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Zoning Best Practices Review

I. INTRODUCTION

This memorandum presents a summary of best practices that have emerged out of recent efforts to re-evaluate traditional minimum zoning requirements for on-site parking. These practices fall roughly into two categories:

- Broad strategies that represent major policy shifts and regulatory changes; and
- Specific strategies that affect finer changes within existing regulatory frameworks.

Following this are two sets of implementation examples, beginning with "leading cities" that have made aggressive changes to their zoning codes, followed by a longer series of cities that have implemented key strategies worth noting.

A. Context

Many cities have recently undertaken to review and update their zoning regulations related to minimum parking requirements for new development. Most of the regulations had changed little since first being adopted in the middle of the last century – the height of enthusiasm for the future of personal automobile travel. The most common reasons for revisiting these regulations are:

- Concerns over their contribution to congestion and traffic volumes;
- Desires to create a Shared Parking/Park Once environment in which the bulk of parking activity is captured within a centralized, shared public inventory;
- Desires to improve pedestrian and bicycle networks by reducing the number of curb-cuts in densely populated districts;
- The regulation's impact on historic downtown districts, as well as efforts to revitalize these districts; and
- Interest in encouraging "smart growth" development patterns.

More recently, innovations in on-street management have called into question the need for requiring on-site parking at all. Particularly, the great deal of promise attributed to demand-responsive pricing of curb spaces and ever-improving residential permit parking practices may have profound implications for the future of zoning requirements. Many planners are beginning to ask the existential question – if new management practices can ensure availability, even on busy commercial blocks and in near-downtown residential neighborhoods, are minimum off-street requirements necessary?

Answering that question should be preceded by a look at the origins and original intentions of minimum parking requirements.

B. Background - When did Parking Requirements First Appear, and Why?

In 1923, Columbus, Ohio adopted the first off-street parking requirement, requiring one parking space for each apartment in new apartment buildings. In 1939, Fresno, CA, became the first city to adopt minimum parking requirements for any use besides housing, adopting them for hotels and hospitals. Why were they adopted? The City of Pasadena's zoning code declares that the purpose of minimum parking requirements is to "alleviate or prevent traffic congestion and shortages of curbside parking spaces." [1]

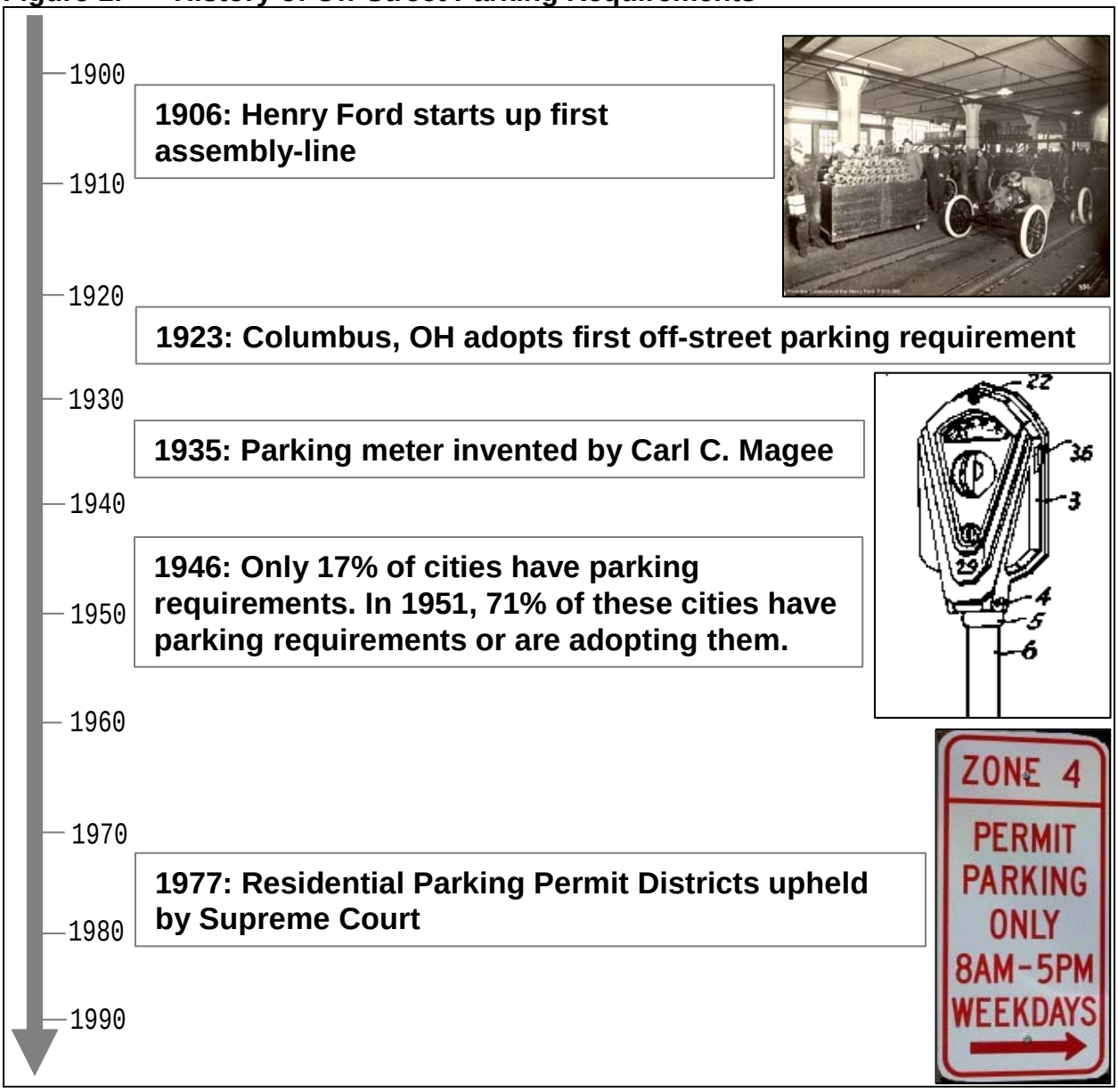
Why was it believed that setting minimum parking requirements would alleviate traffic congestion? By the 1920s, the new problem of "spill-over parking" had arrived in many downtowns. Automobiles filled up all of the curb parking in front of shops and apartments, and any nearby private parking, and then sometimes spilled over into nearby neighborhoods, crowding the streets there.

In search of free parking near their destination, motorists often took to circling about, waiting for a space to open up. Instead of searching for parking, many motorists simply double-parked, clogging traffic lanes and greatly increasing congestion. The essential concept of minimum parking requirements was that if each destination provided ample parking, with enough spaces available so that even when parking was free there would be plenty of room, then there would be plenty of spaces at the curb. Motorists would no longer need to circle the block looking for a space, and so traffic congestion would be lessened.

Most cities did not explicitly require free parking, but did set minimum parking requirements that were simply high enough that it made sense for most destinations to offer the parking for free. This practice has become normalized to the extent that today parking is free for 99% of trips made within the United States.[2]

[1] City of Pasadena Zoning Code, Chapter 17.46.010.
[2] Shoup, Donald “The Trouble with Minimum Parking Requirements”, *Transportation Research*, 1999.

Figure 1: History of Off-Street Parking Requirements



C. Background – The Results

What were the consequences? Minimum parking requirements have become standard practices across the country, implemented by large cities and small towns. And while localized congestion results are mixed, regional congestion has grown steadily into a national epidemic. "In recent years, millions of U.S. metropolitan area residents have come to regard traffic congestion as their most serious local and even regional problem – with good reason", states Anthony Downs in his book "Still Stuck in Traffic."[3]

Among 75 metropolitan areas studied by the Texas Transportation Institute:

[3] Brookings Institution Press, 2004

- The average percentage of daily traffic subjected to congestion nearly doubled between 1982 and 1999, rising from 17 percent to 33;
- The average length of congested periods increased from 2-3 hours to 5-6 hours over the same period; and
- Congestion "wasted" an estimated 67.5 billion dollars during 2000, based on lost time and fuel consumption.[4]

While minimum parking requirements can effectively eliminate parking spillover by mandating ample supply along with the best price (free) for the best location (on-site), these spaces clearly do not eliminate traffic and congestion. Hawley Simpson, who conducted the first research on cruising for parking (and who later became president of the Institute of Traffic Engineers), predicted the problems that later arose from free off-street parking. "Rather than assisting in solving the street traffic problem" he said, "it may very probably have the opposite effect by inducing a large amount of unnecessary vehicle usage."[5]

Minimum parking requirements worsen traffic congestion through a three step process:

1. Minimum parking requirements are set - frequently high enough to provide more than enough parking even when parking is free, even at isolated suburban locations with little or no transit.
2. Parking is then provided for free at most destinations, and its costs hidden.
3. Bundling the cost of parking into higher prices for everything else skews travel choices toward cars and away from public transit, cycling, and walking.

It may seem like a neat trick to induce a steady stream of local traffic to quickly and easily disappear into off-street lots and garages. However the congestion that is avoided locally has simply shifted to the regional road system. By increasing exponentially the quantity of parked cars that can be absorbed in each district, minimum parking requirements have swelled the volume of vehicles accessing regional roadways.

Today, very few regions can, or are willing to, expand roadway capacity. Where they have, new capacity has tended to be absorbed rather quickly with improved travel conditions inducing extra trips.

So back to the existential question – if minimum parking requirements have contributed to worsening regional congestion, while producing spotty local traffic improvements, and on-street management can effectively prevent spillover, are minimum parking requirement still necessary?

Some of the most promising responses to this question are summarized below.

[4] Downs, 2004.
[5] Shoup,. Page 280.

II. ZONING REFORM BEST PRACTICES

A. Broad Strategies

1. Reducing/"Tailoring" Minimum Requirements

Most minimum parking requirements levied by local jurisdictions take into account only two variables: land use and the size of development. They are typically expressed in terms of the number of spaces required per 1,000 square feet of a particular land use, or per residential unit.

In reality, however, parking demand is affected by many more variables, such as:

- The geographic context of a development – encompassing factors such as the quality of the local pedestrian environment, the number of other land uses within walking distance, and the availability and quality of transit;
- The demographic characteristics of residents; and
- Demand management programs such as parking pricing and car-sharing.

Furthermore, vehicle ownership levels (and thus residential parking demand) typically vary considerably between different parts of a city. Local jurisdictions can "tailor" their zoning codes to take these variations into account, based on the following factors:

- Unit Size – Smaller households tend to own fewer vehicles;
- Affordable Housing – There is a strong link between vehicle ownership and income, with less parking demand generated by housing targeted to low-income households;
- Senior Housing – Senior citizens tend to own fewer vehicles than younger adults, meaning that parking requirements can be reduced for senior housing facilities, including independent living as well as assisted living and convalescent care facilities;
- Rental Units – Households that rent their homes typically own fewer vehicles, on average, than owner-occupiers; and
- Transit Corridors/Downtown – Parking demand is lower in areas that are well served by transit, and in mixed-use downtown zoness that offer employment and services within walking distance.

a. Examples

- Milwaukee, WI has no minimum parking requirements for any downtown land use except high-density housing, where the ratio is only two spaces per three units.
- Seattle, WA allows reductions in minimum parking requirements based on several factors, including:
    - Affordable housing – Reduction to 0.5-1.0 spaces per unit, depending on income, location and size of unit;
    - Senior housing and housing for people with disabilities;
    - Dedicated on-site car-sharing parking in multi-family developments;
    - Location – No parking minimums in downtown, reductions in mixed-use, dense neighborhoods; and
    - Transportation Demand Management practices.

- Pasadena, CA has reduced its minimum parking requirements for new development in Transit Oriented Developments and within its Central District.

2. Eliminating Minimum Requirements

The most obvious advantage of eliminating, versus reducing or tailoring, minimum parking requirements is that it provides the opportunity for regulators to avoid the "guessing game" of demand projections. While tailoring requirements based on contextual qualifiers can be effective in reducing the risk of over-estimating parking demand, it does not preclude over-estimating, and it can make zoning regulations even more labyrinthine than they have already become.

This new form of tailoring has been preceded by efforts to capture the variety of unique trip-generating qualities among the innumerable uses found in most cities. Cataloguing the innumerable has lead to some comically detailed use-requirement regulations. Figure 2 provides a few examples.

Figure 2: Unique Parking Requirements

Land Use	Parking Requirement
Adult Entertainment	1 space per patron, plus 1 space per employee on the largest work shift
Barber shop	2 spaces per barber
Beauty shop	3 spaces per beautician
Bicycle repair	3 spaces per 1,000 SF
Heating Supply	3.33 spaces per 1,000 SF of sales and office area, plus 2 spaces per 3 employees on the maximum shift, plus 1 space for every vehicle customarily used in operation of the use or stored on the premises.
Mausoleum	10 spaces per maximum number of internments in a one-hour period
Nunnery	1 space per 10 nuns
Rectory	3 spaces per 4 clergymen
Swimming Pool	1 space per 2,500 gallons of water
Sources: Planning Advisory Service (1964, 1971, and 1991); Witheford and Kanaan (1973)	

Many cities are deciding that these requirements are simply no longer needed. Many have concluded that developers do a better job anticipating the parking market at their developments than zoning codes ever could. Developer projections are made on a site- and context-specific basis for each project, representing a much finer estimating instrument than setting zoning formulae.

The developer has a vested interest in getting this right. Over-anticipating demand, especially in areas with high land values, would add significant unnecessary cost to a project. Under-parking a project, however, can reduce its marketability.

Furthermore, many cities are increasingly confident that curb pricing and effective residential permit program regulations can prevent spillover were developers to under-park their projects. Effective employment of these techniques can render existing minimum parking requirements unnecessary, offering minimal rewards at the risk of deterring development in areas where land is expensive, or at sites where parking provision is impractical (oddly configured dimensions) or impossible (historic re-use).

a. Examples

Several cities across the United States, including the ones provided below, have completely removed minimum parking requirements in downtown or Central Business District areas.

- *For commercial development*: Boston, MA; Columbus, OH; Coral Gables, FL; Eugene, OR; Fort Myers, FL; Fort Pierce, FL; Los Angeles, CA; Milwaukee, WI; Olympia, WA; Philadelphia, PA; Portland, OR; San Diego, CA; Seattle, WA; Spokane, WA; Stuart, FL.
- *For multi-family residential (1-2 bedroom)*: Eugene, OR; Fort Myers, FL; Fort Pierce, FL; Los Angeles, CA; Milwaukee, WI; Olympia, WA; Portland, OR; San Diego, CA; San Francisco, CA; Seattle, WA; Spokane, WA; Stuart, FL.

3. Establishing Maximum Thresholds

In contrast to minimum parking requirements, parking maximums restrict the total number of spaces that can be constructed. For this reason, this approach can be used to actively promote alternatives to driving. Reasons for setting maximum requirements typically include a desire to:

- Restrict vehicular traffic generated by new development;
- Promote alternatives to the private automobile;
- Maximize land area for other uses; and
- Preserve open space and/or limit storm water runoff.

Parking maximums can be introduced anywhere where there are or could be measures in place to combat overspill. While the policy is most likely to be appropriate in transit corridors, downtown and areas with high levels of traffic congestion, it can be useful in any district that wants to limit vehicular traffic or the amount of land devoted to parking.

Maximum parking requirements generally alleviate traffic congestion and reduce auto use through a three step process:

1. Maximum parking requirements are set low enough to so that if parking at a location is given away for free, there will be a shortage.
2. Parking at these locations is then provided to the people who use it for a price that covers at least part of its costs, so that parking's cost is revealed. Alternately, employers and other parking providers need to provide strong subsidies for alternative transportation (such as free transit passes or a parking cash out program), to avoid a shortage.
3. Removing parking subsidies (or providing equally strong subsidies for other modes) then brings travel choices back into balance, toward public transit, cycling and walking.

As Professor Donald Shoup, parking economics expert and planning professor at University of California, Los Angeles, describes the situation:

> *If we want to reduce traffic congestion, energy consumption, and air pollution, the simplest and most productive single reform of American zoning would be to declare that all the existing off-street parking requirements are maximums rather than minimums, without changing any of the numbers, just as the London Borough of Kensington and Chelsea did in 1995*.[6]

a. Examples

- Portland, OR, has adopted parking maximums. In large parts of the city, the minimums have been wholly converted to maximums. In other parts, minimums remain but are accompanied by maximums to limit the amount of parking a developer can provide.
- Parking maximums are in force in all or a portion of many other cities across the United States, including: San Francisco, CA; Seattle, WA; Cambridge, MA; Gresham, OR; Helena, MT; Jefferson County (Louisvillle), KY; Pittsburgh, PA; Redmond, WA; and San Antonio, TX.

B. Specific Strategies

Other strategies, which represent a finer-level of regulation, have also been implemented with many positive results in many cities.

1. Establishing In-Lieu Fees

Providing a fee alternative to meeting on-site requirements is gaining favor in many cities as a means of:

- reducing the overall number of parking spaces;
- reducing the number of parking sites and pedestrian/vehicle conflict points; and
- supporting the development of a public, shared parking supply in urban districts.

a. Common Characteristics of In-lieu Fee Programs

The following are the common characteristics of existing programs:

- A separate fund is established that is reserved for the future provision of publicly accessible parking spaces or the funding of alternative transportation improvements.
- The program is available within a specified area only, such as a defined downtown zoning district.
- Payment is typically due prior to issuance of a building permit, or a certificate of occupancy if a building permit is not required.
- The amount of the in-lieu fee is based on the cost of providing structured, or below-grade, parking – with the fee remaining attractively lower than the alternative cost of providing parking.
- Strict standards for location of parking facilities are not defined (such as "spaces must be provided within 500 feet of each individual development parcel for which in-lieu fees are paid"), nor are specific locations established

[6] https://planning.org/zoningpractice/askauthor/06/askauthor0206.htm

when the program is implemented. Instead, parking location decisions are made over time, reflecting the changes in need for parking and opportunities to provide parking. In other words, developers (or their lenders) are not guaranteed that a specific number of spaces will be provided within a specific walk distance.

b. Examples

- Arlington County, VA – The County can accept onetime payments for each space of required shared parking that is not built. The County Manager is to establish the amount of payment annually based on the relative cost of building structured parking.
- Palo Alto, CA – The City offers developers in downtown the option of contributing $51,000 per space to the City's in-lieu fee fund, as an alternative to providing on-site parking.
- Boulder, CO – Boulder treats its in-lieu fees as general transportation funds. These monies have been used for downtown transit improvements, as well as parking.

2. Encouraging Shared Parking

Arlington County's Columbia Pike District Parking Strategy encourages sharing spaces by setting a limit on the number of reserved parking spaces allowed, while placing no limit on the amount of shared parking allowed on-site. Sites over 20,000 square feet in land area have the following requirements:

- A maximum of two spaces per residential unit may be made available as reserved parking.
- There are no maximum limits on shared parking.
- Up to 100 percent of all required parking may be provided off-site if the said parking spaces are located within a ¼-mile radius of the subject site and a legally binding parking agreement meeting zoning code standards is provided to the Zoning Administrator.

3. Requiring Shared Parking

Arlington County's Columbia Pike Parking Strategy also explicitly requires sharing spaces. Sites over 20,000 square feet in land area have the following requirements:

- A minimum of 1 and 1/8 parking spaces per residential unit, of which a minimum of 1/8 parking space per residential unit shall be provided as Shared Parking.
- New on-street parking spaces created in conjunction with the development may be counted toward the minimum requirement for shared parking.

4. Requiring Bike Parking

Parking accommodations for bicycles can be required in the same manner that minimum parking requirements regulated on-site provisions for automobiles. Many cities have adopted ratios of bike accommodation tied to square footage of uses or residential units. These requirements help support bicycle mobility and boost bike mode shares for local trips. They can also reduce parking demand by expanding the range of non-motorized accessibility within urban districts. Expanding this range can be very effective

in filling in transit service gaps, and reducing parking demand tied to short- and medium range- trips.

a. Examples

- Chicago, IL completely re-wrote its zoning code in 2004. The new code requires one bike space for every two required vehicle spaces. Whenever bicycle parking is required, at least 2 bicycle spaces must be provided. No use is required to provide more than 50 bicycle parking spaces. The zoning also stipulates a number of design requirements for required bike parking including covering, lighting, dimensions, security, and location.
- San Francisco, CA requires one space of bike parking for every built automobile space for all new housing over 4 units in the city.

5. Unbundling

Most housing arrangements provide tenant parking as part the lease or purchase cost. Unbundling this relationship by requiring that parking be purchased or leased separately reduces housing costs for households that own fewer cars than average, and makes clearer the cost of owning and storing a car. This strategy is also effective in providing developers with added financial incentive not to build parking for which there is not a paying market. Unbundling residential parking can also significantly reduce household vehicle ownership by revealing some of its hidden costs.

Some communities use zoning to require that parking be sold or leased independently from housing units or office space. Other communities require that parking be a separate line-item in lease contracts, even if spaces are automatically included. Once renters become aware of what they pay for parking they may decide to negotiate changes, perhaps renting fewer spaces or trading parking spaces with other residents.

Another approach is to reduce minimum parking requirements, or allow parking beyond maximum thresholds, for developments that un-bundled parking. This recognizes that, given a choice, many residents will reduce their parking demand.

a. Examples

- San Francisco, CA, in two recent major amendments to the Planning Code, has required that the cost of parking be unbundled from the cost of housing for both renters and homebuyers in most areas of the city. The City also has very low maximum parking restrictions in its Downtown. To exceed them, parking costs must be unbundled.
- Bellevue, WA, a rapidly growing city in King County (Seattle), requires downtown office buildings of more than 50,000 square feet to identify the cost of parking as a separate line item in all leases, with the minimum monthly rate per space not less than twice the price of a bus pass. For example, since the price of a monthly bus pass was $72 in 2003, the minimum price of a leased parking space was $144 a month.

Bellevue is perhaps unique in routinely requiring the unbundling of parking costs from office leases. This innovative policy has several advantages. It makes it easy for employers to "cash-out" parking for employees (that is, to offer employees the value of their parking space as a cash subsidy if they do not drive to work), since employers can save money by leasing fewer spaces when fewer employees drive. It also makes it easier for shared parking arrangements to occur, since building owners can more easily lease surplus parking spaces to other users.

6. Car-Share Parking

Zoning can be used to facilitate car-sharing by requiring that developments with dedicated, on-site parking offer one or more spaces to established car-sharing organizations. This is typically required to be only a "right of first refusal" form of offer – if the organization decides to pass on the space/s, they do not have to be offered again.

a. Example

- San Francisco, CA requires car share spaces citywide at the ratio of 1 dedicated space for car sharing vehicles for each 200 dwelling units. Studies have shown that car-sharing services in the Bay Area reduce the number of vehicles people own and the number of car trips taken.[7]

III. LEADING CITIES

The following section describes examples of cities that have implemented a number of innovative zoning changes.

A. San Francisco

1. Parking Requirements Downtown

San Francisco was one of the earliest cities to introduce maximum parking requirements for office uses in its downtown core. Under the "Transit First" policy, parking may take up only up to 7% of a building's gross floor area. This is equivalent to allowing a maximum of .233 parking spaces per thousand square feet of development. New buildings must have an approved parking plan prior to receiving an occupancy permit. In some cases, only short-term parking is allowed; in others, a mix of long-term, short-term and carpool parking is approved. The City also levies a Transit Impact Development Fee for downtown office development – a policy recently extended to all non-residential uses, and to all parts of the City.

These parking restrictions have been challenged in recent years. Nevertheless, recent major projects have been designed with little or no parking. The Sony Metreon, a four story, 350,000 square foot entertainment center, opened in June 1999 amid predictions that it would create a parking crisis and gridlock. The project was built with no parking. The majority of users arrive by foot and transit, and the remainder can park in the existing 2,600-space 5th & Mission Garage across the street. As of March 2000, peak

[7] http://repositories.cdlib.org/iurd/wps/WP-2003-05/

utilization of the garage has averaged 78%, with not a single parking shortage period in the evening when visitation to Metreon peaks.

The City's downtown ballpark, SBC Park, faced dire predictions that it would create gridlock and parking shortages because everyone would drive there. Instead, the park's 5,000 space lots do not regularly fill. According to Bond Yee of the Department of Parking and Traffic, 60% of ballpark fans are taking transit even to the relatively remote Ballpark location, exceeding planners' initial goals.[8]

The City is currently considering extending maximum parking requirements – or at least abolishing parking minimums – in other transit-rich parts of San Francisco.

2. Zoning

In the summer of 2006, San Francisco enacted a new zoning ordinance affecting downtown commercial zones (C-3) in an effort to reduce traffic congestion, increase housing affordability, and create a safer and more livable street environment for walking, bicycling, and public transit. The most important sections of the ordinance establish maximum parking requirements for residential units, eliminate the remaining vestiges of minimum parking requirements, require that car-sharing services be offered spaces where on-site parking is provided, and require the unbundling of parking costs from housing costs in developments contain more than ten units.

The main portions of the ordinance include:

1. Elimination of the previous minimum off-street parking requirement of one space per four dwelling units.
2. Establishment of a new maximum parking requirement of 0.75 spaces per dwelling unit for one bedroom units and one space per dwelling unit for two bedrooms units.
3. Requirement of car-share parking spaces in all newly constructed residential buildings (if parking is made available).
4. All residential parking costs in new structures over ten dwelling units must be unbundled.

3. Unbundled Parking

San Francisco now requires the unbundling of parking costs from housing costs in both downtown commercial and residential zones (DTR and C-3 Districts) in all residential structures over ten dwelling units. The Planning Code, quoted below, is a good example of ordinance language for establishing this requirement:

Article 1.5: Off-Street Parking and Loading, Sec. 167:

"..(a) In DTR and C-3 Districts, all off-street parking spaces accessory to residential uses in new structures of 10 dwelling units or more, or in new conversions of non-residential buildings to residential use of 10 dwelling units or more, shall be leased or sold separately from the rental or purchase fees for dwelling units for the life of the dwelling units, such that potential renters or buyers have the option of renting or buying

[8] Interview with Bond Yee, 2006.

a residential unit at a price lower than would be the case if there were a single price for both the residential unit and the parking space…"

The ordinance also requires inclusionary affordable units to have the same opportunity to purchase or lease parking spaces as other units.

SOMA Studios and Apartments, San Francisco is one example of the results of San Francisco's policy of encouraging the unbundling of parking costs from housing costs. Unbundling parking costs in this development lowered parking demand, freeing up space for a childcare center and 19,000 square feet of neighborhood serving retail, including a market. The new five-story building combines 74 family apartments with 88 small studios, a parking garage and lobby spaces for the four floors of housing above. There are a total of 66 parking spaces available (.38 spaces per unit).

B. Arlington, County, VA

1. Reduced Parking Minimums Close to Metro Rail Stations

In the Rosslyn-Ballston corridor, the County's Zoning Ordinance significantly reduces minimum parking requirements for certain uses. For commercial development within ¼-mile of a Metro Rail station, they are halved from 1 per 530 square feet to 1 per 1,000 square feet. For retail and service-commercial uses within 1,500 feet of a Metro station, they are waived entirely for the first 5,000 square feet of development. Actual parking ratios are often lower, following negotiations between the County and developer – in some cases, no additional parking is required.

2. Parking Maximums

The National Capital Planning Commission (NCPC) sets parking maximums for all federal government buildings in the region. In Arlington County, the maximum is one space per three employees. While these are advisory only, outside the District of Columbia, they are generally followed in suburban counties such as Arlington.

3. Parking & Transportation Demand Management Conditions

To increase the development potential of a site beyond that amounted permitted as-of-right, the County requires developers to agree to a number of parking and transportation demand management conditions, through the site plan approval process. While these are negotiated on a case-by-case basis, the most common conditions include:

- Market-rate parking charges for single occupant vehicles;
- Unlimited discount-rate parking reserved for carpools and other rideshare vehicles;
- Monitoring of parking demand and traffic generation;
- Provision of short-term public parking (metered) at garage entrances;
- Shared parking; and
- Car-sharing provision.

4. Special Zoning Districts – Columbia Pike District

The County's Columbia Pike District Parking Strategy encourages sharing spaces by setting a limit on the number of reserved parking spaces allowed, while placing no limit on the amount of shared parking allowed on-site for new development. Below are some of the detailed requirements.

- Sites under 20,000 square feet in land area have no minimum parking requirements.
- Sites over 20,000 square feet in land area have the following requirements:
    - A minimum of 1 and 1/8 parking spaces per residential unit, of which a minimum of 1/8 parking space per residential unit shall be provided as SHARED PARKING. *There are no maximum limits on shared parking.*
    - New on-street parking spaces created in conjunction with the development may be counted toward the minimum requirement for shared parking.
    - A maximum of two spaces per residential unit may be made available as reserved parking. Reserved parking above the maximum may be provided upon payment to the County. The County Manager shall establish the amount of payment annually based on the approximate cost to build structured parking.
    - Up to 100 percent of all required parking may be provided off-site if the said parking spaces are located within a ¼-mile radius of the subject site and a legally binding parking agreement meeting zoning code standards (Section 33.C.3.b.) is provided to the Zoning Administrator.

C. London, UK

Until recently, most of Great Britain had parking policies that were quite similar to typical policies in the United States, with high minimum parking requirements set for all land uses. London, however, was a pioneering city in replacing minimum parking requirements in many areas with maximum standards in the early 1970s. By the 1990s, this shift accelerated. In 1995, for example, the London Borough of Kensington and Chelsea reversed directions: the borough declared that all of its existing off-street parking requirements would henceforth be maximums rather than minimums, without changing any of the numbers.

In 1996, London revised its parking standards and adopted the following maximum standards[9]:

- Central London - 1 space to 10,764 - 16,146 sq ft (1,000 -1,500 sq m);
- Inner London - 1 space to 6458 - 10,764 sq ft (600 - 1,000 sq m); and
- Outer London - 1 space to 3229 - 6458 sq ft (300 - 600 sq m).

In 2001, the shift from minimum to maximum parking standards in the UK, was codified as national government planning policy guidance, which local authorities are statutorily bound to follow. National transportation guidelines for local planning now specify that, "plans should state maximum levels of parking for broad classes of

9 Transport for London (www.tfl.gov.uk)

development…There should be no minimum standards for development, other than parking for disabled people."[10]

The explicit reasoning set out by the government is to reduce congestion, act as a demand management tool, and allow higher development densities. Local authorities are warned to be cautious in prescribing different parking standards for town centers and peripheral locations, to avoid creating "perverse incentives" for out of center development through the attraction of additional parking.

The standards for England are set out in the table below [11]. The guidance suggests these are baseline standards and calls for regional and local authorities to adopt more rigorous standards where appropriate.

Figure 3: National Maximum Parking Standards for England

Use	National Maximum Parking Standard	Threshold at which standard applies (gross floor space)
Residential	1.5 spaces per dwelling	-
Food retail	1 per 151 sq ft (14 sq m)	10,764 sq ft (1,000 sq m)
Non-food retail	1 per 215 sq ft (20 sq m)	10,764 sq ft (1,000 sq m)
Cinemas, conference facilities	1 per 5 seats	10,764 sq ft (1,000 sq m)
Other leisure	1 per 237 sq ft (22 sq m)	10,764 sq ft (1,000 sq m)
Offices	1 per 323 sq ft (30 sq m)	26,910 sq ft (2,500 sq m)
Colleges/universities	1 per 2 staff plus 1 per 15 students	26,910 sq ft (2,500 sq m)
Stadia	1 per 15 seats	1,500 seats

Source: Department of the Environment, Transport and the Regions (2001).

IV. OTHER EXAMPLES

A. Portland, OR – Maximum Parking

Portland, Oregon was one of the first cities in the U.S. to limit the parking supply as a trip reduction strategy by setting a maximum parking space requirement that developers may not exceed. Since 1975, the City of Portland has had a cap of roughly 40,000 parking spaces downtown, which includes existing and new facilities. The effect of this cap was a decrease in the downtown parking ratio from 3.4 long-term parking spaces per 1,000 square feet of office space in 1973 to 1.5 in 1990. The limit, however, did increase to 44,000 in the 1980s and slightly more in the 1990s to adjust for economic growth.

10 Shoup, Donald (2004) The High Cost of Free Parking, p.92
11 Separate standards are to be issued for Scotland and Wales.

Figure 4 presents the parking maximums for various uses and districts within Portland. City officials credit these limits with helping to increase transit mode split from about 20% in the early 1970s to 48% in the mid-1990s.

Figure 4: Portland Parking Maximums

	DD 2 & 3	DD4	DD 1& 5, UD	RD 5	RD 3 & 4, DD 6	Transit Zone	Rest of Region
Office	0.7	0.8	1.0	1.5	2.0	3.4	4.1
Retail	1.0	1.0	1.0	1.5	12.0	5.1	6.2
Medical centers	1.5	1.5	1.5	1.5	2.0	4.9	5.9
Schools/ colleges	1.0	1.0	1.0	1.5	2.0	0.3*	0.3*
Industrial	0.7	0.7	0.7	0.7	0.7	None	None
Community services	0.25	0.25	0.25	0.25	0.25	Varies	Varies

Key:

- DD = downtown district; UD = university district; RD = river district; * = per students and staff.
- Per 1,000 square feet net building area, unless noted otherwise.
- Source: City of Portland, 2003.

The Portland policy specifies maximums of 0.7 to 1.5 parking spaces per 1,000 square feet, based on type of development and proximity to transit. This compares with typical office developments that provide about 4 parking spaces per 1,000 square feet. In addition, no new parking facilities can be built for existing development, except in the case of major renovation.

An estimate of the emission reduction benefits of the Portland policy found that VMT reduced due to the policy, in 1995, totaled between 50,960 and 92,000 miles per day. This VMT reduction resulted in a drop in fuel consumption of between 2,610 to 4,730 gallons per day, and a greenhouse gas reduction of 2,400 to 4,400 metric tons of carbon equivalent per year. Since the policy has been in effect, the downtown Portland job base has grown significantly.[12]

B . San Diego, CA – Reduced Requirements for Locational and Demographic Factors

The San Diego Municipal Code permits reduced minimum parking requirements for residential, office, retail, institutional, and industrial uses in designated transit areas and for residential uses in designated very low income areas. With respect to residential uses, the minimum parking requirements can be reduced in multiple dwelling unit developments, depending on the number of bedrooms. For example, in a multiple dwelling unit development with 2 bedroom units, the basic minimum parking requirement is 2 spaces per dwelling unit; however, in both transit areas and very low income areas this requirement is reduced to 1.75 spaces per dwelling unit.[13]

[12] http://yosemite.epa.gov

[13] Driving Urban Environments: Smart Growth Best Practices. Governor's Office of Smart Growth, Maryland.

With respect to nonresidential uses, the reduction in minimum parking requirements for developments in transit varies based on use. However, in general the minimum parking requirement for nonresidential uses in transit areas is about 85% percent of the standard minimum requirement.

C. Seattle, WA – Reduced Requirements for TDM Programs

The Seattle Municipal Code stipulates that for office or manufacturing uses that require 40 or more parking spaces, the minimum parking requirements may be reduced up to 40% by implementing Transportation Demand Management (TDM) programs.[14] These provisions include:

- For every certified carpool space, the total parking requirement may be reduced by 1-9/10 spaces up to a maximum of 40% of the total parking requirement;
- For every certified vanpool purchased or leased by the applicant for employee use, the total parking requirement may be reduced by 6 spaces up to a maximum of 20% of the total parking requirement;
- If transit passes are provided to all employees and transit service is within 800 feet of the development, the total parking requirement may be reduced up to 10%; and
- For every 4 covered bicycle parking spaces provided, the total parking requirement may be reduced by 1 space up to a maximum of 5% of the total parking requirement.

D. Boulder, CO – No Minimum Requirements (Downtown)

The City of Boulder has no minimum parking requirements for non-residential uses within a designated improvement district in its downtown. Developers are allowed to build as much or as little parking as they choose, subject to design standards in the zoning code, and to manage it as they see fit. If they choose to build little or no parking on-site, they can purchase permits for public lots and garages for their employees. As public garage permits cost $213 per quarter ($852 per year), and surface lot permits (for which there is a waiting list) cost $134 per quarter ($536 per year)[15], this is usually a much less expensive strategy than building parking onsite.

Residential minimum parking requirements are also set low, at one space per unit, although these have had little impact since developers have tended to provide two spaces per unit given perceived market demands.

E. Milwaukee, WI – Reduced Minimums

In 1986, Milwaukee enacted zoning policies that greatly reduced minimum parking requirements compared to the rest of the nation. Retail parking ratios were set at two spaces per 1,000 square feet, compared to the Institute for Transportation Engineers standard one space per 300 square feet. Businesses are allowed eight spaces for the first 2,000 square feet and one space per each subsequent 1,000 square feet. In the downtown area, high density housing is the only use with minimum parking requirements, set at a fairly low two spaces per three units. The city encourages

[14] Ibid.
[15] City of Boulder, www.bouldercolorado.gov

structured as opposed to surface lots and requires that 50 percent of ground floor space on structures gets used for retail. In 2002, the city further strengthened these policies by awarding credits to developers building transit-oriented development, on-street parking, and shared parking. For developments near transit, minimum requirements may be reduced up to 15 percent.[16]

[16] "Parking Spaces / Community Places: Finding the Balance Through Smart Growth Solutions", U.S. EPA, 2006.