manager Chris Day mentioned that 20th Century Insurance has experienced some problems with its employees parking in the shopping center parking lot to the south. The center has complained, and 20th Century is attempting to stop this practice.

Iv. Attitudes About Parking

A. Public Sector

<u>Local Government</u>

Michael Davies, Hearings Examiner for the City Planning Commission, said that the city council's concerns regarding parking depend on the context of the development. For example, if an office building is located on a site adjacent to residential areas, which is typical in suburban areas like the San Fernando Valley, then the city is concerned about the parking for the commercial developments spilling over into residential areas. In cases where this is a potential problem, the city may require additional parking. He felt that there is no general trend in the council's attitudes towards parking.

Mr. Davies said that, in general, most developers meet the code requirement for parking, sometimes providing more. Variances for less parking than required are very rare, because the city requirement is already low. Overall, it is a marketing strategy for developers to

provide additional parking. The code gives developers the option of reducing parking by instituting shared parking arrangements and by locating developments within a specified distance of a transit facility. The latter option is not commonly used.

When asked whether he felt the city parking requirement was adequate, Mr. Davies said that while it may seem low relative to other jurisdictions, it is adequate because many areas of Los Angeles are more urbanized, with more public transit available. However, in places where transit is not a viable option, more parking is probably needed. He indicated that the city has experienced some problems with undersupplied parking in mixed use areas, where different uses such as retail establishments and health clubs share parking with offices.

B. Private Sector

Developer

The developer, Tishman West Companies, was not available to comment on its perceptions about parking.

Property Manager

Chris Day, Property Manager for the site, said he believed the parking ratio used when the Tishman Warner Center building was developed was 3 spaces per 1,000 square feet. He indicated that this figure is based on what people want, or what the market demands. They have found that this ratio results in an adequate amount of parking. Building a larger amount would not be cost effective and building a smaller amount would discourage potential tenants from leasing their building.

Parking Operator

Dennis Morris, District Manager for Parking Concepts, felt that parking supply and price are market-driven. He said that the rule of thumb used to be that parking for office developments is a ratio of 4 spaces per 1,000 square feet. He said he believed that the ratio was slightly lower for Tishman Warner Center, at about 3.5 spaces per 1,000 square feet. Basically, the size of the parking area for the building was determined by this standard.
Mr. Morris said that since he has been involved with the project, only about 80% of the stalls have been utilized. There have never been any parking studies done because there is plenty of parking. He said that the only time his company would conduct a study is if parking was undersupplied, leading to problems such as double parking.

As far as the value of parking, his company has conducted market studies in which it compares its rates to those of others in the area. He said that Parking Concepts has never actually tried to estimate the value of each space, but that it determines its parking rates by looking at the rates charged by the competition in the area.

**Lender**

Information about the lender was not available.

C. Tenants

When asked whether parking played a role in 20th Century Insurance's decision to locate at the site, Human Resources Manager Jeff Gunn said that it was not a consideration at all. The key factor was that 25% of their insurers are located in the San Fernando Valley.

Mr. Gunn said that parking at the site is plentiful, especially since his company initiated the pay-for-parking scheme. Despite the fact that it is using a much smaller portion of the parking area, 20th Century Insurance's lease rate is still the same. As mentioned, there is no separate charge for parking. He indicated that many of the companies in the area face a similar situation--in order to comply with the AQMD's Regulation XV, they have begun charging employees for parking (some up to $70 per month) and as a result have excess parking.

Transportation Management Organization (TMO)

The Warner Center TMO coordinates the ridesharing and other transportation demand management programs for the specific plan area. Chris Park said that his organization tries to promote positive incentives to ridesharing. His feeling, which is shared by many of the companies in the area, is that pay-for-parking schemes should only be used as a last resort, because they are particularly harmful to employee morale. At a time when companies are cutting back in other employee benefit areas, many are reluctant to start charging employees for parking. Currently only 20% of the companies in the area charge for parking, 20th Century Insurance being one of them.

Mr. Park said that many companies in the area have been able to achieve good Average Vehicle Riderships (AVRs) without charging for parking. How an incentive is offered is just as important as what is offered. For example, if employees are given a subsidy to rideshare, but do not know how to organize a Carpool, they are likely to avoid ridesharing. The TMO tries to take a very proactive stance by providing carpool matching assistance for its companies. He felt that the success of the TMO has been very unique, considering the fact that it is operating in a suburban setting.

Mr. Park indicated that 20th Century Insurance, a founding member of the TMO, is one of the largest employers in the area and one of the first to charge employees for parking. As a result, it has one of the highest AVRs in Warner Center and has maintained this for the last few years. The positive services offered by 20th Century Insurance are carpool matching, a guaranteed ride home program, a subsidized Vanpools.

# 2529 FOOTHILL BOULEVARD
La Crescenta, California

## I. Conclusions

This project was chosen because the County's requirement (2.5 spaces/l,000 square feet is lower than the regional average. The developer supplied parking at code (and therefore provided less than the 4.0 "rule of thumb" used in the development community) because he was trying to maximize the building area on the site. The relatively low amount of parking provided has not been a problem to date.

## II. Characteristics of Site and Project

### A. Location

The La Crescenta area is located in an unincorporated section of Los Angeles County. Los Angeles County was selected because of the county's low parking minimum requirement of 2.5 spaces per 1,000 square feet of office area. The 2529 Foothill site was chosen as an example of a small scale office complex with a lower than average parking supply.

### B. Development Information

The 2529 Foothill building, completed in February 1990, was built by a local developer/owner. It is a speculative project that is located in a commercial/residential zone.

### C. Site Description

The 2529 Foothill building is located on a 0.56 acre parcel near the Foothill Freeway, on one of the major thoroughfares in the area. The building is backed up into a hill and slopes forward. Transit service is limited to typical suburban standards, with Southern California Rapid Transit District (SCRTD) being the only transit operator directly serving the site. Line 177, with peak period headways of 40 minutes, stops approximately l/2 mile from the site.

### D. Building Description

The average suite size in the office portion of the building is 1,500 square feet. The street level floor contains a total of 1,234 square feet, with the 2 upper floors containing 5,281 square feet and 6,343 square feet respectively. Landscaping makes up 4,937 square feet or 20% of the site.

TABLE 1: 2529 FOOTHILL BUILDING DESCRIPTION

| | |
|---|---|
| Number of stories | 2 stories and a retail basement |
| Gross Square Footage | 12,858 |
| Rentable Square Footage | 12,200 |
| Floor Area Ratio | .53 |
| Building Coverage | 26% |

E. Building Occupancy

The building is 76 percent occupied with five small tenants, including insurance and real estate companies. There are approximately 25 employees on site.

III. Parking Analysis

A. County Parking Requirements

The County of Los Angeles has a parking requirement of 1 space per 400 square feet of commercial office floor area. In 1988, the Los Angeles County Board of Supervisors was in the process of changing the parking ordinance to one parking space for every 250 square feet of commercial space in order to simplify the parking requirements across the board. However, environmental groups and air quality interests sued the County in order to stop this action. Concurrently, the County Supervisor leading this motion resigned and the requirement reverted back to 1 space per 400 square feet.

B. Parking Supply

There is one entrance/exit point for automobiles on site. Twenty two of the 32 parking spaces available were reserved by suite number. There are also six tandem spaces that were not counted in this the occupancy and parking data.

TABLE 2: PARKING SUPPLY FOR 2529 FOOTHILL

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Reserved by Suite number | 22 |
| Handicapped | 1 |
| Restricted (Visitor) | 9 |
| TOTAL AMOUNT PROVIDED | 32 |
| AMOUNT REQUIRED BY COUNTY | 32 |

C. Commuter Mode Choice

No survey data on mode choice was available. However a tenant with eleven employees said that all employees drove alone to work.

D. Parking Occupancy/Utilization

The parking utilization study was conducted on May 20, 1992.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY - 2529 FOOTHILL BUILDING

| | | |
|---|---|---|
| Time of Peak Utilization | | 11:30 am |
| Employee Density (Emp.1,000 Occupied gla) | | 2.7 |
| Spaces Demanded Per Employee | | 0.72 |
| Current Building Occupancy | | 76% |
| Parking Utilization | @ Current Occupancy | 56% |
| | @ 95 % Occupancy | 70% |
| | /1,000 Occupied gfa | 1.84 |
| Level of Visitor Parking | | LOW |

E. Parking Agreements/Tenant Parking

Parking is not recovered as part of the lease costs and is considered free. However, tenants are given a set number of parking spaces to use as part of their lease agreement. While parking spaces are marked with a suite number, it was observed during the parking study that employees park wherever they choose, regardless of the suite number designation.

F. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - THE 2529 FOOTHILL BUILDING

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $10.00 |
| | Land Area/Space (Sq. Ft.) | x 325 |
| | Land Cost/Space | = $3,250 |
| | Construction Cost/Space | + $500 |
| | TOTAL | $3,750 |
| | AMORTIZED AT 8.5% INTEREST RATE | $29.09/mo. |
| OPERATING COST | Surface/Uncontrolled | $1.60 |
| TOTAL | | = $30.67 |

Tenants are not charged for the use of the parking lot and it is not directly recovered in the lease cost.

G. Parking Management

Parking is self operated, but maintenance of the lot is the responsibility of the building owner.

IV. Attitudes About Parking

A. Public Sector

Local Government

The attitude of the local government is that the parking requirement of 1 space per 400 square feet of office space is adequate. Most of the Los Angeles County properties are located in the suburban areas and most of the buildings under their jurisdiction are small in size.

B. Private Sector

Developer/Building Owner

The building owner David Downs said that the architect followed county code when designing the site. The general consensus is that parking for the site is adequate, although some of the tenants have complained that the compact spaces are too small.

Lease Agent

The lease agent for this site is Property Investment Services. According to the principal, Joe Stitick, parking is key to the marketability of a site. A site with abundant parking can charge higher lease rates and will be more desirable to a tenant. However, parking has had little effect on the marketability of this site.

Lender

Information about the permanent lender for the site was not available.

# BUILDING A
Brea, California

## I. Conclusions

This building illustrates the effects of a high employee density on parking demand. Even though the project exceeds minimum code requirements and has the highest supply of any of the case studies, the parking lot is usually full at the peak period and additional parking is leased off-site. When cities zone for an oversupply of parking, they are anticipating circumstances such as those found in this project. Building A is not named because the tenant requested anonymity.

## II. Characteristics of Study Site and Project

### A. Location

The City of Brea is located in the northern portion of Orange County. The 10.7 square mile city has 33,528 residents. Building A is a purposefully selected site located on Imperial Highway, a four lane state designated highway, in the City of Brea. The site was selected for the study because parking demand exceeds supply.

### B. Development Information

The building was completed in 1984 and remained a vacant shell until 1988 when the current occupant moved into the site. The building owner is also the occupant.

### C. Site Description

There are two large single tenant buildings located adjacent to the site. The site is located near the Brea Mall and a commercial strip. Access to the site is provided by the Orange Freeway (57). SCRTD and OCTA provide service to the site. Six lines provide service to the Brea Mall, approximately 3 miles from the site, at 40 to 60 minute headways.

### D. Building Description

The building is two stories tall and contains 93,000 gross square feet. Visitor parking is located in a circular drive formation facing Imperial Highway, as well in the rear of the site, where employee parking is located in a mixed lot of structure and surface parking.

TABLE 1: BUILDING A DESCRIPTION

| | |
|---|---|
| Number of stories | 2 |
| Gross Square Footage | 93,000 |
| Leasable Square Footage | 83,700 approx. |
| Floor Area Ratio | 0.4 |
| Building; Coverage | **20%** |

E. Building Occupancy

Building A has a single tenant occupying 100% of the building. At the time the study was done, there were 870 employees working at this site. Approximately 120 employees work on a 4/40 compressed work week The employee breakdown is 40 percent management and 60 percent clerical. The primary activity of the tenant is loan processing.

III. Parking Analysis

A. City Parking Requirements

The City of Brea has a parking requirement of 4 spaces per 1,000 square feet of office space. At the time the building was constructed, the parking provided would have been sufficient, had the building been occupied at standard rates. However, the tenant has a high employment density and therefore the current employees demand more parking than is available on the site.

The 4 spaces per 1,000 square foot requirement was based on industry standard, according to Brea City Planner Kondradt Bartlam. Bartlam indicated that the requirement is a generic one and therefore does not apply to buildings that have a very high employment density.

If there is a modification to the parking code, the Planning Department will take the lead role. It is voted on by the planning commission. Throughout Bartlam's three year experience with the city of Brea, a parking variance has never been approved.

On-street parking is prohibited in the vicinity of the site.

B. Parking Supply

The parking utilization study for this site was performed on March 11, 1992. In addition to the parking figures listed below, the tenant leased fifty more spaces at a nearby parking lot approximately .33 mile away from the site, for a monthly fee per space.

TABLE 2: PARKING SUPPLY FOR BUILDING A

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted | 295 |
| Reserved - Carpool | 163 |
| Handicapped | 7 |
| Restricted (Visitor) | 13 |
| TOTAL AMOUNT PROVIDED | 478' |
| AMOUNT REQUIRED BY CITY | 372 |

**273** spaces are located in a parking structure; 205 are surface parking spaces.

C. Commuter Mode Choice

The Premises Manager said that the Regulation XV plan, with its incentives for ridesharing and the incorporation of a 4/40 schedule, has been helpful in alleviating the undersupply of parking. Regulation XV events and programs are implemented throughout the year. For example, prizes for new carpool sign ups, luncheons, and special holiday give a ways. During Rideshare Week, there are ongoing gifts to carpoolers and drawings for non-carpoolers.

Currently, there are 128 designated carpool spaces on site. Carpoolers must be registered with the premises manager in order to park in a designated carpool parking space. The following are incentives to Carpool:

- A subsidy of $15 per month per carpool (no matter how many ride) paid on a quarterly basis.
- A registered parking space.

The guarantee of a registered carpool parking space may be more effective incentive here than at most companies, because there is a real parking shortage at the site.

D. Parking Occupancy/Utilization

A parking utilization study was conducted for the site on March 11, 1992.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY: BUILDING A

| | | |
|---|---|---|
| Time of Peak Utilization | | 11:00 am |
| Employee Density (Emp./1,000 occupied gfa) | | 10.39 |
| Spaces Demanded Per Employee | | .63 |
| Current Building Occupancy | | 100% |
| Parking Utilization | @ Current Occupancy | 98% |
| | @ 95% Occupancy | 98%' |
| | /1,000 Occupied gfa | 5.0 |
| Level of Visitor Parking | | Low |

'Use ot 50 off-site spaces would be reduced by 23 spaces, so on-site occupancy would not change

The premises manager is aware of the high occupancy parking problem and estimated that the parking lot would be filled to capacity for most of the day. Because on-street parking is prohibited in the vicinity of the site, spillover parking does not occur.

E. Parking Agreements/Tenant Parking

Employees may park anywhere within the lot, except for the Carpool, visitor and handicap restricted spaces. Those with company registered carpool passes may park in the more desirable spaces located close to the building.

F. Parking Management

Parking management is handled by the premises manager. She is also the building employee transportation coordinator and is responsible for implementing the Regulation XV transportation demand management plan. A security firm is retained for building security, and it patrols the parking area as required.

G. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING MONTHLY PER SPACE) - BUILDING A

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $14.00 |
| | Land Area/Space (Sq. Ft.) | x 281 |
| | Land Cost/Space | = $3,934 |
| | Construction Cost/Space (Average for surface and structure) | + $3,856 |
| | TOTAL | $7,790 |
| | AMORTIZED AT 8.5% INTEREST RATE | $60.41/mo. |
| OPERATING COST | Surface & Structure / Uncontrolled | $2.90 |
| TOTAL | | = $63.31 |

This single tenant site does not charge for parking costs.

IV. Attitudes About Parking

A. Public Sector

Local Government

According to City Planner Bartlam, parking is not an issue in the City of Brea, but traffic is a major concern. Brea's regional location provides many jobs and the Brea Mall generates traffic. In addition, Brea is considered a "through" city, whereby commuters use Imperial Highway (a city street) to bypass traffic on the area's freeways. The City is beginning to take action to correct the traffic problems by creating Transportation Demand Management Plans for newer office developments. As these projects prove successful, the parking ordinance may be amended.

As far as Building A is concerned, the City of Brea is aware of the parking undersupply. Bartlam suggests that while the tenant has implemented a rideshare program, more could be done to encourage ridesharing. He advocates charging for parking and creating a transit stop on a nearby street. In his opinion, the adjacent office buildings provide the potential ridership to make this idea feasible.

B. Private Sector

Developer

The developer for this site was not available for comment.

Lender

The lender was not available for comment.

C. Tenant

The Premises Manager noted that the Regulation XV ridesharing incentives and the incorporation of a 4/40 schedule have been helpful in alleviating the undersupply of parking. She indicated that the undersupply of parking is a negative incentive that influences employees to rideshare. Regulation XV events and programs, such as prizes for new carpool sign ups, luncheons, and special holiday giveaways, are implemented throughout the year.

According to the Premises Manager, the site has attempted to have a transit line set up along Imperial Highway. However, according to the transit operator, transit stops can not be set up along state highways. Bartlam suggests the transit stop be located on Swanson, a nearby street.

# BUILDING B
Costa Mesa, California

## I. Conclusions

Building B was selected because one employer does not subsidize its workers parking. The employer is a professional services firm in which employees frequently work out of the office. In this instance, the parking charges did not induce any significant ridesharing. Another tenant, however, offered a generous commute allowance program, and did achieve some results. This is a high density site, with structure parking, shared parking and having no parking subsidies or guarantees built into leases. Building B is not named because a tenant requested anonymity.

## II. Characteristics of Site and Project

### A. Location

Costa Mesa is located in the central portion of Orange County, and is 16.1 square miles in size. The municipality consists of residential, commercial and industrial uses. Building B was purposefully selected because a major employer charges for parking.

### B. Development Information

Building B was originally designated to be built at a different location. It was located at the current site due to a sequence of events regarding the construction of a new Performing Arts Center. The land for the Arts Center and the parking structure was donated by an Orange County developer (the developer/owner of Building B). The funding to pay for the construction of the Arts Center was to come from charitable donations, while the City of Costa Mesa agreed to pay for the construction costs of the parking structure. However, the city agreement fell through. Subsequently, a bond issue was initiated and the land owner opted to locate the office building at the current location, as a way of funding the construction of parking required for the Arts Center. Building B shares the parking structure with the Arts Center.

### C. Site Description

The site, located on a 4-acre parcel, was designed as part of a larger multi-purpose, pedestrian-oriented complex. Building B is located near several freeways including the San Diego (405), Newport (55) and Corona del Mar (73) freeways. It is also located near the John Wayne Airport and the South Coast Plaza Retail Center.

Public transit service to the site is provided by the OCTA. Six lines serve within 400 to 800 feet of the site, with peak headways between 10 and 40 minutes. Transit service is relatively good for a suburban area.

D. Building Description

The office building was completed in the 1987. It is 20 stories tall and claims to be the tallest office structure in Orange County. The exterior is made of polished napoleon red Swedish granite with **solar** gray glass and bronze trim. The parking structure is five stories high and has covered walkway leading to the building.

TABLE 1: BUILDING B DESCRIPTION

| | |
|---|---|
| Number of stories | 21 |
| Gross Square Footage | 465,000 |
| Leasable Square Footage | 450,000 |
| Floor Area Ratio | 2.6' |
| Building Coverage | 13%' |

Include land area devoted to parking on other parcels.

E. Building Occupancy

Building B has a wide range of tenants, including corporate offices for many prominent legal and accounting firms, banks, insurance companies and a wide range of service organizations. There are 42 tenants, 3 of which have over 100 employees and are subject to the AQMD's Regulation XV. As of August, 1992, the site is 89 percent occupied, and the space per tenant ranges from 500 square feet to 60,000 square feet.

III. Parking Analysis

**A.** City Parking Requirements

The City of Costa Mesa requires 3 parking spaces per 1,000 square feet of office space for buildings over 2 stories and over 100,000 square feet. However, in cases where there will be mixed use or shared parking, a reduction in the amount of required parking may be approved through a conditional use permit. These changes occurred in 1985.

**Building B was** one of the first cases to take advantage of this policy. Since Building B was to share parking with the Performing Arts Center, and due to the high intensity of the office development, city staff considered that there may be less automobile traffic than normal and recommended a reduction to 1,257 spaces for this project.

According to the City of Costa Mesa, the area adjacent to the site is striped for no parking.

B. Parking Supply

The parking structure's design incorporates the special concerns of the patrons of the Arts

Center. Specifically, sheer walls were reconfigured and high capacity, glass elevators were installed. According to the building owner, security and safety were important issues in the design of the garage. The design of the structure is supposed to alleviate the fears of those that rarely use parking structures and envision them as dark and dangerous places.

TABLE 2: PARKING SUPPLY FOR BUILDING B

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted | 1068 |
| Reserved | 125 |
| Handicapped | 21 |
| Restricted (15 minute limit) | 4 |
| Restricted (5 minute limit) | 4 |
| Leading | Located outside structure |
| TOTAL AMOUNT PROVIDED | 1,222 |
| AMOUNT REQUIRED BY CITY | 1,257 |

C. Commuter Mode Choice

This site was chosen because a firm in the building was charging its employees for parking. That firm, in accounting and professional services, was interviewed for this study. We found that many employees travel off-site for a majority of the work to be performed during the day. Many remain off-site and rarely come to this office location. The firm has 224 employees and is therefore subject to Regulation XV. At the time the survey was conducted, over 90 percent of employees drove alone to work; only 8 percent carpooled. Almost half the employees based in this location do not report to the site on a given day.

The office manager indicated that if all her employees reported to the site each day, the parking structure would be more crowded. This company has been located at the site for five years and parking was not a factor in choosing this location. This employer does not subsidize its employees' parking (they must pay the $60 month rate). However, this parking cost has not affected their commuting habits apparently because a majority of the employees require automobiles for work out of the office.

We also interviewed a law firm in the building, subject to Regulation XV, that offers a generous transportation allowance and extra monetary incentives to encourage ridesharing This firm has 20 percent ridesharing, and the AVR has improved to 1.2. However, the employee transportation coordinator for firm perceives that the transportation allowance is a deterrent to greater ridesharing. At $90 per month, the commute allowance exceeds the

market cost of parking.

D. Parking Occupancy/Utilization

A parking utilization study for the site was conducted on June 10, 1992.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY: BUILDING B

| | | |
|---|---|---|
| Time of Peak Utilization | | 2:00 pm |
| Employee Density (Emp./1,000 occupied gla) | | 5.0 |
| Spaces Demanded Per Employee | | 0.33 |
| Current Occupancy | | 89% |
| Parking Utilization | @ Current Occupancy | 54% |
| | @ 95% Occupancy | 57% |
| | /1,000 Occupied gfa | 1.63 |
| Level of Visitor Parking | | Medium |

E. Parking Agreements/Tenant Parking

Parking is available for tenants and employees at a monthly rate and is handled through the property management office. Tenants may purchase any number of spaces they require with no minimum or maximum limit, as spaces allows. Other parking lots are located near the site, and commuters may park there. However, most choose to park in the office structure. Within the structure, commuters may park in any non-reserved or non-restricted space.

F. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - BUILDING B

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $49.00 |
| | Land Area/Space (Sq. Ft.) | x 75 |
| | Land Cost/Space | = $3,675 |
| | Construction Cost/Space | + $12,000 |
| | TOTAL | $15,675 |
| | AMORTIZED AT 8.5% INTEREST RATE | $121.55/mo. |
| OPERATING COSTS | Structure | $12.50 |
| TOTAL | | = $134.05 |

This site has the highest parking cost in study. Two main factors contribute to the cost: expensive land, and greater construction costs associated with the amenities provided in the structure. The cost of the parking was acknowledged by the owner, who indicated the $60 monthly charge does not even begin to cover to cost of the debt service. "What we find here is that there are so many opportunities to park free. I think when AQMD puts restrictions on all the peripheral lots, that may change the conditions we have with pay parking. So many people now park for free and we just recognize that this is the case".

G. Parking Management

A parking management company manages the parking garage. It is compensated on a monthly basis and provides a complete range of parking services. The tenants contract privately with the parking management company. The parking structure is controlled with a monthly card key entrances and a cashier for visitor parking.

IV. Attitudes About Parking

A. Public Sector

Local Government

The 1985 changes in the parking requirements were initiated by the City itself. According to an Associate Planner for the City of Costa Mesa, "It became obvious that we were processing parking and it wasn't necessary. You'd go up into the parking structure and once you passed the first few levels, they were empty. It was experience and research". The new requirements are more flexible. While the ordinance still states that an office building over

2 stories and over 100,000 shall provide 3 spaces per 1000 square feet of office space, the staff uses a shared parking formula to reduces requirements in some cases.

Transit Ouerator

When this project was under consideration, the local transit operator commented on the effects this project would have on the local area and recommended transportation improvements be incorporated into the final design. The recommendations included both the construction of bus turn-outs and waiting areas to implementing rideshare programs that encourage alternative modes of travel such as Carpools, vanpools, bicycling and walking to the site.

B. Private Sector

Developer/Building Owner

The building owner indicated that the standards that developers follows are not industry standards, but the standards of the city and of the lender.

Lender

The situation for this property is unique in that the building was designed to meet the parking requirements for the Performing Arts Center. According to the owner, since the situation was so unusual, the lender referred to the building owner's reputation regarding the parking for the site.

Lease Agent

The lease agent for this site felt that parking is one among many important factors to consider when leasing space. The site's many physical amenities, its central location and its available parking structure are among the attributes that attract tenants.

C. Tenants

According to both tenants that were interviewed for this study, parking was not a very strong factor in the decision to locate at this site.

# WELLS FARGO TOWER
Koll Center Irvine (North)
2030 Main Street
Irvine, California

## I. Conclusions

This project was chosen because it illustrates development circumstances in rapidly densifying CBD-like areas in the suburbs. This project is part of a mixed use master-planned redevelopment scheme, in which relatively new low density office uses were demolished for this project. Because land values are higher, developers are more concerned about the cost of oversupplying parking. Parking is provided in a structure, with parking charges and access controls. Tenants may or may not pay separate charges for parking, depending on their particular lease negotiations.

## II. Characteristics of Site and Project

### A. Location

Irvine is a newer, planned community located near the geographic center of Orange County. The study site, known as the Wells Fargo Tower, was purposefully selected for inclusion in the study because it represents the transition from a low-density to a higher density use.

Located at 2030 Main Street, the study site is in the Koll Center Irvine North (KCIN), a master-planned mixed-use office development on 47.6 acres that will ultimately include 10 office buildings (2 of which are renovations of existing buildings), 3 hotels, 3 restaurants, a theater, and a health club. At the time of this study, 3 of the office towers and one of the hotels were not yet built. The KCIN development is located in the heart of the Irvine Business Complex (IBC), a major industrial complex that includes more than 3,700 major companies. It is also located directly across the freeway from the John Wayne/Orange County Airport.

### B. Development Information

The Wells Fargo Tower, completed in 1990, was a speculative project built during one of the initial phases of the Koll Center Irvine North development. It was designed to attract professional firms, such as accountancy and law firms. Although it was known before the building was constructed that Wells Fargo bank would be the anchor tenant, Wells Fargo played no role in project design.

KCIN, which is part of the larger Koll Center Irvine project, is a joint-venture development. A partnership hold equity in the project; there is no permanent lender. The Koll Company manages the property on a fee management basis.

Previous uses on the KCIN site include low-density industrial and office space. A portion of

the overall site was occupied by the Armand Hammer Technical Center, of which just under 200,000 square feet were retained, including one 4 story and one 5 story office building. Another portion of the site included a 125,000 square foot development (35,000 square feet of office and 90,000 square feet of industrial space) belonging to Airco Cryogenics. All of the existing Airco uses have been removed.

C. Site Description

The Wells Fargo Tower and its parking structure are located on 2 acres. The building and parking structure are actually on two separate parcels. Adjacent uses include office buildings to the east and vacant parcels directly to the north and south. Future proposals for both parcels include office towers, with the southern parcel currently being used as surface parking for other uses at the site. The parking structure for the site is located to the west of the building, between the building and the San Diego (405) Freeway. A 100,000 square foot sports club is connected to the north wall of the parking structure, which it shares with the Wells Fargo Tower.

The Koll Center Irvine site features the use of pedestrian walkways connecting the different **uses,** a pedestrian plaza, grass terraces and expansive water features with fountains.

The KCIN site is bordered by Main Street, Von Karman Avenue, MacArthur Boulevard and the San Diego (405) Freeway. Access to the site is provided by the San Diego (405) freeway, at a distance of 0.5 miles via Macarthur Boulevard, the Costa Mesa Freeway (55), at a distance of 2.5 miles via Macarthur Boulevard, and the Santa Ana Freeway (5), at a distance of 6 miles via Culver Drive.

Access to the site is also provided by OCTA. Four bus lines serve the perimeter of the site at 30 minute peak headways.

D. Building Description

The Wells Fargo Tower is an upscale corporate-style building with a granite and glass facade.

TABLE 1: WELLS FARGO TOWER BUILDING DESCRIPTION

| | |
|---|---|
| Number of Stories | 16 |
| Gross Square Footage | 346,684 |
| Leasable Square Footage | 312,015 |
| Floor Area Ratio | 3.0 |
| Building Coverage | 14% |

E. Building Occupancy

As of June 1992, the building was 84.6 percent occupied (293,318 gross square feet), with 38 tenants and approximately 1,500 employees. The anchor tenant is Wells Fargo Bank, which occupies 72,000 square feet, or just over 3 floors of the building. Wells Fargo maintains a retail banking office on 7,000 square feet of the 1st floor. Other tenants include law firms, financial organizations, insurance companies, a gas and electric company, and other professional firms.

III. Parking Analysis

A. City Parking Requirements

As stated in Section V.E.-403.3 A of the City of Irvine Zoning Ordinance, the off-street parking requirements are as follows: Administrative, business and professional offices: 1 space per 250 square feet of gross floor area. For on-site facilities containing 1,000 or more parking spaces, the parking requirement is 1 space per 500 square feet of gross floor area for parking spaces required in excess of 1,000. Ten percent of the spaces must be designated for use by Carpools, and these spaces be located as close as is practical to the entrances of buildings to encourage carpooling.

The city allows increases and decreases in parking requirements, based on certain circumstances and findings. Shared parking is permitted, based on certain requirements. The number of required parking spaces may be decreased by up to 20 percent subject to the approval of a Transportation Management Plan supplied by the applicant. Also, the parking schedules are formulated assuming an average percentage of gross leasable building area to total gross building area (approximately 85 percent), but if buildings have a much lower leasable building area, the applicant can apply for reduced parking as long the same leasable square footage is constantly maintained. There is no on-street parking available in the vicinity of the site.

B. Parking Supply

Based on the city's requirements, as discussed above in Section III A, the parking requirement for the Wells Fargo Tower building would be 1,194 spaces, with 250,000 square feet of the tower calculated at the requirement of 1 space per 250 square feet, and 96,684 square feet calculated at the requirement of 1 space per 500 square feet.

Based on a parking study, which concluded that the overall KCIN site is a mixed-use/multi use site which takes advantage of shared parking parameters and thus maximizes parking usage and efficiency, the Koll Company requested to provide for the calculated peak demand use Urban Land Institute (ULI) shared parking factors, plus a 20 percent "safety factor" for each stage of development (except stages III and IV, where a 9 percent safety factor is met). The parking study concluded that this would provide more than a sufficient number of parking stalls for the KCIN site.

In October 1989, the City of Irvine approved the Koll Company's request for administrative relief from the parking ordinance, based on shared use parking. The city reserved the right to rescind the Administrative Relief, should it be determined in the future that the additional required spaces were needed. Another condition of approval was that all parking areas within the KCIN site had to be available for shared use by all users. None of the parking may be restricted for an individual land use.

The actual number of spaces currently provided in the parking structure is 1,318. Only the first section of the parking structure has been constructed. During later development stages, 3 more office towers will be constructed and the parking structure will be extended to accommodate the additional parking demand. According to Scott Barnard of the Koll Company, the current parking structure (Phase I) was sized to accommodate the Wells Fargo Tower and the sports club. The way the structure was built, it is slightly larger (approximately 10 percent) than required because parking structures must be built one bay at a time. This allows the Koll Company to provide parking for existing buildings and also for the construction vehicles that will be on site for the next stages of development.

Table 2 shows information about parking supply for the Wells Fargo Tower portion of the parking structure.

TABLE 2: PARKING SUPPLY FOR WELLS FARGO TOWER

| TYPE OF PARKING SPACE | AMOUNT PROVIDED |
|---|---|
| Non-Restricted | 1.005 |
| Handicapped | 14 |
| Reserved | 72 |
| Carpool/Vanpool | 101 |
| Delivery/Loading | 2 |
| TOTAL AMOUNT PROVIDED | 1,194' |
| AMOUNT REQUIRED BY CITY | 1,194 |

'A total of 1318 spaces exist in the structure--the other spaces are for the sports club and future phases.

C. Commuter Mode Choice

The anchor tenant, Wells Fargo Bank, has 200 employees at the site and is subject to the Regulation XV. When the mode choice survey was conducted in 1991, Wells Fargo had approximately 15 percent less employees than when this study was conducted. Of those answering the survey, 91 percent reported that they drove alone to work, 8 percent commuted in a 2 or more person Carpool, and the remaining 1 percent telecommuted. Wells Fargo workers park free at the site.

Mode choice data for other tenants in the building was not available. However, based on observations made during the parking utilization study and interviews with a randomly selected smaller tenant and the parking operator, the private automobile appears to be the preferred mode among all tenants in the building.

D. Parking Occupancy/Utilization

A parking utilization study was conducted for the Wells Fargo Tower parking structure on July 2, 1992.

TABLE 3: RESULTS OF PARKING UTILIZATION STUDY - THE WELLS FARGO TOWER

| | | |
|---|---|---|
| Time of Peak Utilization | | 10:00 am to 10:30 am |
| Employee Density (Emp.1,000 occupied **gla)** | | 4.4 |
| Spaces Demanded Per Employee | | 0.59 |
| Current Occupancy | | 84.6% |
| Parking Utilization | % Util. | 57.3% |
| | % Util. | 64.0% |
| | /1,000 gfa | 2.3 |
| Level of Visitor Parking | | Medium (with bank customers) |

E. Parking Agreements/Tenant Parking

Tenants negotiate the number of parking spaces they will be allocated at the time the lease agreement is signed and this number is relatively flexible, with the maximum spaces a tenant can lease being 4 spaces per 1,000 square feet of leased space. The larger tenants, in some cases, may be granted more spaces if needed.

Employees may park anywhere in the unreserved spaces, or in reserved spaces, as permitted. Visitor parking is not marked, and so visitors must park in available unreserved spaces which are usually those on the higher levels of the structure. The parking structure is shared with the adjacent sports club. Sports club members have the option of parking in the unreserved structure spaces or using the club's private valet parking service (not in the structure). According to Parking Operator Joe Trgo, the sports club members are only permitted to use 250 spaces in the structure at any given time, with no restrictions. At one time this was monitored and it was found that the club did not come close to this limit. They have the option of requesting more spaces if needed in the future.

F. Parking Economics

TABLE 4: ECONOMIC COST OF BUILDING AND OPERATING PARKING (MONTHLY PER SPACE) - THE WELLS FARGO TOWER

| | | |
|---|---|---|
| CAPITAL COST | Land Value/Sq. Ft. | $20.00 |
| | Land Area/Space (Sq. Ft.) | x 46.4 |
| | Land Cost/Space | = $928 |
| | Construction Cost/Space | + $8,000 |
| | TOTAL | $8,928 |
| | AMORTIZED AT 8.5% INTEREST RATE | $69.22 |
| OPERATING COST | Structure with attendant and card key entrance | $8.15 |
| TOTAL | | = $77.37 |

The parking costs calculated are relatively modest for parking structures. Land costs were kept low by using a 7 level structure, and an efficient parking structure was designed.

Parking costs are a separate item in the leases, and each tenant negotiates its own parking agreement/terms with the Koll Company. Scott Barnard of the Koll Company said that at this time, Koll receives no parking income on a 3-year lease, on a 5-year lease they receive parking income for the last year, and on a lo-year lease they receive parking income for the last 5 years. In the current office market, it is difficult to get any parking income. There is so much office space currently available that most building owners/developers find that they have to provide parking free of charge or for a minimal charge.

Parking Operator Joe Trgo said that the parking prices vary a lot, depending on the lease agreement negotiated by each tenant. The following figures indicate the general range of price for different types of spaces:

- Unreserved/random parking - $25.00 - $50.00 per month
- Reserved parking - $75.00 - $110.00 per month

The anchor tenant, Wells Fargo Bank, currently has free parking and will not begin to pay until the beginning of the 6th year of their lease. At this time, they will be charged $40 per month for each reserved parking space. Employees do not currently pay for parking, and it is not expected that they will in the future.

Another tenant, an insurance brokerage, said that it currently does not pay for unreserved parking, but at the 41st month of the lease, it will begin paying $50 per space **per** month.

The company said it will never pass these charges on to its employees.

Joe Trgo indicated that he is aware of three tenants who do not supply or subsidize parking for their employees. These are usually the independent contractor tenants, such as insurance and mortgage sales representatives and attorneys. In these cases, Ampco bills the individuals directly.

G. Parking Management

The parking is managed and operated by Ampco Parking. The Koll Company pays the entire operating costs, including salaries, and then pays Ampco an additional management fee. Ampco is very customer service oriented, providing its parking clients with services such as free window washing, notices on automobiles regarding flat tires, missing lights, etc., free coffee, and well-trained attendants.

According to Joe Trgo, there are a number of parking management problems, including illegal parking in reserved spaces and carpool spaces, long-term storage of automobiles in the structure, and criminal activity. Some of the problems stem from the fact that the parking is only controlled from 7:00 am to 6:00 pm. At other times, people can come and go as they please. As a result, some tenants have taken advantage of this by asking their employees to arrive before 7:00 am or to leave after 6:00 pm so that they do not have to pay for parking.

Iv. Attitudes About Parking

A. Public Sector

Local Government

See discussion for the Toshiba case study.

B. Private Sector

Building Owner/Developer

Scott Barnard of the Koll Company said that developers' standard for parking is usually 4 spaces per 1,000 square feet. He indicated that this is what lenders insist that developers provide. However, as projects get larger in size, developers can usually show lenders that parking spaces can be shared between uses with different peak parking periods (especially mixed use projects), and therefore the total amount of parking provided can be reduced. Lenders are becoming more open to such ideas. This tends to give developers more flexibility. As a rule, though, developers do not provide parking below that which is required by the city.

Mr. Barnard said that one of the major influences on parking supply is the market. Parking access and availability are very important in marketing a project. He said that if they are

building a project in a city with low parking requirements, they will build parking to meet the market demand, rather than the city requirements. Basically, they try to build as little parking as possible, based on the market demand. On the other hand, in a city with high parking requirements, they would like to apply for parking variances, but rarely do. Cities often try to get exactions for parking reductions, which end up costing developers too much in the long run. As an example, he said that one city they were involved with requires a $3,000 exaction fee per space reduced (based on a per space value of $5,000), and this exaction fee is used to fund transit. Instead of paying the exaction fee, the developer would rather just build the parking and in this way have something to show for the money invested. He said that generally a variance process is difficult and time consuming. In most cases, it is not worth it.

When asked whether he felt that city and lender requirements result in adequate parking, Mr. Barnard said yes, but that in some cases the parking is more than adequate (i.e. oversupplied). He felt that in 2 or 3 story office buildings, the parking requirements are usually "right on the mark." As a development reaches one million square feet, however, the parking requirements start to become to high, resulting in over-parked projects. He said that in some of their projects, parking spaces near the top of parking structures have never been used.

He felt that cities' require the amount of parking they do because they fear the consequences of overspill parking. Also, there is the problem of inertia -- cities base their requirements on past experience. In the end, he said that it is cities and not lenders that are the problem, because lenders look at parking reductions as a revenue source. Cities have conflicting goals: they want to encourage ridesharing, yet they make it very difficult to reduce parking.

Mr. Barnard felt that one of the major problems associated with undersupplying parking is that the marketability of the project is negatively affected. He said that this problem could be easily overcome in Irvine because there is already so much parking available. If a project is short of parking for some reason, it can develop an agreement with a neighboring site to share parking. He said that the Koll Company negotiated such a deal in one area where a Koll project was near an educational institution that needed additional parking spaces in the evening. On the other hand, he felt that in a project that is over-parked, the developer has a lot to lose because it has to pay interest on loans used to build to parking and it has equity in parking that produces no income. Also, the developer must pay taxes and insurance on the parking area, when it is contributing nothing to the site and bringing in no income. Generally, it affects the financial performance of the building. He felt that in a broader sense it also encourages people to drive and discourages ridesharing.

Lender

According to Scott Barnard of the Koll Company, there is no permanent lender. The equity for the project was been provided by a pension fund from the State of Connecticut, the Koll Company, Columbia Savings and Lean, and Wells Fargo.

Lease Agent

Leasing of office space **is** handled in-house by the Koll Company. The lease agent for the Wells Fargo Tower, John Weiner, said that parking supply and pricing are both very important factors in attracting tenants to a site. The issues tenants are most concerned about regarding parking are adequacy and proximity. Parking may be adequate, but if it is not convenient then it becomes a problem. This is especially true in structure parking. Some new tenants who have never parked in structures before may perceive it to be inconvenient.

Mr. Weiner said that an undersupply of parking makes it very difficult to lease the building. It can also present a problem with existing tenants who will not want to renew their leases if parking is short. In today's market, tenant retention is vital. From his point of view, parking that is oversupplied presents no problems.

He felt that parking for the Wells Fargo Tower was adequate and would continue to be adequate as occupancy reached its maximum. It is not currently under or oversupplied.

Parking Onerator

Joe Trgo of Ampco, the current parking operator for the site, said that parking is within the top 3 to 5 concerns of tenants. For the Wells Fargo Tower, parking is an important factor in the lease because the parking structure is shared with the adjacent sports club. Although he felt that parking supply was adequate at this time, as the building reaches full occupancy and there are more cars parking, potential tenants will begin to look at parking as a possible problem. They are concerned about parking availability if the sports club should ever have a big activity during normal work hours.

In a discussion of operating cost for parking, Mr. Trgo said that the parking structure is currently being operated at a loss of about $67,000 annually. He explained that in order to lease the building, the Koll Company has to use free parking as a lease concession. Due to the glut of office space, there is a lot of competition in the market. Tenants can "call their own numbers" now in their leases and free parking is an important amenity.

The original parking operator for the site was Central Parking System. Jerry Skillette of Central Parking System said that his company was involved in the project development process and worked in conjunction with International Parking Design to determine the number of spaces that should be built (all within city codes) and how the structure should be designed.

In a discussion about parking supply and demand, Mr. Skillette said that in today's market, it is tenants that are driving the parking supply and demand. Tenants have their choice of office space and they will lease space in the office development which can guarantee them the most parking. Because there are so few tenants and so much office space, developers/building owners are giving away parking for free most of the time.

He indicated that the city's goal in setting parking requirements was to ensure that parking is adequate and that there will never be a shortage. He said that lenders can also play a role in affecting parking supply. Lenders' standards are generally around 4 spaces per 1,000 square feet, and they will look at a project's competition to determine what parking supply should be. They will not finance a project that is not competitive.

Mr. Skillette said that when his company was involved with the KCIN site, they conducted a survey that looked at the utilization of parking spaces as compared to the number of spaces allocated tenants in their leases. What they found was that the actual usage is around 2.5 spaces per 1,000 square feet, whereas most projects like KCIN build around 4 spaces per 1,000 square feet. Central Parking System's long term goal in conducting this study was to produce an information base that would show developers and tenants how much parking is actually needed. He said that what frequently happens is that parking facilities are overbuilt, resulting in millions of dollars wasted on development costs. This has occurred at the KCIN site, where the roof levels of the parking structure have never even been used. There is an oversupply now, and as ridesharing gains momentum in the Irvine and Orange County areas, there will be an even greater oversupply as demand goes down.

C. Tenants

Two of the tenants in the Wells Fargo Tower were interviewed for their perceptions about parking. Wells Fargo was chosen purposefully for an interview because it is the anchor tenant with the largest amount of square footage in the building. The other tenant, Arthur Gallagher, was chosen randomly from among the 38 tenants in the building.

Sherril Meroney, the Employee Transportation Coordinator for Wells Fargo, said that parking was not one of the major issues in their decision to locate at this site. Wells Fargo is not currently using all of its entitled spaces, and does not expect to need more spaces in the near future. Parking is not a problem because the building is not fully leased and there are plenty of spaces available near the roof of the structure. Regulation XV has not affected their parking pricing policies. They have instituted employee incentives to ridesharing, such as providing convenient parking for rideshare vehicles. Overall, she felt that parking for the site was more than adequate.

The other tenant interviewed was a small insurance brokerage with 21 employees. Erin Kubiak of Arthur Gallagher said that parking was a very minor consideration in her company's decision to locate at the site. Their only concern with parking was that it be adequate to serve the needs of their employees. She felt that parking for the site was adequate, and said that her company has not experienced any problems with parking to date.

When asked how important free parking was as an employee benefit, Ms. Kubiak said that it is very important and very valuable. It benefits both the company and the employee to have the company pay for parking. She felt that if employees had to pay for parking, the company would have to increase salaries to accommodate for this, and it would end up costing the company more in the long run.

# LIST OF INTERVIEWS

The following is a list of those interviewed for this study. All those interviewed from Building A (Brea) and Building B (Costa Mesa) who are directly associated with the project are not listed because one party in each of those case studies requested anonymity.

Mr. John Atwater, City of Upland
Mr. Ronald Barbieri, KMPG Peat Marwick
Mr. Scott Barnard, Koll Company
Mr. Kondradt Bartlam, City of Brea
Ms. Willa Bouwens-Killeen, City of Costa Mesa
Mr. Robert Brady, City of Cerritos
Mr. James Brisbane, Wells Fargo Bank
Ms. Lisa Burke, Orange County Transportation Authority
Mr. Chuck Covarrubias, Alert Management
Ms. Valerie Darbouz, Riverside Transit Agency
Mr. Chris Day, Tishman West Companies
Ms. Susan Dell, Partnership Asset Management Company
Ms. Teresita Dillon, City of Cerritos
Mr. David Downs, Downs Electric
Mr. Larry Friedman, Neighborhood Planning, City of Los Angeles
Mr. Paul Goldberg, Systemhouse
Mr. Tim Grant, CB Commercial
Mr. Ronald Gray, West Trend Development
Mr. Jeff Gunn, 20th Century Insurance
Mr. John Harris, City of Irvine
Mr. Bernie Hays, Toshiba
Mr. Erin Kubiak, Arthur Gallagher
Ms. Jennifer Laurie, Coast Federal Bank
Mr. Robert Lea, Lea and Associates, Inc.
Mr. Kevin LoPiccolo City of Oxnard
Ms. Danna Mace, Farmers Insurance
Mr. William Manis Cerritos Redevelopment Agency
Mr. Robert Maher Woodman of the World
Mr. Steve McCaughley, Spectrum Motion TMA
Ms. Sherril Meroney, Wells Fargo Bank
Mr. John Meyer, City of Temecula
Mr. Dennis Morris, Parking Concepts
Mr. Lloyd Nikaido, Kajima International, Inc.
Mr. Chris Park, Warner Center TMA
Mr. Steven Philips, Transpacific Development Company
Mr. Douglas Reilly, City of Irvine
Mr. Mark Rhoades, City of Temecula
Mr. Lonnie Riddle, Grubb and Ellis
Mr. Robert Schafhausen, Transpacific Development Company

Mr. Jerry Skillette, Central Parking System
Mr. Gary Spore, Koll Company
Mr. Dick Stillwell, Long Beach Transit
Mr. Joe Stitick, Investment Property Service
Ms. Maggie Stewart, Rancon Real Estate
Mr. Craig Stoddard, CA Stoddard and Associates
Mr. Larry Storaasli, Rancon Financial
Mr. Dennis Tagashiro, City of Oxnard
Mr. Joe Tgro, Ampco Parking
Mr. Ike Ubaka, Southern California Association of Governments
Ms. Lorraine Valencia, Toshiba
Ms. Susan Wallace, Advo Systems, Inc.
Mr. John Weiner, Koll Company
Mr. David Wilcox, Economic Research Associates, Inc.
Mr. Robert Williams, Irvine Company
Ms. Marty Young, National American Life Insurance

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