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Parking Alternatives:

Making Way for Urban Infill and Brownfield Redevelopment

Introduction

Throughout the country, sprawl development is consuming open space in outlying metropolitan areas and increasing automobile dependency. This trend is resulting in destruction of natural habitat, air and water pollution, excessive public and private expenditures on infrastructure expansion, increased transportation and travel costs, and shifts in jobs out of cities. Simultaneously, abandoned properties in once thriving urban areas are left behind with an underutilized public infrastructure, thus feeding the cycle of disinvestment in urban areas. There are many interrelated factors influencing this trend, not the least of which are the cost and ease of development. As the populace becomes increasingly dependent on automobiles, providing parking in urban areas has become a significant expense and deterrent to infill and brownfield redevelopment—development intended to reduce suburban sprawl and protect the environment by encouraging developers to invest within existing urban infrastructures. Providing parking in outlying greenfield areas is less burdensome because of the availability of land for low cost parking facilities.

In many instances, efforts to accommodate parking for motor vehicles have overextended actual need. An important case in point, and a focus of this guide, is the approach used by many cities to establish vehicular parking requirements—typically a generic formula based on satisfying maximum demand for free parking. Although this practice may allow city planners to err on the side of caution, it has some serious drawbacks.

In practical terms, this practice increases the cost of development and creates disincentives with respect to infill and brownfields redevelopment. In addition, generic parking requirements create excess parking spaces that consume land and resources, encourage automobile use and associated pollution, and degrade water quality. The oversupply of parking is of particular concern for infill and brownfields redevelopment because these sites are often located in urban areas where the existing parking infrastructure can be better utilized and parking alternatives, such as increased use of transit and pedestrian modes, can be more readily implemented.

With urban revitalization efforts underway in many cities, the timing is opportune for instituting changes in parking requirements and transportation behavior. An important way to reduce the demand for parking and the need to supply parking to meet maximum demand is to shift transportation behaviors in the direction of nonauto modes. This can be achieved by reducing the availability of parking in areas where alternative modes of transportation exist and by providing incentives for using alternative modes. Such changes will encourage infill redevelopment and reduce vehicle miles traveled, mobile source emissions and congestion. They will also increase

ridership for public transit and, in turn, provide the additional revenues needed to support public transit improvements.

There are, of course, potential drawbacks to reducing the supply of parking. Lenders, for example, may be unwilling to approve loans because plans do not meet their minimum parking requirements; developers may be concerned about the long-term marketability of their property; and residents may fear that parking will spill over into surrounding residential neighborhoods. Such concerns can be more readily addressed if: the factors that affect parking demand are understood; walkable, pedestrian-oriented development design is implemented; and viable nonauto transit alternatives exist where needed. Concerns are also alleviated when developers, employers, and employees are aware of public programs that promote the use of nonauto transit through financial incentives. The Transportation Equity Act for the 21st Century (TEA-21), for example, allows businesses to give their employees up to $65 per month in tax free transit subsidies. TEA-21 also allows employees who commute by public transit or vanpool to deduct the cost of commuting from their taxable income if they do not receive a subsidy.

This guide is intended to further the readers knowledge and understanding of these issues. It was developed to accomplish the following objectives:

- Alert readers to the significance of the urban parking issue, addressing the perspectives of both city planners and developers;
- Illustrate the environmental, financial, and social implications of providing an over-supply of parking; and
- Describe cost-effective, environmentally sensitive alternatives to generic parking requirements, providing case study examples of successful commercial real estate development in areas that have implemented parking alternatives.

The focus of this guide is on commercial parking, and the audience is primarily local government officials and city planners, as well as developers, any of whom can initiate changes to generic parking requirements. It is

What is urban infill?

Urban infill is the practice of developing vacant or underutilized properties within an urban area rather than undeveloped land in more rural areas (greenfields). Infill helps to prevent sprawl and can aid in economic revitalization.

What is a brownfield?

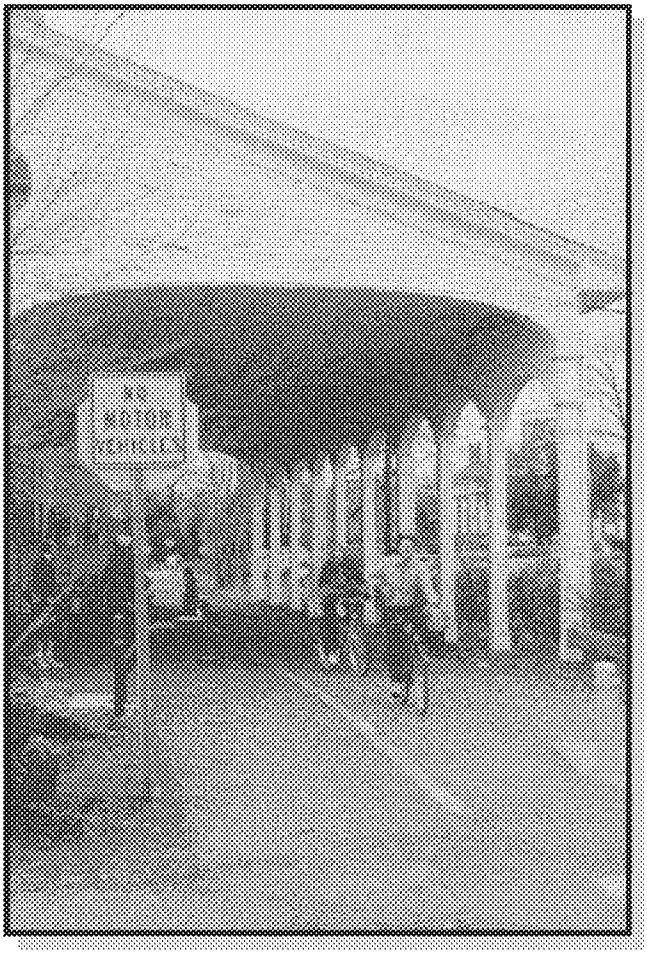
A brownfield is an abandoned, idled, or underused industrial or commercial site where redevelopment or expansion is complicated by real or perceived environmental contamination.

essential, however, that these groups work together to implement such changes.

Intrinsic to this guide is the concern that generic parking requirements can be a disincentive to infill and brownfields redevelopment and associated urban economic development. With this issue as its focus, the guide is intended to stimulate consideration of parking alternatives, and provide the information needed to explore the viability and effectiveness of alternatives.

The guide is organized into five main sections:

- **Establishing parking requirements.** Explains how generic parking requirements are typically established and highlights the key issues city planners face in tailoring parking requirements.
- **Cost of providing parking.** Explores the factors that influence the cost of constructing, operating, and maintaining parking facilities of all types, from surface lots to structured garages.
- **Parking requirements and development decisions.** Describes the relationship between parking requirements and development decisions, focusing on the development costs and returns.
- **Innovative parking alternatives.** Describes alternatives to generic parking requirements, including:
  - alternatives that enable redevelopment projects to better utilize existing parking (e.g., in-lieu parking fees to cover costs of city garages, shared parking arrangements when users park at different times of the day, shuttle buses from centralized parking facilities); and
  - alternatives designed to reduce the demand for parking by providing incentives for nonauto modes of transportation (e.g., public transit subsidies, "cash-out" programs, trip reduction programs, bicycle amenities).
- **Case studies of innovative parking requirements.** Presents three case studies of development projects located in metropolitan areas that have benefited from innovative parking alternatives. These case studies present the cost savings associated with parking alternatives, as well as the broader economic, environmental, and social effects of these changes.



In addition, an appendix provides examples of innovative parking ordinances and programs.

Beyond Generic Parking Requirements

In setting parking requirements, planners typically use generic standards that apply to general land use categories (e.g., residential, office, retail). Such standards are provided in publications of the Institute of Transportation Engineers (ITE), or they are based on other cities' ordinances (Shoup 1998). One of the shortcomings of generic parking requirements is that they often do not take into account the mix of community-specific variables—density, demographics, availability of nonauto transit, or the surrounding land-use mix—all of which influence demand for parking and *should* be reflected in parking requirements. Instead, requirements are based on maximum demand for parking, when parking is provided at no charge to users. This formula yields a surplus of parking area that is costly for developers to provide, and it subsidizes personal automobile use and encourages auto use even in areas where convenient alternative modes of transportation exist.

Because of the way in which they are typically established, parking requirements are remarkably consistent across different cities, despite varying levels of economic vitality, population size, and development density. The sampling of data in the table on page 5 also shows that the requirements assume that every household has two cars, every employee drives to work, and every party visiting a restaurant travels by car.

"Most planners surveyed relied on neighboring cities and national handbooks to determine parking requirements. This practice may result in inappropriate requirements if local conditions or policy approaches differ."
– Michael Kodama, Michael R. Kodama Planning Associates

Alternatively, parking requirements can be established using methods that are better tailored to specific development projects. This approach entails careful consideration of the following land use characteristics that relate to parking demand:

- **Building/development type and size.** Takes into account the specific characteristics of the project. Parking demand is influenced by the size of the development (typically measured by total building square footage), as well as the type of land use (e.g., retail, industrial). Generic parking formulas address these factors to some extent.
- **Population and development density.** Considers the density and demographic characteristics of the people using the building, including employees, customers, residents, and visitors. Information on income, car ownership, and age distribution also helps in projecting total parking demand.
- **Availability of nonauto modes of transportation.** Takes into account the modes of transportation available to employees, visitors, and residents. Proximity of public transportation to a particular development, for example, will reduce parking demand. Walkable neighborhoods and bicycle amenities will also reduce parking demand.

Examples of Minimum Parking Requirements[1]

Location	Residential	Office		Retail	Restaurant
	Single family	Spaces per 1,000 sq. ft.[2]	Number of Spaces per Employee[3]	Spaces per 1,000 sq. ft.[4]	With tables, no drive-thru
Bellevue, Washington Population (1996): 104,000 Area: 31 square miles (Off-Street Parking Requirements)	2 spaces per residential unit	4 spaces (net)	1.33	1 space (net) (for retail space < 15,000 sq. ft.)	14 spaces / 1,000 sq. ft. (net)
Saint Louis County, Missouri Population (1996): 1,005,094 Area: 506 square miles (Off-Street Parking Requirements)	1 space per residential unit - urban district 2 spaces per residential unit - non-urban districts	3.3 spaces (gross)	1.1	5.5 spaces (gross)	1 space / 3 seats + 2 spaces / 3 employees
Bozeman, Montana Population (1996): 26,760 Area: Approximately 11.5 square miles (Bozeman Planning Office)	2 spaces per residential unit (if on-street parking available) 3 spaces per residential unit (if no on-street parking available)	4 spaces (gross)	1.33	4 spaces	20 spaces / 1,000 sq. ft. (net)
Fairfax County, Virginia Population (1996): 880,771 Area: 399 square miles (Fairfax County Department of Planning and Zoning)	2 spaces per residential unit	3.6 spaces (gross)	1.2	5 spaces (net) (for retail space <1,000 sq. ft) 6 spaces (net) (for retail between 1,000 and 5,000 sq. ft)	1 space / 4 seats + 1 space / 2 employees
Houston, Texas Population (1996): 1,629,902 Area: 556 square miles (Houston City Planning Department)	2 spaces per residential unit	2.5 spaces (gross)	0.83	4 spaces (gross)	8 spaces / 1,000 sq. ft. (gross)

1 "Gross" values represent number of spaces per total area, whereas "net" excludes "unusable" space such as elevators, exterior walls and corridors. Where gross values are not available, we have presented net values.

2 Parking requirements for office space less than 50,000 sq. ft.

3 The number of spaces per 1,000 square feet was converted into spaces per employee using an average number of 3 employees per 1,000 square feet of office space (Burchell *et al.* 1994).

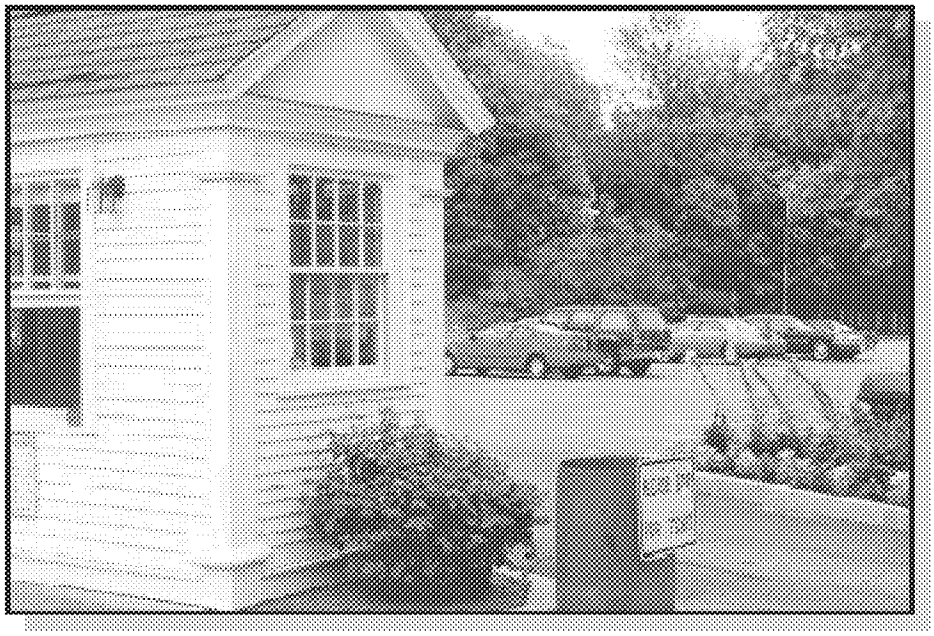
4 Parking requirements for retail space less than 5,000 sq. ft.

"In the process of establishing parking requirements, local communities are sometimes engaged in a balancing act. They must consider access, mobility, and traffic safety, but they also must encourage appropriate land use and traffic management, environmental protection, and energy and resource conservation."

– Thomas P. Smith

- **Surrounding land use mix.** Considers the surrounding land uses and density to better understand parking needs, and evaluates whether overall peak demand is lower than the sum of peak demands for different uses. This concept takes the timing of parking demand into account in determining the aggregate demand of multiple uses. The type of community in which a development is located will also affect parking demand. For example, if a development project is located in a city's central business district, the availability of general use parking will reduce on-site parking demand. On the other hand, if the development is located in a residential area, on-street parking may be unacceptable to local residents, increasing the need for off-street parking at the development.

Land use and demographic information are important tools for establishing project-specific parking requirements that create a better match of supply and demand for parking than do many generic requirements. Moreover, adjusting parking requirements downward to reflect realistic demand helps reduce the total cost of development, particularly in urban areas. By reducing cost, a potential deterrent to urban infill and brownfields redevelopment can be removed.



The Costs of Parking

The cost of providing parking is driven by three key factors: the number of parking spaces required, the opportunity cost of the land used for parking, and the cost per parking space. The more parking spaces required, the higher the cost of parking. Generic parking standards tend to require a greater number of spaces and, thereby, increase total development costs. The opportunity cost of land used for parking is also linked directly to the number of required spaces—land that might otherwise be used to generate revenue is consigned to parking use.

The cost per space, on the other hand, depends on engineering and design considerations. Although cost per space is not directly influenced by local government policies and practices, it will vary for urban, suburban, and rural areas based on factors such as design constraints and land costs. Cost per parking space includes land, construction, maintenance, utilities, insurance, administrative, and operation costs (Siegman 1993).

Land and construction costs, which account for most of the costs of parking, vary considerably across cities and parking designs. For example, the reported average land and construction cost for ten parking facilities in northeastern Illinois (three garages and seven surface lots) is $4,450 per space (Fish & Associates, Inc., 1998); the cost reported for surface parking in Lake Forest, Illinois is $18,000 per space (Shoup 1998). Construction costs are typically higher for parking structures than for surface parking lots. For example, Shoup (1998) reports construction costs of $21,831 per space for a structured garage in Walnut Creek, California.

Willson (1995) expresses parking costs in terms of a monthly amount that would pay for the land, construction, and operating costs of providing a parking space.[1] The reported average monthly cost calculated for six surface parking sites in Southern California was $48 per space; among the six sites, the monthly cost ranged from $28 to $61. The average cost for two sites in Southern California with aboveground structured parking was $97 per space per month.

In general, the following factors affect the cost of parking:

- **Structured versus surface parking.** Structured parking is more costly to construct, operate, and maintain than surface parking. Underground parking structures are more costly to construct than aboveground structures because of the added expense of excavation, fireproofing, ventilation, and dewatering (Shoup 1997b). In

"Ignoring both the cost of providing parking spaces and the price charged for parking in them, urban planners thus set minimum parking requirements to satisfy maximum parking demand."

– Donald Shoup, Institute of Transportation Studies, University of California, Los Angeles

[1] The fee includes land and construction costs, amortized using a 7.5% interest rate over a 30-year period, and annual operating costs. Costs are in 1992 dollars.

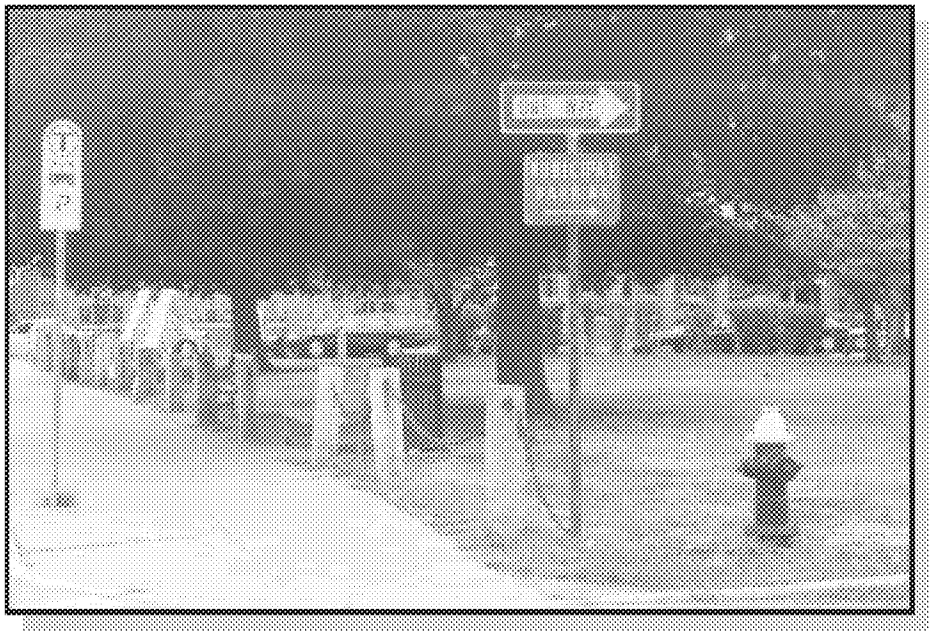
a study of UCLA's parking facilities, the cost per space in an aboveground structure was approximately $10,000 and for a comparable space in an underground structure, $25,000 (Shoup 1998). Because of the relative scarcity of land in urban areas, parking requirements that assume maximum demand may necessitate structured parking facilities for urban infill and brownfields redevelopment, increasing the cost of brownfields redevelopment in comparison to greenfields development.

- **Land cost.** Land costs vary widely across settings (urban/suburban), geographic areas, and location within a particular city. Land costs in urban centers are generally much higher than in suburban areas. For example, the cost per square foot of land in downtown Charlotte, North Carolina is $121, while in the suburbs, the cost per square foot is $21 (ULI 1997). Since most brownfields are located in urban areas, with higher land costs, the cost per parking space in brownfield areas is generally higher than in greenfield areas.

- **Configuration and size of parking facility.** Parking structures and lots are more expensive to build and operate on smaller lots and complex land configurations, due in part to economies of scale. For example, smaller garages have higher costs per parking space because of the fixed capital costs (e.g., stairwells, ramps, and elevators) and fixed operating costs. These characteristics—smaller lots and more complex land configurations—are typical of urban infill and brownfield areas, making parking more expensive at these locations than at greenfield sites.

- **Geologic conditions.** Parking structures on land with more sensitive seismic conditions or land with difficult terrain also cost more per parking space because they require more complex engineering and construction design. While geologic conditions vary across the country, developers have a greater choice of land options when considering development in suburban and rural areas. On the other hand, land options in urban areas are more limited, and terrain with geologic constraints may be more difficult to avoid.

All of the cost factors discussed above will have an important bearing on the financial feasibility of development options and, as such, will influence development decisions. On the whole, these factors suggest that the cost per parking space will be more expensive at urban brownfield sites than at greenfield sites. The next section explores in greater detail how the costs of parking— both the absolute costs and opportunity costs—factor into development decisions.



Parking Requirements and Development Decisions

The connections between parking requirements and development decisions are somewhat complex, but can be boiled down to two basic components:

- **Costs of providing parking, and**
- **Expected financial returns associated with availability of parking or other uses of the land.**

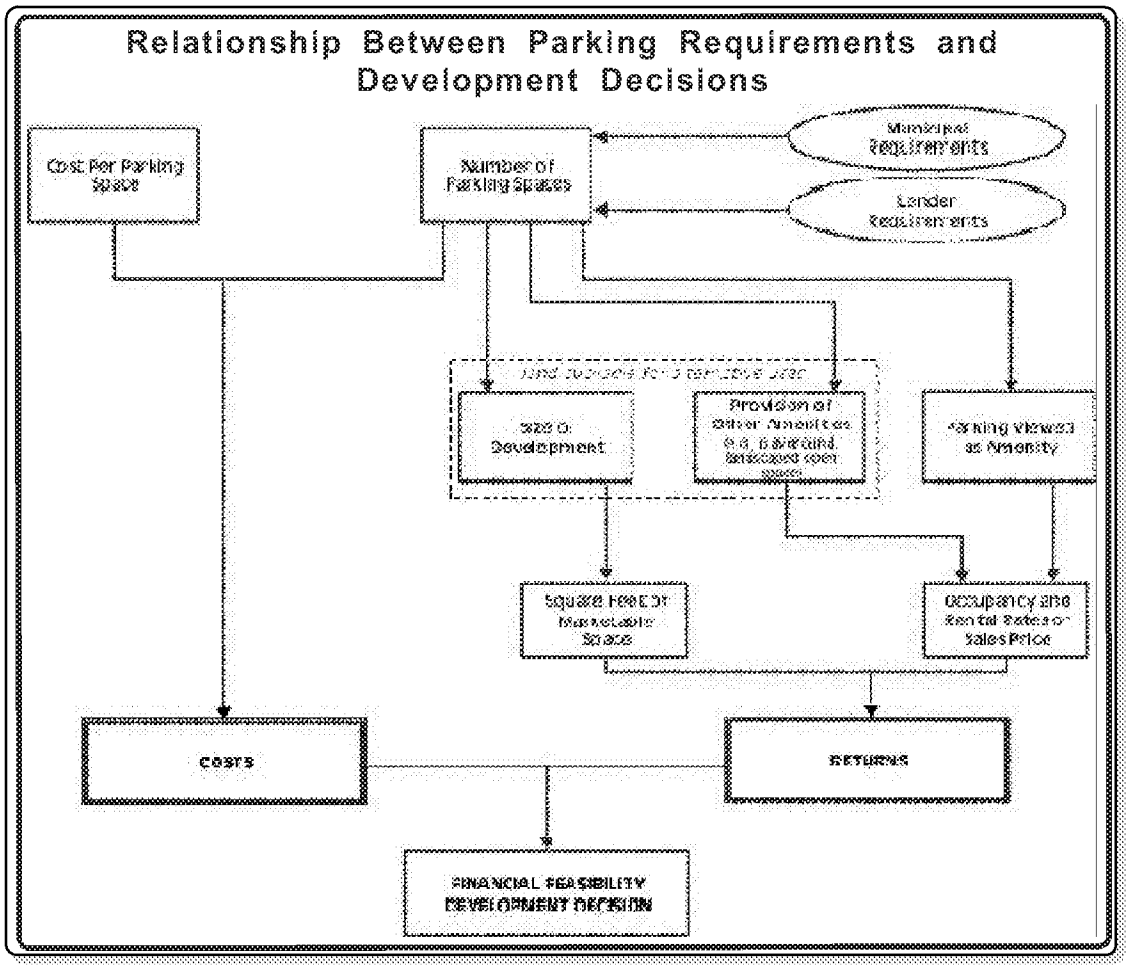
Both of these components influence the financial feasibility of development options and, therefore, development decisions.

The cost component relates directly to the total cost of development—the lower the number of required parking spaces and the cost of those spaces, the lower the project development costs. The cost elements listed in the previous section suggest that the cost per parking space is more expensive at small sites with complex land configurations (which may necessitate building expensive structured garages) and at sites with high land costs. Another condition that may influence the cost of redevelopment is the need to demolish existing buildings to free up land to accommodate parking. Since many urban infill and brownfield sites have these characteristics, parking costs can influence development decisions associated with these sites.

"Parking requirements hide the cost of parking by bundling it into higher housing prices, higher consumer prices, lower urban density, and lower land values. Everyone but the motorist pays for parking."
– Donald Shoup, Institute of Transportation Studies, University of California, Los Angeles

The financial returns related to parking are more complex than the cost component. As shown in the flow chart on the next page, financial returns are a product of the amount of marketable space, the occupancy rate, and the selling price/rental rate for that space. Because parking consumes land, if less parking is required, more land is available for alternative uses. If that available land is used to expand the marketable space and the market for the space is strong, then revenues generated by the sales of the property and/or tenant rent will increase. If the land is used to provide other amenities, such as landscaped open space, its value will increase (i.e., the development will be more desirable and command higher sales or rental rates). On the other hand, to the extent that extra parking is viewed as an amenity that will influence occupancy rates and sales or rental income, reduced parking may negatively affect project returns. The availability of reliable and convenient nonauto modes of transport reduces, and may eliminate, this potential negative effect.

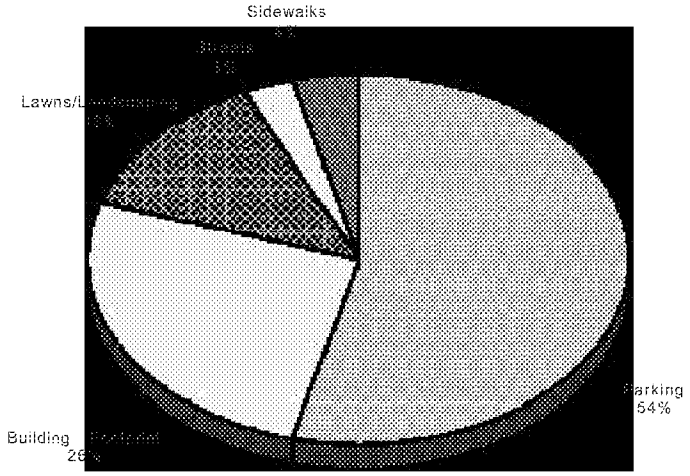
As shown in the flowchart, municipal and lender requirements are key determinants of the number of parking spaces provided at a given location; however, the number of spaces provided also depends on developer preferences, land costs, tenant preferences, and the practices of competing de-



velopment. Strong municipal leadership is especially important with regard to promoting parking alternatives at the local level; high marketability and financial returns are more likely when municipal leaders demonstrate a serious commitment to enabling worthwhile infill and brownfield projects. From the lender perspective, parking requirements can improve lenders' ability to sell the mortgage in the secondary market should the project fail, as secondary mortgage buyers can fear unfamiliar property management requirements associated with "atypical" development.

Fearing that properties will not be marketable without ample parking, lenders often establish their own minimum parking requirements as part of their loan approval processes. Developers and planners need to work with lending institutions to demonstrate that innovative parking alternatives can be employed to reduce the need for parking while maintaining high marketability and projected revenues. Also, developers should search out local banks that have a good understanding of the city and its alternative transportation modes. Such lending establishments are more receptive to financing projects that employ creative alternatives to stringent parking requirements.

Site Coverage for Typical Commercial Development (averages for Olympia, Washington)



Source: City of Olympia Public Works Department, and the Washington State Department of Ecology, 1995.

Reductions in parking requirements can decrease development costs and potentially increase returns, particularly for infill and brownfields redevelopment. Innovative alternatives that allow for reductions in parking requirements can improve the financial feasibility of development and may also provide incentives for alternative, less polluting, modes of transportation and nonauto dependent development designs. The next section describes cost-effective, environmentally sensitive alternatives to generic parking requirements that have been successfully implemented at cities in various parts of the country.

Innovative Parking Alternatives

Some local governments have implemented alternatives to generic parking requirements that increase utilization of existing parking facilities, reduce the demand for parking, and/or create more cost-effective and environmentally sensitive parking structures that preserve pervious surfaces.[2] By lowering total development costs, some of these parking alternatives have consequently encouraged urban infill and brownfields redevelopment.

This section presents some of these alternatives and includes a discussion of how and why planners establish these alternatives, the advantages of the innovations, potential concerns of developers and planners, and examples of how the various alternatives have been implemented.

Implemented Alternatives

Parking Alternative	Location
In-Lieu Fees	Berkeley, California
	Coconut Grove, Florida
	Lake Forest, Illinois
	Long Beach, California
	Orlando, Florida
	Palo Alto, California
Shared Parking	Indianapolis, Indiana
	Montgomery County, Maryland
Centralized Parking	Chattanooga, Tennessee
	West Palm Beach, Florida
Maximum Limits	Portland, Oregon
	Redmond, Washington
	San Francisco, California
Parking Freezes	Boston, Massachusetts
Subsidies for Transit	Boulder, Colorado
	San Bernardino County, California
Cash Out Programs	Los Angeles, California
	Santa Monica, California
Transit Improvements	Portland, Oregon
	Chattanooga, Tennessee
Pedestrian and Bicycle Amenities	Schaumburg, Illinois
	Kendall, Florida
Vehicle Trip Reduction	Cambridge, Massachusetts
	Seattle, Washington
	Montgomery County, Maryland

In-Lieu Parking Fees

In-lieu parking fees are established by municipalities as an alternative to requiring on-site parking spaces. With in-lieu fees, developers are able to circumvent constructing parking on-site by paying the city a fee. The city, in return, provides centralized, off-site parking that is available for use by the development's tenants and visitors. The fees are determined by the city and are generally based on the cost of providing parking.

Cities set fees in one of two ways, either by calculating a flat fee for parking spaces not provided by a developer on-site or by establishing development-specific fees on a case-by-case basis. Shoup (1998) reports that in-lieu fees in the United States range from $5,850 to $20,180 per parking space. These fees can be imposed as a property tax surcharge.

In-lieu parking fees provide advantages to both planners and developers. Allowing developers to pay fees in-lieu of constructing parking has the following benefits:

[2] Preserving pervious surfaces helps to control nonpoint source runoff from developed sites. The pervious surfaces absorb rainfall and prevent polluted runoff.

In-Lieu Parking Fees
Coconut Grove — Miami, Florida

Coconut Grove is a pedestrian-oriented, entertainment, dining, and shopping village in southern Miami. In an effort to maintain Coconut Grove's continuous street frontage, city planners established flexible parking requirements. Developers or property owners have three choices for satisfying minimum parking requirements: they can provide off street parking, contract spaces elsewhere, or pay in-lieu fees. With little space left to develop and high land costs, most property owners choose to pay the $50 per space per month fee to the city and use the land for more productive, revenue-generating purposes. This in-lieu alternative allows the city to preserve a continuous storefront that maintains the aesthetic character of the area and improves walkability.

Source: Coconut Grove Chamber of Commerce.

- Overall construction costs may be reduced;
- Construction of awkward, unattractive on-site parking is avoided;
- Redevelopment projects involving historic buildings can avoid constructing parking that would compromise the character of the buildings;
- Planners can ensure that existing parking facilities will be more fully utilized; and
- Planners can encourage better urban design with continuous storefronts that are uninterrupted by parking lots.

In establishing in-lieu parking fees, planners must be cognizant of potential developers' concerns about the impact of a lack of on-site parking on the attractiveness of developments to tenants and visitors. This can be an issue if available public parking is insufficient, inconveniently located, or inefficiently operated. Planners must carefully consider the parking demand for each participating property and provide enough parking to meet this demand in order to avoid creating a perceived or real parking shortage. Planners must also work to ensure that public parking facilities are centrally located and operated efficiently.

Shared Parking

Different types of land uses attract customers, workers, and visitors during different times of the day. Shared parking is another alternative that city planners can employ when setting parking requirements in mixed-use areas. An office that has peak parking demand during the daytime hours, for example, can share the same pool of parking spaces with a restaurant whose demand peaks in the evening. This alternative also reduces overall development costs.

By allowing for and encouraging shared parking, planners can decrease the total number of spaces required for mixed-use developments or single-use developments in mixed-use areas. Developers benefit, not only from the decreased cost of development, but also from the "captive markets" stemming from mixed-use development. For example, office employees are a captive market for business lunches at restaurants in mixed-use developments.

Shared parking encourages use of large centralized parking facilities and discourages the development of many small facilities. This results in more efficient traffic flow because there are fewer curb cuts, and turning opportunities on main thoroughfares. This has the added benefits of reducing accidents and reducing emissions from idling vehicles stuck in traffic.

Establishing shared parking requirements involves site-specific assessment or use of time-of-day parking utilization curves.[3] Planners need to consider the following factors when developing shared parking requirements:

- Physical layout of the development;
- Number of spaces for each of the individual land uses;
- Types of parking users (e.g., employees, residents, or hotel guests who park all day or customers and visitors who park for short periods of time); and
- Hourly accumulation of parking for each land use.

Montgomery County, Maryland allows for shared parking to meet minimum parking requirements when any land or building under the same ownership or under a joint use agreement is used for two or more purposes. The county uses the following method to determine shared requirements for mixed-use developments:

- Determine the minimum amount of parking required for each land use as though it were a separate use, by time period, considering proximity to transit.[4]
- Calculate the total parking required across uses for each time period.
- Set the requirement at the maximum total across time periods.

[3] Time-of-day parking utilization curves developed for weekdays and weekends are provided in the 1983 ULI publication *Shared Parking* for office, regional retail, restaurant/lounge, cinema, hotel, and residential uses. Calthorpe Associates, an urban design, planning and architecture firm, reports that when sizing parking areas for mixed-use developments, they use these ULI figures and their developer clients accept the analyses (Rood, 1999).

[4] The minimum parking requirements in Montgomery County can be reduced for buildings located in close proximity to transit or within a central business district. Parking reductions are also possible at developments with owners who participate in transportation demand management programs. More information on Montgomery County's parking ordinance is provided in the Appendix.

Shared Parking: Planner and Developer Concerns

Planner Concerns

Q: What if the land uses change within the mixed-use development?

A: Any change in land uses within a mixed-use development requires a revised assessment of parking demand. It is possible for peak demand to increase with a change in land use. Thus, planners need to be receptive to improving transit or providing other incentives to encourage nonauto transport modes. Responding in this way avoids the need for developers to provide additional parking in the event of more intense land use changes. Of course, transit solutions are not always available and creating incentives for other alternatives will only capture a limited number of commuters. In such cases, contingencies for additional parking may be necessary to accommodate development mix changes. One alternative is to "land bank" a percentage of land for parking use, if needed at a later time. (Schaumburg, Illinois incorporates a land banking provision in its 1998 Parking Ordinance; see the Appendix to this guide for relevant excerpts from its ordinance.)

Developer Concerns

Q: Will a development with fewer parking spaces be less attractive to tenants or patrons?

A: If parking requirements based on sharing have been established correctly, available supply should accommodate parking demands, and marketability will not be affected.

Q: How can unauthorized use of spaces be prevented?

A: Shared parking facilities are more susceptible to encroachment of unauthorized vehicles than single-use parking facilities. To inhibit such encroachment, owners or operators of the parking facility may want to restrict access and/or use by charging fees, gating the parking area, or using vehicle stickers/permits or electronic access cards.

Q: How are maintenance costs shared?

A: There are various options for sharing maintenance costs, and they will depend on the particular development project. One approach might be to share maintenance costs by prorating the costs depending on parking use. For example, in the Montgomery County, Maryland example (see table on page 16), using peak parking demands for different uses, we calculate maintenance costs for each use: the office user would pay 44 percent; the retail user would pay 41 percent; and the entertainment user would pay 15 percent of the maintenance costs. If there is single ownership of mixed-use development, this issue is avoided entirely.

Shared Parking

Circle Centre — Indianapolis, Indiana

Opened in September of 1995, Circle Centre is Indianapolis' newest example of an Urban Retail/Entertainment (URE) development. Located in the central business district, this mixed-use development contains 630,600 square feet gross lease area (GLA) of retail space, 78,000 square feet GLA of restaurant space, a 2,700-seat cinema complex, and another 28,000 square feet GLA of specialty and entertainment space. The total cost of the development was $300 million, funded by the city, a consortium of 19 local corporations, and two international banks. One of the factors that led to a financially successful project was the conceptualization and implementation of a shared parking scheme that allowed for significant cost savings and a pedestrian-friendly urban design.

With generic minimum parking requirements, Circle Centre would have needed about 6,000 parking spaces. With shared parking taken into account, the project was built with only 2,815 spaces. Shared parking for Circle Centre includes two components. First, the mixed-use nature of the development project allows for customers to use a single parking space for multiple destinations. Second, because the project is located in the downtown area, employees can use nearby off-site parking, particularly in evenings and on weekends when more than 12,000 nearby off-site spaces become available to Circle Centre parkers. Taking these two shared parking components into account decreases the estimated demand for on-site parking by more than 50 percent.

This parking demand reduction translates into considerable cost savings. At parking costs of about $10,000 per space for aboveground structured parking, development costs were reduced by about $30 million. In addition, operating costs were reduced by approximately $1 million per year.

Source: Smith, 1996.

The table below illustrates how peak demand occurs at different times of the day and week for different land uses when the shared parking method is applied to a mixed-use development. While maximum parking demand for the office component of the project occurs during the daytime on weekdays, maximum demand for retail occurs during the daytime on weekends, and for entertainment during the evening.

For this example, setting parking requirements using maximum demand would have resulted in requiring 680 spaces (300 spaces for office, 280 spaces for retail, and 100 spaces for entertainment). By recognizing the shared parking potential, a reduction of almost 200 parking spaces (about 25 percent) was achieved—representing a considerable cost savings for the developer. In addition, shared parking also allows for more efficient use of land and better urban design.

An American Planning Association report, *Flexible Parking Requirements*, highlights factors that facilitate shared parking. The report suggests that for shared parking to function effectively, parking requirements for individual land uses must reflect peak demand land use and common parking facilities must be in close proximity to one another. Parking spaces should not be reserved for individuals or groups.

Calculating Parking for Mixed-Use Developments

(Montgomery County, Maryland)

	Weekday		Weekend		Nighttime
	Daytime (9 a.m. - 4 p.m.)	Evening (6 p.m. - 12 a.m.)	Daytime (9 a.m. - 4 p.m.)	Evening (6 p.m. - 12 a.m.)	(12 a.m. - 6 a.m.)
Office	300*	30	30	15	15
Retail	168	252	280*	196	14
Entertainment	40	100*	80	100*	10
TOTAL	**508**	382	390	311	39

* Peak demand by use.

Source: Smith 1983, page 7.

Centralized Parking

Centralized parking facilities can reduce the costs of parking because large facilities are less expensive on a per space basis to build and maintain than small facilities. Centralized parking, as an alternative to on-site parking, also improves urban design and preserves the historic nature of communities. Some cities mandate centralized parking facilities and finance them through development impact fees or negotiated contributions established during the environmental review process.

While the concept of centralized parking facilities makes sense from economic, environmental, and urban design perspectives, developers' concerns relate to inconveniences to building occupants, such as lack of parking proximity. These concerns can be addressed in part by providing reliable and frequent shuttle services to and from the centralized parking facilities. Successful centralized parking has been accomplished in Chattanooga, Tennessee. In this case, centralized facilities are located at the periphery of the city, reducing traffic and mobile source emissions in the downtown area and freeing up land in the center city for redevelopment.

Centralized, Peripheral Parking

Chattanooga, Tennessee

The downsizing of the American steel industry took its toll on Chattanooga, Tennessee, and by the 1960s Chattanooga was an economically depressed and polluted city. In the 1980s, the Chattanooga Area Regional Transit Authority (CARTA) board of directors began looking for ways to revitalize the downtown. To encourage urban development while limiting congestion and air pollution, CARTA developed a strategy that included periphery parking and a free shuttle service. The strategy maintained that with a linear shaped central business district, workers and visitors could drive to the city, park in one of the two periphery garages, and use the shuttles to travel up and down the 15 block business corridor. By constructing parking at either end of the city, CARTA hoped to intercept commuters and visitors before they drove into the city center.

The two structures, Shuttle Park South and Shuttle Park North are owned by CARTA and operated privately. The CARTA's shuttle service commenced in 1992. The Shuttle Park South garage opened in August 1994 with 550 parking spaces, while the Shuttle Park North garage opened two years later, with parking for 650 cars. The free shuttle buses, financed through the garages' parking revenues, depart from both garages every five minutes all day every day and pass within walking distance of most downtown destinations.

The peripheral parking garages and the shuttle service offer a popular alternative to downtown parking. The electric-powered shuttles transport approximately one million riders each year, making shuttle-proximate property attractive to businesses. Since 1992, over $400 million has been spent on development in Chattanooga. This includes a $45 million aquarium, a $28 million park, over 100 retail shops, and over 60 restaurants. CARTA's initiatives won commendation from EPA, receiving a "Way to Go" award in 1996 for innovative transportation solutions that support urban development. The parking-shuttle strategy has encouraged urban development while limiting the city's traffic and congestion.

Sources: EPA, 1998; Chattanooga News Bureau, 1999.

Maximum Limits

In contrast to generic minimum parking requirements, maximum limits restrict the total number of spaces that can be constructed rather than establish a minimum number that must be provided. Planners set maximum limits much like they set minimum requirements. Typically, a maximum number of spaces is based on square footage of a specific land use. For example, the City of Portland, Oregon restricts offices in the central business district to 0.7 parking spaces per 1,000 square feet, and retail to 1.0 space per 1,000 square feet of net building area. Contrary to what might be expected, the maximum limits in Portland have not led to a parking shortage because of the abundance of transit alternatives in the area.

Planners establish maximum limits instead of minimum requirements for various reasons. By managing the supply of off-street parking and reducing automobile use, Portland's planners hope to "...improve mobility, promote the use of alternative modes, support existing and new economic development, maintain air quality, and enhance the urban form of the Cen-

tral City" (Title 33: Planning and Zoning Code for the City of Portland, 1999). Both planners and developers benefit from restricting the number of parking spaces allowed.

From the city planner's perspective, maximum limits accomplish the following:

- Improve the urban environment by preserving open space and limiting impervious surfaces;
- Reduce congestion;
- Encourage attractive, pedestrian-friendly urban design; and
- Promote nonautomobile modes of transportation.

From the developer's perspective, maximum limits accomplish the following:

- Minimize costs for parking construction, operations and maintenance;
- Reduce traffic and traffic related costs; and
- Operate with a greater floor-to-area ratio, increasing leasable space.

There are, however, challenges to setting and maintaining maximum limits. When limiting the supply of parking, planners must consider possible spillover parking in surrounding residential neighborhoods. To avoid such spillover, developers must understand the factors that affect parking demand and ensure that viable nonauto transit alternatives exist where needed. Changes in frequency or routing of transit, increases or decreases in development densities, or changes in land use can all influence the demand for parking. By understanding the various factors that affect the demand for parking, however, planners can build flexibility into zoning codes and be receptive to modifying requirements to fit the needs of the changing environment. Another useful policy for preventing parking spillover into residential areas is to implement residential parking permit programs.

With restrictive maximum limits on the number of parking spaces, developers may worry about the long-term marketability of a property. Marketability should not be a concern for competing developments in the same locale since all developments must adhere to the maximum limits. With regard to competing developments outside the region with maximum limits, amenities other than parking such as convenient access to services and places of employment, aesthetically attrac-

Link Between Maximum Limits and Transit Improvements

Portland, Oregon

In Portland, Oregon, maximum parking limits vary according to distance from light rail stations. For example, new office space on the light rail transit mall is allowed 0.8 spaces per 1,000 square feet, while office space located in Goose Hollow, located several blocks from the transit mall, is allowed 2.0 spaces per 1,000 square feet.

These maximum limits have not been problematic to developers. In fact, property values and customer volume in the parking restricted areas near transit stations are higher than in other areas. In a 1987 survey of 54 businesses located near light rail transit, 66 percent of business owners said that their businesses had been helped because they were located near public transit; 54 percent reported increased sales volumes as a result of being located near transit

Source: Tri-County Metropolitan Transportation District of Oregon, 1999.

tive streetscapes, or pedestrian-friendly neighborhoods, can have a strong influence on tenant preferences. City governments and developers should incorporate these elements to attract businesses and residents.

Maximum requirements are not ideal for all locations. It is crucial for municipalities that employ maximum requirements to have accompanying accessible and frequent public transportation. It is also important for the area to be sufficiently stable economically to attract tenants without needing to provide a surplus of parking. A number of cities have implemented maximum parking requirements, including San Francisco, California; Portland, Oregon; and Seattle, Washington. The appendix provides an example of maximum limits as written in Portland's Title 33 Planning and Zoning Code.

"The generous parking capacity required by planners often goes unused. Studying office buildings in ten California cities, Richard Willson (1995) found that the peak parking demand averaged only 56 percent of capacity."

– Donald Shoup, Institute of Transportation Studies, University of California, Los Angeles

Parking Freezes

The amount of parking required can be directly reduced through parking freezes that cap the total number of parking spaces in a particular met-

Parking Freeze

Boston, Massachusetts

The Commonwealth of Massachusetts capped the total number of commercial spaces in Boston's downtown district in the 1970s, in response to nonattainment with carbon monoxide and ozone requirements specified in the Clean Air Act. Since Boston's zoning code mandates minimum parking requirements for some areas affected by the parking freeze, developers negotiate with both the local zoning board and the Air Pollution Control Commission (APCC), which administers the parking freeze, for approval of development proposals. Rather than setting parking plans or definitive standards for tenant parking, the APCC negotiates with each new development or redevelopment project, taking into account demographics and density. The APCC's goal is to limit parking to an overall ratio of 0.4 spaces per 1,000 square feet of floor space for office/commercial properties in Boston's downtown district. This parking goal represents a reduction of almost 90 percent from typical maximum demand parking requirements and is achievable because of Boston's extensive mass transit system. Partially as a result of its parking freeze, Boston now attains the carbon monoxide standards.

The cap on parking affects the way Boston workers commute to work, shifting transportation behavior to nonauto modes. As shown below, over 60 percent of commuters use modes of transportation other than single occupancy vehicles.

Boston Journey-to-Work Transportation Modes

Transport Mode	Number and Percentage of Commuters[3]
Public Transportation[1]	112,681 (43.4%)
Single Occupancy Vehicle[2]	96,194 (37.1%)
Carpool	27,833 (10.7%)
Walk	18,518 (7.1%)
Bicycle	1,448 (0.6%)
Work at Home	1,394 (0.5%)

NOTES:

1. Public transportation includes those workers who commute via subway, bus/trolley, railroad, or ferry.
2. Single occupancy vehicle (SOV) include personal automobile, taxi, or motorcycle.
3. Data are for Boston's 1.5 square mile CBD, with 50 million square feet of office space and six million square feet of retail space.

Source: Commonwealth of Massachusetts, 1992.

The Transportation Equity Act for the 21st Century: TEA-21

The Transportation Equity Act for the 21st Century (TEA-21) was enacted June 9, 1998 as Public Law 105-178. TEA-21 authorizes the federal surface transportation programs for highways, highway safety, and transit for the six-year period of 1998-2003. TEA-21 provides significant funding and other assistance to support transit and other nonauto transport modes. Benefits of TEA-21 include the following provisions:

- Transit and vanpool benefits may be offered in lieu of compensation payable to an employee for taxable years beginning January 1998. This gives transit and vanpool benefits the same tax treatment that parking benefits receive under the Taxpayer Relief Act of 1997.
- The limit on nontaxable transit and vanpool benefits is increased from $65 to $100 per month for taxable years beginning January 2002.
- Employers can offer employees several options for qualified transportation fringe benefits. These benefits can be provided to employees either in addition to present compensation or in lieu of compensation, tax free.
- Employers can offer a parking cash out program whereby employees may choose to forego employer provided parking and receive the taxable cash value of the parking, or receive a tax-free transit or vanpool benefit of up to $65 per month ($100 per month beginning January 2002).

ropolitan district. Such freezes have been implemented in various areas of the country in response to nonattainment of environmental standards, traffic congestion, or other urban planning considerations. Similar to the issues associated with maximum limits, parking freezes need to be implemented in conjunction with viable public transportation options. Cities with successful parking freezes generally have strong economies and are attractive to tenants, customers, and visitors. Such cities can attract businesses because the benefits of the urban location outweigh the potential drawback of limited parking, and because public transit offers a viable alternative to auto use.

Demand Reduction

Many of the alternatives to minimum parking requirements discussed above, such as in-lieu fees, centralized parking, shared parking, and maximum parking limits, provide ways to reduce excess parking supply. It is also possible to reduce the need for parking and the associated costs by influencing the demand for parking. Demand reduction can be achieved by increasing the price of parking or through instituting nonauto transport incentives. Charging users for parking is a market-based approach by which the true cost of parking can be passed through to parking users. If the fee charged to users of parking facilities is sufficient to cover construction, operation and maintenance costs, it will likely cause some users to seek alternative transport modes.

Demand reduction can also be achieved through a variety of programs and policies described further below that attempt to reduce the demand for parking, and thus reduce the needed supply. While these programs are typically developed by local governments, their success often depends on the commitment of businesses to implement them effectively. Demand reduction programs include: subsidies for transit, cash-out programs, transit improvements, pedestrian and bicycle amenities, and vehicle trip reduction programs. When employers allow telecommuting and/or flexible work schedules that reduce commuting, demand is also reduced.

Subsidies for Transit

Transit subsidies can be provided by cities or by employers. In the case of employer-paid transit pass schemes, the employer pays the cost of employees' transit, converting the fixed cost for parking spaces into a variable cost for the public transportation subsidy. This fringe benefit for employees reduces the demand for parking at the workplace, which in turn reduces traffic, air pollution, and energy consumption. It also reduces the

cost associated with providing parking, as transit subsidies are generally less expensive than providing parking. A transit pass in Los Angeles, California, for example, costs $42 per month, whereas the average cost for a parking space is $91 per month (Shoup 1997b). To promote transit subsidies, the 1998 Transportation Equity Act for the 21st century eliminates the tax burden for both employers and employees; these subsidies are not taxed as payroll or as income.

In some cases, city planners respond to employer paid transit subsidies by lowering minimum parking requirements. For example, included in Montgomery County, Maryland, office zoning requirements is a 15 percent reduction in minimum parking requirements if businesses offer reimbursed transit passes (Smith 1983). By offering subsidies for public transportation use, employers enable the reduction of parking space requirements, thus decreasing total development costs and making urban development opportunities more inviting.

Subsidies for Transit
Boulder, Colorado

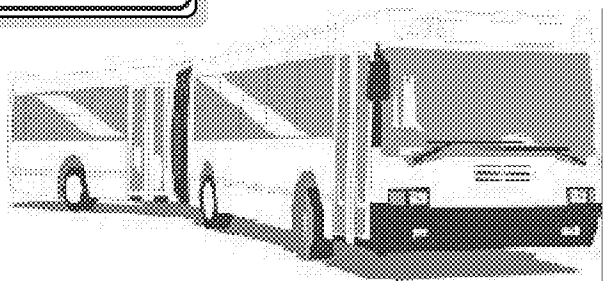
Boulder's downtown district comprises some 700 businesses and over 7,500 employees. Faced with a shortage of parking for customers, Boulder developed a program to encourage nonautomobile commuting for its downtown employees. In 1993, Boulder's City Council mandated restricted downtown parking and appealed for parking demand management for the city's commuters.

The Central Area General Improvement District (CAGID), made up of downtown businesses, responded to the Boulder City Council's demands by providing free bus passes for all of the district's employees. The pass program, which costs $500,000 annually and is funded through downtown meter revenues, has successfully altered transportation modes, freeing up valuable customer parking spaces, in the following ways:

- Multiple occupancy vehicle commuting increased from 35 percent in 1993 to 47 percent in 1997.
- The district's employees require 850 fewer parking spaces as a result of the free bus pass program.
- The increase in available parking has encouraged more retail customers to shop in downtown Boulder.
- By taking public transportation, bicycling, carpooling, and walking, Boulder employees avoid 212,500 single occupancy vehicle trips per year. With an average commute trip in Boulder of 10.8 miles, over two million miles of pollution- and congestion-causing automobile use is prevented each year.

While this program has produced beneficial results, the ideal balance of downtown parking and nonauto transport modes has yet to be achieved. Downtown Boulder, Inc., an organization representing the downtown businesses, maintains that while the bus pass program provided more spaces for customers, there continues to be a shortage of parking for employees and visitors.

Source : Boulder Community Network, 1999.



Cash-Out Program
Santa Monica, California

In 1992, California instituted a mandatory cash-out program. The California Health and Safety Code Section 43834 reads, "'Parking cash-out program' means an employer-funded program under which an employer offers to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space."

The effects of the cash-out program on transportation use in Santa Monica, California have been significant. A study conducted by Donald Shoup of the UCLA Institute of Transportation Studies found that for two Santa Monica employers, the share of solo commuters decreased by between seven and eight percent once the cash-out program was in place. This reduction in solo commuters is responsible for a decrease in annual commuting vehicle miles traveled (VMT) of 858 miles (Shoup, 1997a).

Transit Improvements
Portland, Oregon

Tri-Met, Portland's transit agency, recently added an 18-mile extension to the MAX light rail system. This $944 million project includes 20 new MAX stations and connects Portland's eastern suburbs to its western suburbs. One of the benefactors of MAX improvements is the Lloyd District. Located just 1.25 miles east of Portland's downtown, the Lloyd District has seen more than $790 million worth of development adjacent to its four MAX stations. MAX moderates the pressure of this wave of development on the Lloyd District's parking supply by providing an alternative to automobile use. Included in this development is Oregon's $85 million Convention Center, a $200 million renovation and expansion of the Lloyd Center Shopping Mall, and a $262 million sports arena that hosts the Portland Trailblazer basketball team. Recognizing the benefits of MAX, the Convention Center paid for one of the district's new MAX stations.

The Lloyd District's development is not limited to large scale projects. Ashford Pacific, a developer new to the Portland area, saw opportunity in this region of the city and purchased 70 acres of land, all within close proximity to MAX stations. In conjunction with Liberty Mutual Northwest, Ashford Pacific developed Liberty Centre, a $40 million office building located across the street from the Seventh Avenue MAX station. This 350,000 square foot building is home to Liberty Mutual Northwest, the headquarters of KinderCare as well as a number of local firms.

Source: Tri-County Metropolitan Transportation District of Oregon, 1999.

Cash-Out Programs

Cashing out is another demand reduction practice in which cash is provided to employees who do not drive to work. These cash payments can be set at the equivalent of the full cost of parking or some portion thereof. Full cash equivalents typically range between $36 and $165 per month (Shoup 1997a). The cost savings associated with cash-out programs depends on the amount of the cash payments. If the full cash equivalent is provided, this demand reduction program does not reduce the total costs of providing parking. However, employees may accept cash payments lower than the full cash equivalent in exchange for not having on-site parking. If partial cash payments are used, employers face lower cash-out costs and employees still benefit.

In any case, cash-out programs provide significant environmental, social, and broader economic benefits. For example, in response to California's 1992 mandatory cash-out requirement, eight firms reported an average 17 percent reduction in the total number of solo drivers (Shoup 1997a). Another benefit of cash-out programs is a reduction in traffic congestion, and associated pollution.

Transit Improvements

Local government officials can also improve public transit to decrease auto dependence and associated parking needs. Improvements to consider include new transit modes, such as light rail, expanded transit service hours, increased bus lines, and revitalized transit stations. Portland, Oregon's MAX light rail system exemplifies the widespread benefits of transit improvements. The light rail system encourages transit-oriented development, decreases automobile commuting, and eases demand for parking. In fact, the light rail improvements eliminated the need for six downtown parking towers (U.S. EPA 1998). These improvements are also partially responsible for $1.3 billion in new development in Portland over the last 10 years.

Pedestrian and Bicycle Amenities

Demand for parking can be reduced by providing pedestrian and bicycle amenities that make it easier and

more pleasant for people to walk or bicycle rather than drive. These amenities and design changes can alleviate traffic congestion. In particular, improving the walkability and pedestrian orientation of employment centers can address the increasingly common "drive to lunch" syndrome. For example, the auto-orientation of Tyson's Corner, Virginia has resulted in terrible traffic at lunch time because people cannot walk to eating establishments or to do errands.

These low cost amenities can be as simple as providing bicycle racks and walkways. For example, officials in Schaumburg, Illinois, a suburb of Chicago, have incorporated provisions for bicycle use directly into their zoning ordinance to encourage use of nonauto transport modes. The ordinance requires all retail centers to have a minimum of 10 bicycle spaces located at each main building entrance. To increase awareness, the ordinance requires that bike racks be located in a place where they are highly visible; to promote safe bicycle use, the ordinance requires bicycle parking areas to be separated from automobile parking. Excerpts from this zoning ordinance are included in the Appendix. (See Section 154.125 "Bicycle Parking Requirements.") Providing shower and locker facilities also encourages bicycling, roller blading, and walking to work.

Pedestrian and Bicycle Amenities
Kendall, Florida

- Bicycle/pedestrian access via new sidewalks and pathways.
- Trees and shrubs along edges facing streets and sidewalks.
- Parking hidden in the rear or in parking garages.
- Shade and rain protection, such as colonnades, arcades, marquees, second floor balconies, wide awnings, or tree canopies, for pedestrians.
- Buildings positioned along the sidewalks at a deliberate alignment, giving a designed shape to the public space.
- Doors and windows spaced at close intervals to generate activity, direct views to merchandise, and make the walk sufficiently interesting.
- Minimal number of vehicular entries to parking areas that can diminish pedestrian mobility and erode space.

Source: Downtown Master Plan for Kendall, Florida, 1998.

Promoting bicycle and pedestrian transport modes can also be accomplished through simple design changes, some of which can be implemented at no cost. Instead of locating parking between the street and the buildings, requiring pedestrians and bicyclists to navigate through parking lots, parking should be set back behind buildings. The Downtown Master Plan for Kendall, Florida (Miami-Dade County), discusses several design concepts to improve pedestrian and bicycle access. Some of the key elements promoted, but not required, by this program are listed in the text box above.

Vehicle Trip Reduction Programs

Another direct form of demand reduction involves instituting vehicle trip reduction programs. Vehicle trip reduction programs combine several types of demand reduction components to meet explicit vehicle trip reduction goals. Thus, instead of capping the number of parking spaces, local officials limit the number of vehicle miles traveled in a particular region. These types of programs attempt to decrease the number of trips by single occupancy vehicles (SOVs) and increase the use of a variety of commuting alternatives, including transit, carpooling, walking, and bicycling.

To increase the effectiveness of vehicle trip reduction programs, cities or employers can incorporate an assortment of complementary program elements to encourage nonauto and non-SOV transport. The following are some examples:

- "Guaranteed ride home" services that allow employees who use public transit to get a free ride home (e.g., via taxi) if they miss their bus or if they need to stay at work late.
- Company fleet cars that can be used for running errands during the workday (e.g., doctor appointments).
- Preferential and/or reserved parking for vanpools/carpools.
- Carpooling and/or vanpooling with ride matching service. Ride matching can facilitate the identification of people who live close to one another. This service can be accomplished by providing "ride boards" or by using an employee transportation coordinator.
- Cellular phones for car and vanpooling to facilitate timing of pick-ups.

Vehicle Trip Reduction At Genetics Institute

In order to meet the goals of the Massachusetts' State Implementation Plan, Cambridge, Massachusetts instituted a Vehicle Trip Reduction Ordinance in 1992 to reduce vehicle miles traveled in the city and to control automobile-related air pollution. Cambridge also implemented a Transportation Demand Management (TDM) ordinance to complement state legislation. The goal of the TDM ordinance is to improve mobility and increase accessibility, while reducing congestion and air pollution. The TDM ordinance requires that proposals for building permits include a TDM plan. The TDM plan is reviewed by the city in conjunction with other components of the development plan. In planning a TDM, developers must consider the impact of their development on transportation patterns.

To ensure that TDM plans are effective, employers must set goals to reduce the number of employees commuting in single-occupancy vehicles (SOV) relative to a baseline for the local area, and measure progress toward these goals using annual, employer-managed surveys. The City of Cambridge also makes employers aware of 1998 Transportation Efficiency Act for the 21st Century (TEA-21) which allows employees who commute by public transit or vanpool to deduct the cost of their commute from their taxable income. This legislation also allows businesses to provide tax-free transit subsidies.

Founded in 1980, Genetics Institute (GI) occupies two Massachusetts offices, one in Andover and one in Cambridge. As a corporate policy, GI independently designs TDM plans for its properties and was one of the founding members of the Alewife Transportation Management Association, an organization committed to improving access to, and ease of, public transit and encouraging alternative modes of commuter transportation. As part of its Cambridge TDM, GI has a goal of keeping single occupancy vehicle use to less than 59 percent.

Located within walking distance of a subway station and in close proximity to a paved bicycle path, GI provides fully subsidized public transit passes for all of its employees; enclosed, locked bicycle storage; and shower facilities. The company also offers a cafeteria, grocery service, exercise facilities, guaranteed ride home program, and an hourly shuttle between the two Massachusetts sites. These amenities afford all 704 of GI's Cambridge employees the opportunity to shop, eat, and exercise at work. The total annual cost for these transportation management programs is approximately $184,000. The company's transportation management has been effective, boasting a low 56 percent SOV mode split, with over one quarter of GI's Cambridge employees commuting by public transportation.

In 1986, GI acquired additional land for its Cambridge site. With this land, the company plans to add a 246,000 square feet research and development facility to its existing 500,000 square feet office and laboratory space. GI expects to employ about 430 people at the new facility. In its parking transportation demand management agreement, GI agreed to construct no less than one space per 800 square feet of occupancy (307 spaces) and no more than one space per 400 square feet (615 spaces). GI ultimately constructed only 350 parking spaces, resulting in a parking ratio of 1.42 spaces per 1,000 square feet of space or 0.81 spaces per employee. The total cost for the additional structured and surface parking will be approximately $1.2 million in construction costs, $1,000 to $2,000 for each of the 290 surface spaces, and $10,000 to $14,000 for each of the 60 structured spaces. By constructing 265 fewer spaces than their maximum requirement would permit, and assuming a weighted average cost per space of $3,429, GI saved approximately $900,000 in parking construction costs.

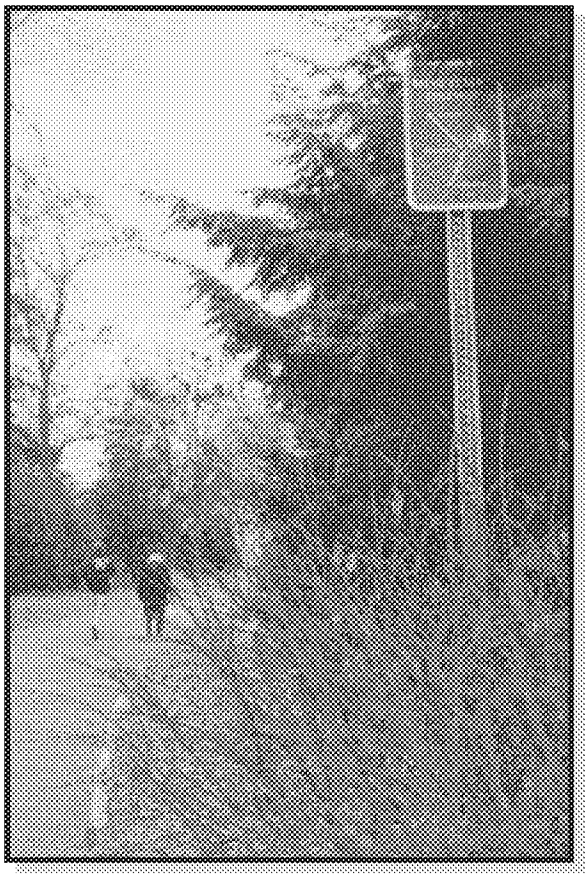
Case Studies

This final section of the guide presents three case studies of development projects located in metropolitan areas that have benefited from innovative parking alternatives:

- Reduced parking requirements at The Shoppes of Wilton Manors, Wilton Manors, Florida;
- Transportation management measures at SAFECO Insurance Company Expansion, Redmond, Washington; and
- Shared parking and in-lieu fees at The D'Orsay Hotel, Long Beach, California.

In the case studies, parking alternatives are evaluated in terms of their impacts on parking costs and development decisions; the environmental impacts of resulting transportation mode shifts; the economic, fiscal, and social benefits of the alternatives; and the opportunity cost of providing parking.

While some of the innovative alternatives described in the cases are designed to address an entire municipality, others are targeted at specific developments. Often, the goal of these alternatives is environmental—reducing automobile use and improving air quality. Other times, the alternative is economically motivated—lowering project costs and encouraging urban development.



In these case studies, both the planners and developers recognized the advantages of alternative parking requirements, and the alternative parking requirements lowered the total cost of the development. For the Wilton Manors and D'Orsay Hotel cases, the lowered cost associated with parking alternatives was a key element of project feasibility. In all cases, parking alternatives also provided environmental benefits. SAFECO's transportation management measures and development design limit air emissions associated with automobile commuting and protect water quality by preserving permeable surfaces that absorb rainfall and prevent polluted runoff. Parking alternatives used for The Shoppes of Wilton Manors and D'Orsay Hotel developments facilitated these infill projects, thus preventing additional sprawl and the associated air and water quality impacts.

Reduced Parking Requirements: The Shoppes of Wilton Manors
Wilton Manors, Florida

Southeast Florida, comprising Palm Beach, Broward, and Dade Counties, is one of the fastest growing regions of the United States. In 1960, the population of the region was 1.5 million people; in 1990, the population reached 4.1 million. Projections for 2015 suggest that the population will reach 6.2 million people, an increase of over 50 percent from 1990.

With the growing population and increasing development, fragile ecosystems are being lost and water supplies threatened. This area epitomizes the negative aspects of sprawl, and there is a desire to reverse the trend by revitalizing the inner core areas and promoting "smart growth" development which is environmentally, economically, and socially sustainable. Reducing parking requirements to reduce the amount of impervious surface and encourage urban infill and brownfields redevelopment is one element of southeast Florida's move toward smart growth and development.

In the City of Wilton Manors, located in Broward County, parking reductions were partly responsible for enabling a financially deteriorating neighborhood shopping center to be redeveloped into a successful mixed-use development, featuring restaurants, art galleries, and other entertainment uses, as well as professional offices. At its peak in the 1960s, the shopping center housed a Grand Union Supermarket, a bank, a fast food restaurant, and many other stores. In the 1990s, the shopping center lost several businesses, reducing the tenant occupancy rate to 30 percent.

To accommodate redevelopment of the property and revitalize the area, the city teamed with a private development company, Redevco, creating a public-private partnership to transform the shopping center. Because a host of "big box" retail stores had recently located in nearby outlying areas, this property could not support additional retail stores. Instead, the city and Redevco identified an untapped market niche—entertainment, cultural attractions, and restaurants. To enable these uses, the city created a new zoning overlay district that not only changed zoning requirements to allow for arts and entertainment uses, but also exempted the developer from standard parking requirements by allowing for shared parking in planned off-site public parking structures. The new zoning district also allowed for outside cafes and seating to make the restaurants more inviting and attractive.

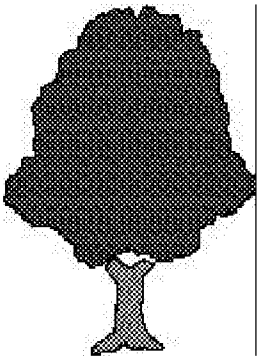
Cost Savings & Financial Feasibility

Under the city's generic parking requirements, art and entertainment uses would have required 390 new parking spaces, in addition to the existing spaces at the site required for previous retail use. Construction of the additional 390 parking spaces would have cost approximately $1.9 million

and would have also necessitated demolition of existing buildings, further increasing redevelopment costs (by approximately $30,000) and reducing rental income.[5] Reducing the parking requirements and allowing for shared parking reduced development costs enough to make the redevelopment financially feasible for the developer.

The Shoppes of Wilton Manors now boast full occupancy, and rental rates of $32 per square foot (up from $8 per square foot). These two complementary factors—increased occupancy and increased rental rates—account for an **increase in total annual rental income of $26 million**, from $2 million to $28 million, **12 times** its former rental income.

Environmental Benefits



While this redevelopment with parking reductions has not caused a change in transport mode splits (more people are driving to the Shoppes of Wilton Manor because of its increased attractiveness and desirable restaurants and arts and entertainment facilities), the project provides other environmental benefits. By revitalizing an existing development and spurring additional redevelopment in the area (see below), the parking reductions played a part in preventing further sprawl and greenfields development. In Southeast Florida, curbing sprawl is especially important because of the sensitive ecosystem west of the area—the Florida Everglades. As noted in a December 1998 report prepared by the South Florida Regional Planning Council, most of the current developments in the region are located on land that was once part of the Everglades system. In addition, as part of the development agreement, 80 percent of the trees along Wilton Drive were preserved; without the new zoning overlay district, this street would have been widened, requiring that trees be razed.

Other Benefits

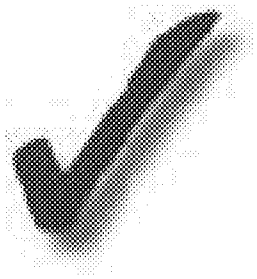
In addition to the financial success of the project and the related environmental benefits, the revitalization of the Shoppes of Wilton Manors has provided economic, fiscal, and social benefits to the community.

- **Economic benefits.** The project has stimulated adjacent economic development. An office building next door that was vacant for 18 months now houses a law firm with 100 employees, many of whom frequent the restaurants and entertainment facilities at the Shoppes of Wilton Manors. Property values in the surrounding area are also improving; rental rates have almost doubled, increasing from $6 per square foot to rates of between $11 and $14 per square foot of leased space.

[5] The building demolition would have also slightly reduced the additional parking requirements, but not by enough to make the development financially feasible.

- **Fiscal benefits.** The increased property value of the Shoppes of Wilton Manors—increasing by more than 10 times the initial value, from $226,000 to over $3.3 million—will add an estimated $80,000 to the city in property tax revenues. In addition, the other private investments along Wilton Drive have resulted in a 10 percent increase in city-wide property tax revenues.

- **Other social benefits.** The project has contributed aesthetic improvements and a safer, more pedestrian-friendly community environment. Storefront and landscaping improvements make the area more attractive. There has been a reduction in criminal activity due to the increased activity and vibrancy of the area. The pedestrian flavor of the town center is enhanced as a result of improved site access. All of these benefits contribute to an improved quality of life for local residents and business people.



Lessons Learned

Some of the key elements related to the success of the Wilton Manors revitalization effort include the following:

- The developer's and the city's willingness and commitment to work together. According to Redevco Executive Vice President, Debra Sinkle, the project was successful because of the public/private partnership between the city and Redevco. The city's flexibility with regard to zoning requirements and its commitment to the project created the confidence necessary for the investment of private dollars into the project.

- The city's flexibility in reducing parking requirements to support different redevelopment uses that would otherwise require more parking than the original use.

- Substantial cost savings resulting from parking reductions, making the redevelopment financially feasible.

Excerpts From Ordinance Z-195: Establishment of an Arts and Entertainment Special Overlay District

Wilton Manors, Florida

Purpose and Intent

The purpose of the Wilton Drive Arts and Entertainment Overlay District is to create the opportunity for, and to encourage the development of, new mixed-use development providing entertainment, cultural facilities, restaurants, shopping and professional offices within the Wilton Drive Central Business District.

.....

The parking regulations are intended to promote the location of restaurants, entertainment facilities and other intense uses by exempting the properties within the district from the off-street parking requirements ... and providing standards for parking within the district [shared parking provision].

.....

Exemptions from Parking Requirements:

A. Exemptions from Parking Requirements

1. Restaurant or other establishment for consumption of food or beverages on the premises: One space per two hundred (200) square feet of floor area in rooms or spaces for customer service.
2. Auditorium, theater, gymnasium, stadium, area, or convention hall: One space per three hundred (300) square feet of floor area.
3. Amusement place, dance hall, skating rink, or exhibition hall without fixed seats: One space per two hundred (200) square feet of floor area.
4. Retail store, personal service establishment and banks: One space per three hundred (300) square feet of floor area.

B. On-Street parking to count toward parking requirements

On-street parking immediately adjacent to a lot on which the business is located shall count toward fulfilling the parking requirement of that lot.

C. Valet Parking

Valet parking and the stacking of vehicles shall be permitted...

D. Joint use and off-site facilities to count toward parking requirements

Joint use and off-site facilities [for parking] shall be permitted ...

Source: City of Wilton Manors, Ordinance No. Z-195.

A Vehicle Trip Reduction Program: SAFECO Insurance Company Expansion
Redmond, Washington

The State of Washington's Commute Trip Reduction Law (CTR) was passed in 1991 with goals of improving air quality and mitigating traffic congestion. This transportation demand management measure targets the state's largest counties (those with populations greater than 150,000 people), requiring employers with more than 100 employees to implement programs to reduce single occupancy vehicle (SOV) trips to and from work. Through the state's CTR, employers monitor commuter mode splits by administering employee surveys, which are written and processed by Washington state. The CTR established a goal of a 35 percent reduction in trips by 2005 compared to 1993 levels.

Maximum Parking Limits
Redmond, Washington

The City of Redmond instituted maximum parking limits in the early 1990s to manage growth and traffic. These requirements limit the total number of parking spaces that can be developed by land use. For example, general commercial land uses are limited to five spaces per 1,000 square feet of gross floor area (GFA), and business parks are confined to three spaces per 1,000 square feet GFA.

SAFECO Insurance Company of America, Redmond Campus, located in King County, one of the nine Washington counties affected by the CTR, has responded to the CTR by implementing transportation management measures as part of its Transportation Management Plan (TMP). These measures consist of employee transit passes, special reserve parking for high occupancy vehicles (HOV), ride matching, vanpooling, and guaranteed ride home services. Provision of these services has allowed SAFECO to reduce its parking requirements for its recent expansion project below the City of Redmond's maximum levels.

SAFECO is currently undertaking a large-scale construction project to accommodate anticipated growth at its corporate headquarters in Redmond, adding three additional buildings (385,000 square feet of office space) and three parking structures (843 parking spaces) for the new office space. To preserve the attractive park-like setting of the 48-acre campus and to maintain a pedestrian-friendly environment, SAFECO chose to construct all three parking structures underground. These subterranean spaces, while expensive to construct at $18,000 per parking space, will preserve greenspace and make it easier to walk around the business park campus. The City of Redmond has maximum parking limits that would allow SAFECO to construct 1,155 spaces. Instead, SAFECO built 843 spaces, resulting in a parking ratio of 2.2 spaces per 1,000 square feet for the new office space. This amounts to a savings, relative to the maximum limits, of 312 parking spaces. Reducing the total number of spaces allowed SAFECO to mitigate the high cost of underground parking.

Cost Savings and Financial Feasibility

While these parking reductions were not implemented as cost-cutting measures, the gross cost savings associated with the parking reductions

(relative to the maximum limits) amount to $5.6 million in parking construction costs, or about $491,000 annually.[6] SAFECO's exemplary transportation management program (TMP) reduced parking demand and allowed the company to build fewer parking spaces. Thus, a portion of SAFECO's expenditures on its TMP represents the indirect cost of the parking reductions and resulting savings. The total cost of SAFECO's TMP at its Redmond campus is approximately $261,000 per year, including $75,400 for transit subsidies.

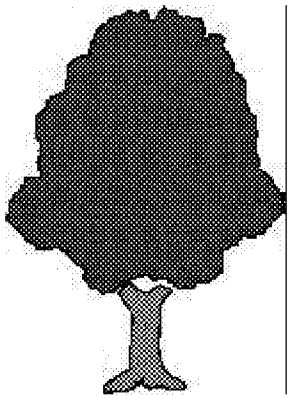
When both the full cost of transportation demand management at the Redmond campus and the savings from parking reductions are considered, SAFECO's net savings from parking reductions are $230,000 annually. Given that SAFECO would have incurred some of the costs of transportation demand management at its Redmond campus regardless of the parking reductions, the net savings actually exceed $230,000. SAFECO's decision to increase the density of its existing property, rather than move to another (likely ex-urban) location, also avoided the cost of procuring additional land.

King County Metro
King County, Washington

King County is Washington's most populous county (almost 2 million residents) and includes the cities of Seattle, Kirkland, Bellevue, and Redmond. The county's transit agency, King Country Metro (Metro), serves a total of 75 million riders annually. The agency operates bus service throughout the county and runs the largest vanpool in the United States, transporting 5,000 commuters each day. Metro also works closely with employers, cities, and institutions to provide supportive services that encourage alternatives to automobile transport including transit passes, guaranteed ride home, ride matching, and commuter bonus programs.

Environmental Benefits

Under their TMP, SAFECO agrees to maintain an SOV rate at or below 60 percent. Since 1997, SAFECO has kept its total number of SOV trips to between 57 and 59 percent of total commute trips relative to the overall transport mode split for East King County of 81.4 percent SOV commuting and 13.4 percent carpooling.[7] Rather than drive alone, 15 percent of SAFECO employees carpool, 12.5 percent use vanpool services, 8 percent use public transit, and the remaining 7 percent bicycle, walk, or telecommute. The company also maintains information on commuter vehicle miles traveled (VMT). On average, SAFECO employees travel between 6.5 and 7 miles one way. Thus, by maintaining an average 58 percent SOV rate for its 1,700 employees, SAFECO averts as many as 4,635 VMT each day, or about 1.2 million miles each year. These VMT figures assume two people per carpool and four people per vanpool. Thus, if the carpools or vanpools transport a greater number of passengers, this reduction in VMT would be greater.



- ***Air Quality Benefits:*** The environmental benefits associated with this reduction in automobile commute miles are significant. By avoiding almost 1.2 million miles of automobile travel, approximately 27.56 tons of carbon monoxide, 3.85 tons of nitrogen ox-

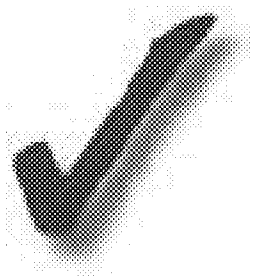
[6] This annual amount is only associated with construction costs. Annual amount assumes constant payments, an interest rate of 7.25 percent, and a 25-year payment period (per discussion with SAFECO transportation manager).

[7] Washington State Department of Transportation, 1993.

ides, and 2.20 tons of hydrocarbons associated with commuting are averted each year.[8]

- ***Water Quality Benefits:*** Another significant, yet less quantifiable, environmental benefit of reduced parking is the preservation of pervious surfaces to absorb rainfall and prevent polluted runoff. Increasing the amount of impervious areas through paving can alter the area's hydrologic system and cause runoff mixed with oil and other contaminants to pollute receiving streams, rivers, lakes and estuaries. With approximately 40 inches of precipitation each year and many fishable streams, the King County ecosystem is especially susceptible to polluted runoff. An additional 312 parking spaces in aboveground lots account for approximately 100,000 square feet of impervious surfaces.

Lessons Learned



Several key factors contributed to the success of SAFECO's Vehicle Trip Reduction Program. These include:

- The City of Redmond's flexibility and cooperation in allowing SAFECO to increase density on the existing property.
- SAFECO's environmentally responsible corporate ethic of reducing parking below the maximum limits and maintaining its location in Redmond, thus preventing additional sprawl in the area.
- Available bus service to the area. Frequent and reliable public transit through King County Metro enables SAFECO employees to use alternative modes of transportation even when commuting from other towns in the county.
- SAFECO did not require outside financing. SAFECO's transportation management director believes that had they required outside funding, lenders might have resisted making loans unless more parking was provided in the development plan.

[8] We use average emissions factors from EPA's Office of Mobile Sources' *Compilation of Air Pollution Emissions Factors, Volume II: Mobile Sources: (AP-42).* The AP-42 provides the following emissions factors: 21.05 grams of carbon monoxide emitted per VMT, 2.97 grams of nitrogen oxides emitted per VMT, and 1.71 grams of hydrocarbons emitted per VMT.

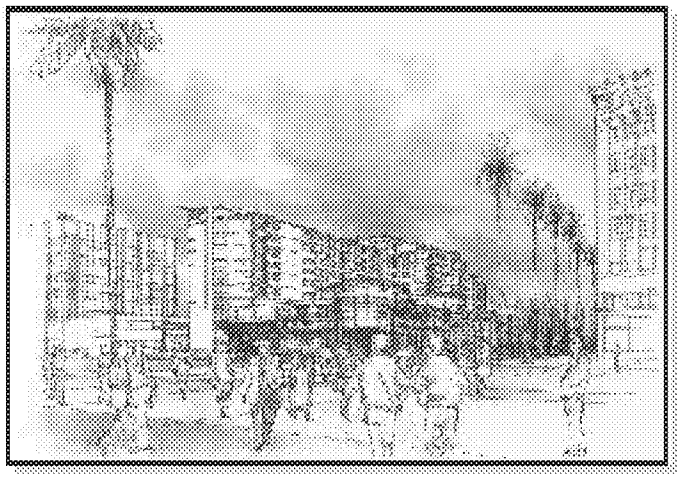
Shared Parking and In-Lieu Fees: D'Orsay Hotel
Long Beach, California

The City of Long Beach, California recognizes that parking is expensive and consumes valuable land. In its Downtown Parking Management Plan, the city's redevelopment agency promotes small- and large-scale urban development by allowing for shared parking and in-lieu parking fees. The types of development projects eligible for these parking alternatives cover non-residential new construction on lots less than 22,500 square feet, additions or rehabilitation to existing buildings, and renewal of historic landmark buildings.

Long Beach's Downtown Management Plan has proven effective in encouraging redevelopment. The four-star D'Orsay Hotel, which was proposed to the city in 1998, provides an example of how cities can facilitate redevelopment with parking reductions. The proposed D'Orsay Hotel includes a 162-room boutique hotel with 35,000 square feet of retail space. The property, located on a three block pedestrian walkway in downtown Long Beach, was used for office space until the late 1980s when the buildings were deemed unsafe and demolished. In recent years, the property was used as a surface parking lot. Other development proposals for this property had been made to the city, but fell through in part due to the financial burden imposed by the city's minimum parking requirements.

For the D'Orsay Hotel proposal, Long Beach's minimum parking requirements would have required the developer to construct one parking space per hotel room, and four spaces per 1,000 square feet of gross floor area (GFA) of retail space, totaling 302 spaces. With construction costs of $16,000 per parking space, the parking costs would have totaled $4.83 million, making the project financially infeasible.

After conducting a traffic study to assess parking demand at other Long Beach downtown hotels, the city's planning department determined that this mixed-use hotel/retail development did not require the minimum number of parking spaces and modified the requirements to three spaces per 1,000 square feet of retail space, and 113 spaces for the 162 hotel rooms. The Downtown Management Plan allowed for the reduction of the parking requirements for the retail space and the hotel's valet parking system allowed for the reduction of parking requirements for the hotel space. Thus, the revised total number of spaces required was 218 spaces, 84 fewer than would otherwise be required.



Even with the reduction of 84 parking spaces, the developer determined that the project was financially infeasible given the high cost of under-

ground parking. At about $16,000 per space in construction costs, parking for this project, even with the revised requirements, totaled $3.49 million.

Upholding its mission to encourage urban revitalization, the City of Long Beach Redevelopment Bureau agreed to adjust the parking requirements for this mixed-use project in the form of in-lieu fees for parking. The city allowed the developer to pay in-lieu fees for 56 of the 218 required parking spaces. The in-lieu fee was $3,000 per parking space plus an additional $50 per space per month to cover parking operating and maintenance expenditures.

Cost Savings and Financial Feasibility

As shown in the table below, the revised parking requirements decreased the developer's parking construction costs by $1.34 million relative to the generic requirements. With additional savings of $730,000 from the in-lieu fee arrangement included, the **total parking cost savings** to the developer **totaled over $2 million**, enough to make the project financially feasible. These cost savings significantly improved the projected financial net returns for the proposed project, and facilitated revitalization of the surrounding area. The Long Beach Redevelopment Bureau reports that ground should be broken by the end of 1999 for an opening date in the beginning of 2001.

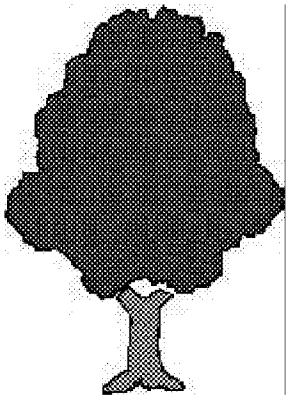
Environmental Benefits

The hotel development is expected to encourage pedestrian traffic in the area, rather than cause additional automobile travel. In addition, the infill redevelopment of the D'Orsay Hotel property may have averted a greenfield development. These types of urban infill projects reduce additional sprawl in California, a state already plagued with an overload of cars, highways, and sprawl development.

Modified Parking Requirements for the D'Orsay Hotel

	Requirement	Gross Floor Area (GFA)	# of Spaces Required	Cost per Space	Total Cost (millions)
Generic Requirements					
Retail	4 spaces/1,000 square feet GFA	35,000 square feet	140	$16,000	$2.24
Hotel	1 space/room	162 rooms	162	$16,000	$2.59
Total	--	--	**302**		**$4.83**
Revised Requirements					
Retail	3 spaces/1,000 square feet GFA	35,000 square feet	105	$16,000	$1.68
Hotel	0.70 spaces/room	162 rooms	113	$16,000	$1.81
Total	--	--	**218**		**$3.49**
Revised Requirements and In-Lieu Fees					
Retail & Hotel On-Site	N/A	N/A	162	$16,000	$2.59
Retail & Hotel Off-Site	N/A	N/A	56	$3,000	$0.168
Total (With In-Lieu Fees)	--	--	**218**		**$2.76**

Other Benefits

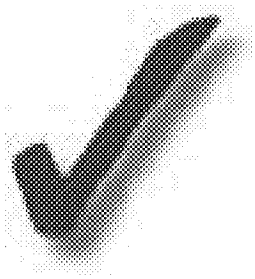


- **Economic Benefits.** The D'Orsay Hotel promises to provide economic benefits to downtown Long Beach by attracting additional pedestrian traffic. Specifically, the D'Orsay will help existing businesses that are struggling to stay in the area, and will likely promote additional redevelopment projects.
- **Fiscal Benefits.** The D'Orsay Hotel is expected to generate approximately $300,000 annually in additional property tax revenues for the city.[9] Because this property is located in an economically troubled area qualified to receive special assistance as a "California Redevelopment Project Area," the property tax revenue generated from the project will be directed back into the area for further redevelopment and infrastructure improvements. In addition, the state will receive revenues from California's 8.25 percent sales tax and the city will receive revenues from the 10 percent hotel tax.
- **Other social benefits.** The D'Orsay Hotel will provide social benefits to the residents of Long Beach by promoting an active and pedestrian friendly downtown with multiple amenities. By reducing the minimum parking requirements, the Long Beach Redevelopment Bureau reduced the development's need for surrounding land. In addition, historic buildings were preserved that may otherwise have been demolished to provide space for constructing parking at the city's minimum levels.

Lessons Learned

This successful redevelopment was made possible for several reasons:

- The City of Long Beach's flexibility and recognition that parking is expensive and consumes valuable land. This enabled the developer to negotiate reduced parking requirements and in-lieu fees that made the project feasible.
- Combining two different types of innovative parking requirements (shared parking and in-lieu fees). This was necessary to make the development project financially feasible.
- Conducting a development-specific traffic study to estimate the number of parking spaces needed for development. The study of other downtown Long Beach hotels showed that applying the city's parking standards would have resulted in an excess supply of parking at the D'Orsay Hotel.



[9] At the property tax rate of one percent on the project's incremental value of $30 million.

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Examples of Innovative Parking Ordinances and Programs

Examples Of Innovative Parking Ordinances And Programs

This appendix provides examples of municipal zoning ordinances, urban master plans, and transportation programs that employ innovative alternatives to generic parking requirements. These examples offer "real world" illustrations for some of the alternatives described in this guidebook. Below, we list the cities with ordinances, plans, or programs included in this appendix, along with the key elements of their approaches to parking issues. For each city, we only include excerpts from the ordinances, plans, or programs that apply specifically to these key elements.

Coral Gables, Florida

Coral Gables Zoning Code (1998)
- Parking requirement reductions in the central business district
- Shared parking

Schaumburg, Illinois

Parking Ordinance (1998)
- Transportation demand management
- Bicycle amenities
- Reduced parking requirements if landbanking occurs

West Palm Beach, Florida

Downtown Master Plan (1995)
- Shared parking
- Centralized parking
- Improvements in pedestrian amenities
- Parking re-design

Montgomery County, Maryland

Montgomery County Code Zoning Ordinance (1997)
- Shared parking for mixed-use development
- Parking reductions for transit-oriented or central business district development
- Reduced parking requirements for owners that participate in ridesharing efforts

Long Beach, California

Downtown Parking Management Plan (1993)
- In-lieu parking fees to fund off-site, public parking

Portland, Oregon

Title 33: Planning and Zoning Code (1999)
- Maximum parking limits

CORAL GABLES, FLORIDA
Coral Gables Zoning Code (1998)

♦ *Parking requirement reductions in central business district* ♦
♦ *Shared parking* ♦

Section 13-5.

Commercial and Industrial Classification of Uses and the Central Business District

(d) Central Business District

1. The central business district shall consist of all commercially zoned property bordered by LeJeune Road on the west, Douglas Road on the east, Navarre Avenue on the north, and Almeria Avenue on the south.

2. Any building used for other than residential purposes and located in the City of Coral Gables central business district, as herein defined, shall be exempted from the off-street parking requirements of Article XV of this code, provided, however, that the Floor Area Ratio (F.A.R.) of such buildings shall not exceed 1.25.

3. New buildings containing a Floor Area Ratio (F.A.R.) of more than 1.25 and existing buildings being enlarged to contain a Floor Area Ratio (F.A.R.) of more than 1.25 shall provide off-street parking in accordance with the requirements of Article XIII of this code.

Source: Coral Gables Zoning Code (1998)

Section 13-6.

Minimum Parking Requirements - By Use

Coral Gables Minimum Off-Street Parking Requirements - By Use

Commercial Uses

One parking space required per square feet of gross building area shown below:

100 sq. ft.	200 sq. ft.	250 sq. ft.	300 sq. ft.	350 sq. ft.	400 sq. ft.
Business Schools; Trade Schools; Vocational Schools	Beauty Shops; Clinics; Medical & Dental **outside the Central Business District;** Post Office	Animal Hospitals; Cat Beauty Shops; Civic Clubs; Clinics; Medical & Dental **in the Central Business District;** Community Centers; Dog Beauty Shops; Fraternal Buildings; Libraries; Lodge Buildings; Museums; Private Clubs; Union Halls; Veterinary Clinics	Banks; Business & Profession Offices **outside the Central Business District;** Dry Cleaners; laundries; Savings Institutions; Self-service Laundries	Art Galleries; Artist Studios; Barber Shops; Business and Professional Offices **in the Central Business District;** Credit Unions; Finance Companies; Finance Institutions; Photographers; Photo Galleries; Retail Shops; Sales Shops; Travel Agencies; Trust Companies	Blueprinting; Cleaning Plants; Dyeing Plants; Engraving Plants; Newspaper Plants; Picture Framing; Photocopy; Photostatic Copying; Photo Developing & Printing; Printing Plants; Repair Shops (shoes, clothing, appliances, etc.)

One and one-half (1 1/2) parking spaces required per square feet of gross building floor area shown below:

100 sq. ft.	200 sq. ft.
Outside Central Business District	**In the Central Business District**
Bars; Delicatessens; Beer Gardens; Lunch Counters; Cafes; Restaurants; Cafeterias; Taverns; Cocktail Lounges	Bars; Delicatessens; Beer Gardens; Lunch Counters; Cafes; Restaurants; Cafeterias; Taverns; Cocktail Lounges

Mixed-Uses: Off-street parking for mixed-uses shall be provided in accordance with Section 13-7 C.

Central Business District:

a) For delineation of the Central Business District refer to Section 13-5 (d) 1.

b) Buildings not exceeding a F.A.R. of 1.25 located within the Central Business District and used for other than residential purposes are not required to provide off-street parking (Section 13-5).

Off Street Loading: Off-street loading spaces shall be provided in accordance with Section 13-9.

Source: Coral Gables Zoning Code (1998)

Section 13-14.

Shared Municipal Off-Street Parking

Shared off-street parking shall be permitted to serve two or more individual land uses at municipally owned or operated parking facilities for parking spaces required under this Code for private uses in any C, M or S-Use District subject to the following conditions and restrictions: (3316)

A) A maximum of fifty (50) percent of the required number of parking spaces for one or more off-peak, nighttime or Sunday/holiday uses (activities) may be provided, up to a maximum percent of the municipal facility's available daytime parking capacity as determined in the application process.

B) Unlimited additional parking for one or more off-peak, nighttime or Sunday/holiday uses (activities), in excess of that required by this Code, shall be permitted up to a maximum percent of the municipal facility's available daytime parking capacity as determined in the application process.

C) A recordable agreement for such shared use, in the form of a reciprocal easement acceptable to the Office of the City Attorney shall be filed with the Zoning Administrator and recorded with the City Clerk. The City shall be named in that agreement as one of the parties with right of enforcement.

D) An insurance policy must be obtained and furnished to the City to the satisfaction of the City Manager and City Attorney and such policy shall hold the City harmless from any and all claims or causes of action which may accrue as a result of use of premises or due to an incident or occurrence on the premises.

E) A municipal off-street parking facility required for the purpose of complying with the provisions of this Code shall not include off-street parking similarly required for another private use, unless the Parking, Planning, Public Works and Building and Zoning Directors have reviewed the application and determined that the periods of peak usage of such uses will not be simultaneous or in conflict with each other.

F) A site plan, landscape plan, lighting plan, circulation and traffic plan, peak use analysis and written description of the proposed use of shared facility shall be submitted by the applicant with each request for shared use approval for properties operated but not owned by the City. Only a peak use analysis and written description of the proposed use shall be required for parking facilities owned by the City.

G) Shared required parking must commence within 1/4 mile of the building site. Additional parking, in excess of code requirements, shall not be subject to this distance requirement.

H) All development orders or permits covering such approval shall include the requirement that the order or permit shall be valid only so long as the conditions described in the application or the permit exist.

Source: Coral Gables Zoning Code (1998)

I) Nothing in this section shall be construed to prevent the joint use of municipal off-street parking for two or more uses if the total of such spaces, when used together, will not be less than seventy-five (75) percent of the sum of the requirements of the various individual uses computed separately in accordance with the requirements of this Code.

J) Shared use parking approval described in this section shall not be transferable in any manner.

K) An agreement shall be executed by the parties as to the minimum maintenance requirements which shall be the sole responsibility of applicant and which failure to maintain shall result in immediate revocation of the permit herein granted.

Source: Coral Gables Zoning Code (1998)

SCHAUMBURG, ILLINOIS
Schaumburg Parking Ordinance (1998)

♦ *Transportation demand management* ♦
♦ *Bicycle amenities* ♦
♦ *Reduced parking requirements if landbanking occurs* ♦

§ 154.126 Adjustments to Required Parking

A) Incentives for Development of Transportation Demand Management Programs.

(1) **Purpose.** Transportation demand management is a means of modifying travel and encouraging use of alternative modes of transportation in order to increase the efficiency of the transportation system. In the following cases, the Village Board may grant relief to the parking regulations through the variation procedure in specific cases without meeting the hardship requirements of § 154.45.

(2) **Shared Ride Programs.** These programs decrease parking demand by increasing passengers per vehicle. Examples are employer sponsored vanpooling, carpooling and subscription bus service. For buildings or complexes of a minimum of 30,000 square feet gross floor area, a reduction of up to 20% of required parking may be allowed based on substantial projections of reduction in demand. However, in order to qualify, the petitioner must submit evidence to the satisfaction of the Zoning Board that meets the minimum requirements as stipulated within the following programs.

(3) **Vanpooling or Subscription Bus Service.**

(a) The petitioner is participating or shall participate in an approved carpooling program established under the provisions of § 154.126(A)(4) below and either;

(i) Petitioner will obtain or lease to qualified employees vans, buses or other high passenger capacity vehicles, for the purpose of providing transportation of additional passengers (vanpooling); and/or

(ii) Petitioner will operate or hire vans, buses or other high passenger capacity vehicles to provide exclusive or non-exclusive commuter transportation of employees from residential areas, train stations, and/or other transit terminals.

(b) In furtherance of the petition, the petitioner may show any other activities that will ease the creation of vanpools and carpools. For example:

Source: Schaumburg Parking Ordinance (1998)

(i) Petitioner will develop an alternative work schedule program that shall include staggered work starts and stops, flextime and/or compressed work weeks.

(ii) Petitioner will provide adequate lunch facilities on the site.

(iii) Petitioner will provide preferential parking.

As part of his request for a variation, the petitioner shall show to the satisfaction of the Zoning Board that the actions proposed by the petitioner shall reduce the parking demand by the amount requested.

(4) **Carpooling Programs.** A variation of up to 10% of required parking based on substantiated projections of reduction in demand may be granted for any building or complex of 30,000 square feet of gross floor area which institutes or proposes to institute a carpooling program which meets the following minimum requirements:

(a) Carpooling program must be a specific responsibility of a designated individual or department.

(b) Program must provide an active matching service using manual or automated matching of addresses and providing employees with potential carpools (passive matching alone such as bulletin boards is not acceptable).

(c) Program must endeavor to register all existing and all new employees.

(d) Program must actively promote carpooling to employees through newsletter, posters and other materials.

(5) **Public Transportation Programs.** A reduction of required parking may be granted for any complex within one-quarter mile of any regularly scheduled bus route or commuter train station, with service available during commuting hours, equal to the substantiated projection of use of public transportation by employees of such complex.

(6) **Enforcement of Carpooling and Shared Ride Programs.** Development plans, wherein parking is reduced for shared ride or carpooling programs, shall have an area designated where parking could be constructed equal to the number being reduced. If the programs are not being conducted as testified to the Zoning Board, the owner must construct the parking required to meet the regulations of the village, during the next construction season. The petitioner, in accepting a parking reduction, agrees to construct such additional parking as would otherwise be required under the provisions of the Zoning Ordinance, if the Village Board shall determine after hearing by the Zoning Board that the reasons for granting said reduction no longer exists.

Source: Schaumburg Parking Ordinance (1998)

Prior to the issuance of any occupancy permit, the employer(s) must verify that such ridesharing plans, shown at the time the variation was granted, is being implemented. Such verification must include copies of any contracts, lease agreements, purchase agreements and other documentation to show that such transportation demand management has taken or is about to take place.

Prior to the issuance of an annual business permit, the employer(s) shall submit a report evaluating its ridesharing program. Such report shall include the number of participants involved, the percentage of participants to total work force, number and types of vehicles used, and the percentage of parking spaces normally used by employees.

The commitments agreed to by the petitioner and recommended by the Zoning Board and approved by the Village Board shall be applicable to all successors in title and to all tenants. The petitioner shall record a covenant, the content and form of which must be approved by the Director of Planning or his/her authorized designee, acting in the capacity of Zoning Administrator, which binds all successors in title to the commitments approved and the petitioner shall include in all leases a clause, the content and form of which must be approved by the Director of Planning or his/her authorized designee, acting in capacity of Zoning Administrator, which binds all tenants to this commitment made by the petitioner. (Ord. 163, passed 12-5-61; Am. Ord. 2124, passed 5-25-82; Am. Ord. 92-112, passed 10-13-92; Am. Ord. 95-62, passed 6-13-95; Am. Ord. 97-152, passed 12-9-97).

Source: Schaumburg Parking Ordinance (1998)

§ 154.125 Bicycle Parking Requirements

(A) Required number of spaces. The following uses are required to install bicycle parking:

(1) **Retail Centers.**

Minimum of ten spaces to be located at each main building entrance(s).

(2) **Office and Professional Uses (sq. ft. gross floor area).**

0 - 49,999	One rack or five spaces
50,000 - 99,999	Two racks or ten spaces
100,000 or more	Four racks or 20 spaces

(3) **Restaurants.**

Type A (full service)	One rack or five spaces
Type B (carry out)	One rack or five spaces
Type C (full/carry out)	Two racks or ten spaces

(4) **Cultural, Recreational and Entertainment Uses.**

Health clubs; racquetball; handball and tennis clubs; swim clubs and pools; community centers; and similar uses as determined by the Director of Planning.

Minimum of 30 spaces.

(5) Bowling alleys; skating rinks; movie theaters; similar uses as determined by the Director of Planning or his/her authorized designee.

To be determined on a case by case basis by the Director of Planning or his/her authorized designee, acting in the capacity of Zoning Administrator.

(B) **Location.** Bike racks shall be located such that they are highly visible from the street and/or building entrance from where bicyclists approach. Bicycle parking areas shall be separated from motor vehicle parking areas.

(C) **Design Criteria and Dimensions.**

(1) Bicycle racks must be capable of locking the bicycle and of supporting the bicycle in an upright position.

(2) A hard surfaced parking area is required. Racks must be securely anchored to supporting surface.

(3) Installation of bike racks shall conform with the requirements set forth by the bike rack manufacturer with a rectangular space no less than two and one-half feet wide by six feet long per bicycle unless a locker or permanent device to stand the bicycle on end is provided.

Source: Schaumburg Parking Ordinance (1998)

(4) Bicycle rack shall be installed with adequate space beside the parked bicycle so that a bicyclist will be able to reach and operate the locking mechanism.

(D) **Collective Provisions.** Off-street bicycle rack facilities for separate uses may be provided collectively if the total number of spaces provided collectively is not less than the sum of the separate requirements for each such use and provided that all regulations governing location of accessory parking spaces in relation to the use served are adhered to. (Ord. 163, passed 12-5-61; Am. Ord. 1992, passed 5-26-81; Am. Ord. 92-112, passed 10-13-92; Am. Ord. 95-62, passed 6-13-95).

Source: Schaumburg Parking Ordinance (1998)

§ 154.123 Schedule of Parking Requirements

Use	Required Spaces
(C) **Retail Uses.**	5.0 per 1,000 sq. ft. NFA for 0-1,000,000 sq. ft. NFA
	4.5 per 1,000 sq. ft. NFA for 1,000,001 1,500,000 sq. ft NFA
	4.0 per 1,000 sq. ft. NFA for 1,500,001 or more sq. ft. NFA per building
(D) **Service Uses**.	
	5.0 per 1,000 sq. ft. NFA for 0-1,000,000 sq. ft. NFA per building
	4.5 per 1,000 sq. ft. NFA for 1,000,001 1,500,000 sq. ft NFA per building
	4.0 per 1,000 sq. ft. NFA for 1,500,001 or more sq. ft. NFA per building

Reductions in parking requirements may be granted for retail and service uses if the difference between the above rate and the reduced rate is landbanked.[10]

Source: Schaumburg Parking Ordinance (1998)

[10] Landbanking allows reductions in minimum parking requirements for owners or developers who: 1) show that the minimum requirements exceed parking demand, 2) substitute "green space" (i.e., land left undeveloped) for the avoided parking spaces, and 3) develop the property so that additional parking could be constructed in the event of a parking shortage.

WEST PALM BEACH, FLORIDA
Downtown Master Plan (1995)

- *Shared parking*
- *Centralized parking*
- *Improvements in pedestrian amenities*
- *Parking re-design (i.e., parking concealed behind attractive building facades)*

2. Transportation Strategy

Parking

A large portion of land area in Downtown West Palm Beach is devoted to parking facilities, both surface lots and garages. When facing the street as they often do, these interrupt the continuity of building frontage which makes a street pedestrian friendly.

Street-front parking lots and garages contribute in large measure to the perception that walking in the downtown area is unpleasant. During the charrette, several participants expressed surprise that distances between destinations were short, and they mentioned that they often drive between Downtown destinations. Improving pedestrian continuity on Downtown streets would decrease short trip automobile use and iterative parking, increase transit viability, and ultimately require less parking.

The ultimate goal for parking in Downtown is a centrally managed system of strategically located multiple parking facilities concealed behind habitable building facades facing streets. The Master Plan recommends the following:

1. Institute a single system to manage parking Downtown as described below;
2. Modify off-street parking requirements to encourage shared parking in a managed system, reducing ratios as follows:
   - 2 spaces per 1,000 square feet of commercial space;
   - 1 space per multi-family residential unit;
   - 2 spaces per single-family residential unit;
   - none required for residential development on lots less than 55 feet wide;
   - allow on-street parking to be included in parking requirements of residential units;
3. Allow substitution of off-street parking requirements with a one-time payment to a central system parking fund as per existing ordinance;
4. Institute a plan for strategically located parking garages to replace surface lots as the need evolves;

Source: West Palm Beach Downtown Master Plan (1995)

5. Require all existing surface parking lots to be landscaped within a year with a street-front hedge 3′ 6″ in height at the sidewalk and shade trees at every third parking space;

6. Discourage replacement of buildings with surface parking lots.

Overall in Downtown West Palm Beach, there is currently an oversupply of parking spaces. There are about 12,000 spaces, and 200 - 300 will be added with the restoration of on-street parking to Dixie Highway and Olive Avenue.

Much of the parking supply in Downtown West Palm Beach is in public lots that are shared by a variety of users, including Downtown employees, shoppers and office visitors. These lots are scattered throughout Downtown, usually close to major travel attractions (for example, City Hall). This pattern of numerous, smaller public lots and garages is highly desirable for two reasons: 1) Downtown vitality, and 2) traffic access.

Small, scattered public parking lots promote Downtown vitality by encouraging a "park once" travel pattern on the part of motorists. With numerous scattered lots, drivers don't expect to drive directly to their final destination and park in an attached garage or lot (as in a suburban office park) and repeat the process for every trip throughout the day (for example, for lunch, shopping, bank, and so forth). Rather, with scattered public parking, drivers expect to "park once" for the entire duration of their stay Downtown, and access multiple destinations during the day as a pedestrian. Combining multiple trip purposes in a "park once" environment is further encouraged when the walking experience between parking and ultimate destination is safe, comfortable and interesting. The small-scale grid of Downtown streets present, a large number of possible routings between parking lot and ultimate destination, and pedestrians can continually vary their routes.

Numerous scattered lots are also preferable for traffic operations. Traffic generated by multiple small lots tends to have a gradual rate of entry/discharge, and is rapidly dispersed to the surrounding street network. This diffusion of traffic contrasts sharply with the traffic "hot spots" that are created at the access points of major attached parking structures. At such concentration of parking, the number of spaces and the high entry/exit rate (due to single purpose occupants) often creates problem intersections, frequently requiring street widening and signalization to accommodate garage operations.

Existing parking and future parking additions to Downtown should be treated as a single system. To do so, it is not necessary to combine operation or ownership of the parking supply into a single entity. Rather, what is required is to assess parking distribution for all of Downtown as a single system, considering all sources of supply and need. Additional parking (whether privately or publicly supplied) should be directed in a manner that yields the most benefit to Downtown as a whole. A longer term parking policy should therefore focus on several major directions:

Source: West Palm Beach Downtown Master Plan (1995)

1. Better use of the existing supply of off-street parking, through directional signs, public information, leasing and other organizational measures;
2. Strategically expanding existing parking locations;
3. Meeting needs of new Downtown tenants (for example, the County Judicial Building) through a combined use of existing parking facilities, carefully targeted expansion of existing lots and construction of new public lots.

A major objective of the parking program should be to encourage visitors to circulate as pedestrians through Downtown commercial streets, such as Clematis Street, on their way to and from parking.

Source: West Palm Beach Downtown Master Plan (1995)

MONTGOMERGY COUNTY, MARYLAND
Montgomery County Code Zoning Ordinance (1997)

- *Shared parking for mixed-use development*
- *Parking reductions for transit-oriented or central business district development*
- *Reduced parking requirements for owners that participate in ridesharing efforts*

Sec. 59-E-3.1. Mixed Uses.

(a) When any land or building is under the same ownership or under a joint use agreement and is used for 2 or more purposes, the number of parking spaces is computed by multiplying the minimum amount of parking normally required for each land use by the 5 time periods shown. The number of parking spaces required is determined by totaling the resulting number in each column; the column total that generates the highest number of parking spaces then becomes the parking requirement.

	Weekday		*Weekend*		*Nighttime*
	Daytime (6 am-6pm)	Evening (6pm-midnight)	Daytime (6am-6pm)	Evening (6am-midnight)	(Midnight-6am)
Office/Industrial	100%	10%	10%	5%	5%
General Retail	60%	90%	100%	70%	5%
Hotel, Motel, Inn	75%	100%	75%	100%	75%
Restaurant	50%	100%	100%	100%	10%
Indoor or Legitimate Theatre, Commercial Recreational Establishment	40%	100%	80%	100%	10%
Meeting Center	50%[1]	100%	100%	100%	10%
Multi-family dwellings in Commercial Districts	50%	100%	100%	100%	100%
Personal Living Quarters	50%	100%	100%	100%	100%
All Other Uses	100%	100%	100%	100%	100%

Source: Montgomery County Code Zoning Ordinance (1997)

Sec. 59-E-3.2. Computing Parking Requirements for Office Development.

Base parking requirements for offices shall be determined in accordance with a property's Office Parking Policy Area designation and the proximity of the property to a Metrorail station. The Office parking Policy Areas are identified on the Adopted Office Parking Policy Area Map which was approved by the District Council on June 28, 1984, and is maintained by the Planning Board. A copy of this map is reproduced at the end of this section. The base parking requirements within individual Office Parking Policy Areas vary according to the proximity of a property to a Metrorail station which is defined in subsection 59-E-3.21 which follows. The following table establishes the base office parking requirements for each policy area:

Base Requirements for Office Parking

	Minimum Parking Requirements (Spaces/1000 GSF)			
Proximity to Metro Station	Southern Area	South Central Area	Northern Central Area	Northern Area
Less than 800'	1.9	2.3	2.6	N/A
800'-1600'	2.1	2.4	2.7	N/A
More than 1600'	2.4	2.7	2.9	3.0

N/A = Not Applicable

69-E-3.21. Proximity to a Metrorail Station.

Proximity to the METRO station is defined as the straight-line distance between a main pedestrian entrance of a building for which the parking reduction is to be granted and a station entrance controlled by the W.M.A.T.A. This station entrance is defined further as the street-level entrance of any escalator or the gate or similar barrier of any station entrance which has no escalator.

An existing or planned metrorail station may be used as a basis for the office requirement if:

(a) It is currently in use as part of an operating transit line; or

(b) the director/planning board has received a certified letter from the W.M.A.T.A. stating that a construction contract has been signed for any portion of the construction phase which is located on the same transit line immediately south of the phase of construction in which the proposed building or buildings will be located.

(Legislative History: Ord. No. 10-32, ' 11; Ord. No. 12-1, ' 1.)

. . .

Source: Montgomery County Code Zoning Ordinance (1997)

59-E-3.32. Credits for Specified Commercial Uses.

(a) For general retail uses, regional shopping centers, restaurants, theatres, furniture stores and auxiliary retail uses, the director may approve a 15 percent reduction in the standard parking requirements provided in section 59-E-3.7. This reduction is allowed if the entrance of the proposed use is located within 1,600 feet of a metrorail station entrance as defined in section 59-E-3.21.

(b) For regional shopping centers, off-site parking spaces may be allowed under the following circumstances:

(1) The off-site parking facility shall be used only by employees of the regional shopping center during seasonal peak periods to help satisfy peak parking requirements;

(2) The off-site parking facility will contain no more than 20 percent of the total parking spaces provided for the regional shopping center; and

(3) The director/planning board finds that there are appropriate contractual or lease agreements guaranteeing the continued availability, for specified peak shopping periods, of such off-site parking spaces for the regional shopping center. In addition, the director/planning board must find that appropriate administrative mechanisms exist to ensure that employees will be required to use the off-site parking facility during specified peak shopping periods.

59-E-3.33. Credits for Specified Residential Uses.

(a) For multiple-family dwelling units, townhouses, fourplex units, and individual living units in personal living quarters, the director/planning board may approve a 10 percent reduction in the standard parking requirement provided in section 59-E-3.7, if such units are located within a central business district or transit station development area. A 5 percent reduction is also allowed where such units are located within 1,600 feet of a metrorail station entrance as defined in section 59-E-3.21. This credit does not apply to parking for housing for elderly or handicapped persons or a life care facility that is constructed in accordance with the credit provisions enumerated in Paragraph (b), below.

(b) For housing and related facilities for elderly or handicapped persons, the Director/Planning Board may approve reductions in the standard parking requirements contained in Section 59-E-3.7. Any reductions granted must be in accordance with the following parking credit schedule, which must be applied sequentially, with succeeding percentages applying to the balance:

Source: Montgomery County Code Zoning Ordinance (1997)

(1)	Located within 1,000 feet of Metrorail station entrance:	5%
(2)	Provision of private shuttle bus service for a minimum of 7 years, with a schedule assured by a special exception granted in accordance with Section 59-G-2.35 or 59-G-2.35.1, a site plan enforcement agreement in accordance with Section 59-D-3.3 or other long-term agreement. Continued shuttle bus service after that period is subject to the parking needs of the specific project, as determined by the Board of Appeals, Planning Board of Director:	10%
(3)	Provision of units that are required to be at or below the price levels for moderately priced dwelling units specified in accordance with Chapter 25A of this Code:	up to 20%[1]
(4)	Facilities or programs for assisted living, including a dining facility large enough to serve meals to at least 50 percent of the residents, that are assured by a special exception granted in accordance with Section 59-G-2.35 or 59-G-2.35.1 or by a similar long-term agreement:	20%

[1] The percentage reduction must be no greater than the percentage of price-controlled dwelling units in the facility.

Any credit granted for a life care facility approved in accordance with Section 59-G-2.35.1 applies to the computation of the requirement for the dwelling units only and not to the requirement for the nursing home.

(Legislative History: Ord No. 10-32, ‘ 11; Ord. No. 10-63, ‘ 1; Ord. No. 11-72, ‘ 10; Ord. No. 11-73, ‘ 11; Ord. No. 12-49, ‘ 1; Ord. No. 13-46, ‘ 7.)

Source: Montgomery County Code Zoning Ordinance (1997)

Sec. 59-E-3.3. Credits for Specific Uses.

Percentage reductions in the required number of parking spaces, as specified in this article, may be approved by the directory/planning board and must be enforced by the director. Where multiple credits are granted, each credit allowance is applied only on the marginal parking requirements. After an initial percentage reduction is approved for one credit, an additional percentage reduction for each successive credit applies to the balance of the parking supply required.

59-e-3.31. Credits for General Office Building

Parking credits are allowed for office developments that actively participate in the county share-a-ride program and/or provide private incentives for ride-sharing. A schedule of parking credits for offices, based on specific criteria for reductions and penalties for noncompliance, is presented in the following schedule:

(a) Sites within share-a-ride districts. Share-a-ride districts are defined in chapter 42A of the Montgomery County Code.

(1) A 15 percent reduction for participation in share-a-ride's continuous, personalized ridesharing assistance program may be approved if the owner of the development submits a written agreement, with the parking facility plan, that stipulates the following conditions:

a. The owner or lessees with more than 25 employees designate a person who shall promote the program to employees in accordance with established county procedures for the share-a-ride program.

b. The owner or lessees shall reserve a sufficient number of conveniently located parking spaces to accommodate all employee carpools and vanpools.

c. The owner shall make an annual payment to the ridesharing account of the mass transit facilities fund for basic share-a-ride services in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

d. The owner shall certify semi-annually to the director that the above requirements are being satisfied.

e. In the event of noncompliance, the director shall require the owner to pay an annual penalty payment to the ridesharing account for supplementary share-a-ride services, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

(2) A percentage reduction between one and 15 percent may be approved for private incentives (e.g., in-house carpool promotion/matching system, private shuttle bus, van lease or purchase, reserved carpool spaces, and transit pass discount programs) if the owner of the development submits a written agreement, with the parking facility plan, that stipulates the following conditions:

Source: Montgomery County Code Zoning Ordinance (1997)

a. The owner shall, as a contingency, set aside land for a parking facility or allow for future construction or expansion of a structured parking facility, sufficient to provide additional parking spaces equal in number to the reduction granted.

b. The owner shall make an annual payment to the ridesharing fund for monitoring and enforcement, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

c. The owner shall certify to the director semi-annually that the above requirements are satisfied.

d. In the event of noncompliance, the director shall require the owner to satisfy at least one of the following penalties:

1. Construction of additional parking spaces, equal in number to the spaces originally reduced.

2. Pay an annual penalty payment to the ridesharing account for basic or supplementary share-a-ride services, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

3. Suspension of occupancy permit.

The requirements and penalties of Section (a)(2)a., (a)(2)d.1., and (a)(2)d.3, above are not applicable to mixed use projects in the TS-M zone located within 1000 feet of a Metrorail station where such requirements and penalties may preclude fulfillment of master or sector plan objectives for the provision of affordable housing as determined by the Montgomery County Planning Board.

(b) Sites within a share-a-ride outreach area. share-a-ride outreach areas are defined in chapter 42A of the Montgomery County Code.

(1) A 15 percent reduction for participation in share-a-ride's continuous, personalized ridesharing assistance program may be approved if the owner of the development submits a written agreement, with the parking facility plan, that stipulates the following conditions:

a. The owner of lessees with more than 25 employees designate a person who shall promote the program with employees in accordance with established county procedures for the share-a-ride program.

b. The owner or lessees shall reserve a sufficient number of conveniently located parking spaces to accommodate all employee carpools and vanpools.

c. The owner shall make an annual payment to the ridesharing account for basic share-a-ride services in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

Source: Montgomery County Code Zoning Ordinance (1997)

d. The owner shall certify semi-annually to the director that the above requirements are being satisfied.

e. In the event on noncompliance, the director shall require the owner to pay an annual penalty payment to the ridesharing account for supplementary share-a-ride services, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

(2) A percentage reduction between one and 15 percent may be approved for private incentives (e.g., in-house carpool promotion/matching system, private shuttle bus, van lease or purchase, reserved carpool spaces, and transit pass discount programs) if the owner of the development submits a written agreement, with the parking facility plan, that stipulates the following conditions:

a. The owner shall, as a contingency, set aside land for a parking facility or allow for future construction or expansion of an structures parking facility, large enough to provide additional parking spaces equal in number to the reduction granted.

b. The owner shall make an annual payment to the ridesharing account for monitoring and enforcement, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

c. The owner shall certify to the director semi-annually that the above requirements are satisfied.

d. In the event of noncompliance, the director shall require the owner to satisfy at least one of the following penalties:

1. Construction of additional parking spaces, equal in number to the spaces originally reduced.

2. Pay an annual penalty payment to the ridesharing account for basic or supplementary share-a-ride services, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

3. Suspension of occupancy permit.

(c) Sites in remaining areas (locations where share-a-ride services are unavailable):

(1) A percentage reduction between one and 15 percent may be approved for private incentives (e.g., in-house carpool promotion/matching system, private shuttle bus, van lease or purchase, reserved carpool spaces, and transit pass discount programs) if the owner of the development submits a written agreement with the parking facility plan that stipulates the following conditions:

Source: Montgomery County Code Zoning Ordinance (1997)

a. The owner, shall, as a contingency, set aside land for a parking facility or allow for future construction or expansion of a structured parking facility, large enough to provide additional parking spaces equal in number to the reduction granted.

b. The owner shall make an annual payment to the ridesharing account for monitoring and enforcement, in accordance with the payment schedule of chapter 42A of the Montgomery County Code.

c. The owner shall certify to the director semi-annually that the above requirements are satisfied.

d. In the event of noncompliance, the director shall require the owner to satisfy at least one of the following penalties:

1. Construction of additional parking spaces, equal in number to the spaces originally reduced.

2. If located within a parking lot district, satisfy condition (1) above or pay the annual ad valorem tax as specified in chapter 60 of the Montgomery County Code.

3. Suspension of occupancy permit.

(d) For any office development eligible for parking reductions under this section, the percent reductions are applied to the development's base parking requirement, as described in section 59-E-3.2 which is concerned with computing the parking requirements for office development.

Source: Montgomery County Code Zoning Ordinance (1997)

LONG BEACH, CALIFORNIA
Downtown Parking Management Plan (1993)

♦ *In-lieu parking fees to fund off-site, public parking* ♦

Policy 4

In-Lieu Parking Fees

Limited availability of land, small lot sizes and existing buildings make providing required on- or off-site parking very difficult for small-scale new construction or rehabilitation of existing buildings. In addition, financial feasibility often prohibits individual businesses from developing their own parking.

To assist small-scale new developments and rehabilitation of existing buildings within the District, the Agency shall not require parking be provided by the project on-site. In exchange for the payment of an in-lieu fee, the Agency will provide required off-site parking on behalf of eligible developments seeking shared-use parking.

The following types of developments are eligible for Agency provided, off-site parking to meet shared-use parking requirements upon payment of in-lieu fees:

- Non-residential new construction on lots of less than 22,500 square feet in size.
- Additions to existing buildings, rehabilitation of existing buildings, or changes in use or occupancy in existing buildings.
- Designated City Historic Landmark buildings.
- Existing buildings desiring access to additional parking resources but not required to provide those resources by the Zoning Code.

All off-site parking provided by the Agency will be non-exclusive, shared-use parking from the pool of publicly available parking within the District. Participants using such parking will not be assigned or guaranteed use of specific spaces or facilities. The Agency will, however, be responsible to insure that sufficient parking exists within the District to accommodate the demand generated by participants paying in-lieu fees to the Agency for use of off-site parking.

Each development using shared-use parking in-lieu of constructing parking creates a demand for spaces that must be satisfied from the pool of available public parking. Since the availability of public parking is limited, and the Agency will be responsible for insuring that sufficient parking exists, the Agency shall require that each project that uses Agency-provided public parking help pay a portion of capital cost and operational costs needed to develop and operate public parking resources.

Source: Downtown Parking Management Plan (1993)

Eligible projects desiring the Agency to provide shared-use parking off-site in-lieu of providing on-site parking, shall pay to the Agency an in-lieu fee for each space required but not provided. The fee shall be due at the time a building permit or business license is issued. This payment shall be deposited in an Agency account to be used to cover capital costs of providing additional shared-use public parking resources. The in-lieu fee shall be set by the Redevelopment Agency on an annual basis and may be paid either in a lump sum or on an installment payment basis. To encourage the rehabilitation of City Historic Landmark structures, the Agency may postpone or waive in-lieu fees if it can be demonstrated that such fees would impair the feasibility of the rehabilitation.

Along with the payment of an in-lieu fee to cover a portion of capital costs, participants using Agency provided, off-site parking facilities shall pay a share of the operational costs. These costs may include the user's payment of full-market rates for the use of parking, charges to participating businesses for the privilege of validating short-term parking, and monthly parking rates for the use of long-term or employee parking.

Projects eligible for Agency-provided off-site parking are not required to choose to use Agency provided off-site parking to meet their parking requirements; they may instead choose to provide their own private-parking or provide shared-use parking to meet the parking requirements.

Source: Downtown Parking Management Plan (1993)

PORTLAND, OREGON
Title 33: Planning and Zoning Code (1999)

♦ *Maximum parking limits* ♦

§ 33.510.263 Parking in the Core Area

6. Maximum Ratios

Parking is limited to the maximum ratios in Table 510-2. Where there is more than one use, the amount of parking allowed is calculated based on the net building area of each use.

Table 510-2

IN THE CORE AREA GROWTH PARKING: MAXIMUM NUMBER OF PARKING SPACES PER 1,000 SQUARE FEET OF NET BUILDING AREA

	District/Sector (See Map 510-8):				
Use	**Downtown 2, 3**	**Downtown 4**	**Downtown 1, 5; University District**	**River District 5**	**River District 3, 4; Downtown 6**
Office	0.7	0.8	1.0	1.5	2.0
Retail Sales and Service, except theaters, hotels, motels	1.0	1.0	1.0	1.5	2.0
Medical Centers	1.5	1.5	1.5	1.5	2.0
Schools, Colleges	1.0	1.0	1.0	1.5	2.0
Manufacturing and Production, Warehouse and Freight Movement, Wholesale Sales, Industrial Service			0.7		
Community Service, Religious Institutions, Theaters, Other Uses			0.25		

Source: Title 33: Planning and Zoning Code (1999)

Parking Alternatives:

Making Way for Urban Infill and Brownfields Redevelopment

Urban and Economic Development Division
U.S. Environmental Protection Agency
Washington, DC 20460

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