

# PAS Memo

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## Rethinking Parking Policies and Regulations

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Recently there has been a good deal of discussion among planners about strategies to coordinate land-use and transportation planning to increase transportation options and “level the playing field” between personal automobiles and other modes of travel. Concepts such as transit-oriented development, transportation demand management, and neotraditional planning have become major planning issues. By making transit, walking, and biking more convenient and attractive, many planners hope to reduce single-occupant vehicle (SOV) travel. Among the potential benefits are reduced traffic congestion, cleaner air, more efficient and attractive use of land, and improved mobility for those who do not own or have access to an automobile.

Despite the fact that some consider parking management to be a key ingredient in promoting transportation alternatives, the relationship between parking and travel behavior has been overlooked by many planners and urban scholars. This *PAS Memo* presents strategies for regulating and designing parking to encourage transit use, walking, and bicycling.

### Vehicle Ownership and Travel Behavior in the United States

The U.S. has undergone an explosion in the number of automobiles in operation and per capita and total vehicle miles traveled (VMT). Between 1975 and 1990, when the U.S. population increased 15.9 percent, the number of cars and light trucks in operation increased 49.3 percent. The annual VMT per vehicle increased 61.9 percent. These trends have coincided with a relative decline in transit ridership and carpooling in many metropolitan areas. Although the annual number of transit trips in the U.S. has remained around 8.3 billion since the early 1970s, transit's share of the modal split has declined. The percentage of commuters who carpool to work has also diminished, from

*By incorporating ground-level retail uses, this parking structure in Chicago's Loop provides a pedestrian-oriented streetscape.*

19.7 percent in 1980 to 13.4 percent in 1990. Meanwhile, traffic congestion has expanded in metropolitan areas throughout the country. Areas once thought beyond the reach of congestion are experiencing serious gridlock. Much of the progress made toward improving air quality has been offset by increases in automobile travel.

Many transportation analysts argue that people choose to drive so extensively because automobile travel is vastly underpriced. Automobile use in the U.S. generates numerous negative externalities—costs not borne by those who directly benefit from automobile use. (For more on externalities and automobile use, see PAS Report No. 448/449, *The Transportation/Land Use Connection*.) Some believe that the best solutions to the country's transportation problems are those that correct market distortions. However, true market pricing of automobile travel might be unattainable within the context of the American political landscape. Public initiatives, such as parking reform and other strategies that encourage alternatives to SOV travel, are perhaps the next best way to create a balanced transportation network.

Officials in central cities and suburbs alike must examine whether their parking policies and regulations contribute to or hinder the vitality and livability of their communities. Although no single policy is likely to substantially reduce VMT and alleviate traffic congestion in major metropolitan areas, some researchers suggest that the most effective policies include those

### Selected Ordinances

- King County, Washington, Zoning Code. Department of Development and Environmental Services. Adopted June 7, 1993.
- Municipal Codes Nationwide Database: [www.municode.com](http://www.municode.com). Miami and Minneapolis zoning codes available from this web site.
- Municipal Research and Services Center of Washington (MRSC): [www.mrsc.org/codes.htm](http://www.mrsc.org/codes.htm). Bellevue, Washington, King County, Washington, and Redmond, Washington, information available from this web site.
- Portland, Oregon: [www.europa.com/pdxplan/zoning/zonetoc.html](http://www.europa.com/pdxplan/zoning/zonetoc.html)
- Prince George's Plaza Transit District Development Plan. Maryland-National Capital Park and Planning Commission. Approved and adopted June 1998.
- Salt Lake City: [www.ci.sl.c.ut.us/](http://www.ci.sl.c.ut.us/)
- San Diego: [www.sannet.gov/city-clerk/municipal-code.html](http://www.sannet.gov/city-clerk/municipal-code.html)
- Santa Monica: [pen2.ci.santa-monica.ca.us/city/municode/](http://pen2.ci.santa-monica.ca.us/city/municode/)
- Schaumburg, Illinois: [www.ci.schaumburg.il.us](http://www.ci.schaumburg.il.us)

## • • • • • A Note About Parking Pricing • • • • •

The relationship between parking, mode choice, and VMT would be incomplete without mentioning pricing issues. By some estimates, less than five percent of automobile commuters in the U.S. pay to park. Free parking acts as a major incentive to drive to one's destination, regardless of trip length. Parking pricing can be used to achieve objectives such as reduced VMT and greater transit ridership and carpooling.

Surface parking costs between \$2,500 and \$4,000 per space to construct, depending upon land prices and other factors. When costs such as maintenance and property taxes are factored in, parking is far from free—somebody is paying for it. Developers and landowners must raise money to cover the costs of providing parking. In *The Transportation/Land Use Connection*, Moore and Thorsnes argue that people now pay the costs of "free" parking through lower wages or higher prices on goods. Directly charging drivers for the cost of their parking space would result in a more efficient method of covering the costs of parking while encouraging alternative mode choices.

Tools that influence parking pricing are available to local officials. Parking cash-out policies are preferred by many economists as a method to correct distortions in the transportation market. (For a description and analysis of parking cash-out, see "An Opportunity to Reduce Minimum Parking Requirements," *Journal of the American Planning Association*, Winter 1995.) Other tools include parking taxes and surcharges, and reduced parking rates for carpools at municipal parking facilities.

the preferred maximum ratios, but they must pay higher fees toward transportation improvements in the vicinity. In addition, a cap on the cumulative supply of parking has been set at 4,000 spaces. Property owners must participate in a Transportation Demand Management District, which promotes alternatives to SOV travel in the overlay zone.

In his book *Suburban Gridlock*, Robert Cervero suggests automobile disincentives such as limits on parking supply can be effective in suburban areas as well as inner cities. Cervero notes that the belief that ridesharing and mass transit are unworkable in the suburbs essentially becomes a self-fulfilling prophecy. When municipalities choose to implement maximum parking requirements, however, care ought to be exercised to meet the intended goals of the ordinance. If limits are set too far below demand in areas not well served by transit, businesses might choose to locate in adjacent municipalities where parking is less restrictive.

**Shared parking.** Some municipalities allow shared parking arrangements when adjacent uses have different operating times or different hours of peak demand (e.g., an office building and a movie theater). As a result, the total supply of parking may be reduced from what would be required if the two uses were each to provide their own parking lots. Although reduced VMT is often not the primary goal, shared parking may result in higher overall densities and fewer interruptions in the urban fabric, both of which encourage alternative mode choices.

**Bicycle parking.** Encouraging bicycle use as a viable transportation alternative has potential to reduce the demand for automobile parking spaces. In Cambridge, Massachusetts, one bicycle parking space is required for every 10 required automobile spaces for many land uses.

Some cities allow the number of required automobile parking spaces to be reduced when bicycle parking is provided. In Poulsbo, Washington, for example, one automobile space may be eliminated for every five covered bicycle parking spaces provided, with a maximum reduction of 10 percent of the required automobile parking.

Zoning codes that require bicycle parking often suggest or require certain design and location considerations. In Denver, Colorado, bicycle racks should be placed within 50 feet of building entrances and should allow for visual monitoring.

**Transportation demand management.** Some zoning codes allow parking reductions where developers and employers make special provisions to encourage carpooling, walking, and transit

use, strategies known as transportation demand management (TDM). (For more on TDM, see PAS Report No. 477, *Transportation Demand Management*.) Where frequent transit service is available, some communities allow parking supply reductions based upon proximity to transit.

Ordinances may require studies that support reduced parking requirements. In Los Angeles, developers allowed parking reductions must have a plan to accommodate more parking if the TDM strategies are ineffective and/or discontinued.

Schaumburg, Illinois, a suburb of Chicago, allows reductions to minimum parking requirements based on TDM programs. In conjunction with vanpools or subscription bus service, employment complexes with at least 30,000 square feet may reduce required parking up to 20 percent. For a carpooling program, parking may be reduced up to 10 percent. Parking may also be reduced based on proximity to public transit as well as for shared parking arrangements in mixed-use developments.

### Parking Design

In addition to the supply of parking spaces, the physical design of parking lots and structures can influence transportation choices. When considering ways in which parking area design affects travel behavior, separate issues can arise depending on whether surface parking lots or parking structures are involved, and whether the facility is in a CBD or a suburban area.

When one includes aisles and entrances, the average parking space consumes approximately 350 square feet. Suburban employment centers are often isolated buildings surrounded by surface parking lots that consume as much land as the buildings they serve. These lots can inhibit pedestrian movement, discouraging people from using transit or walking to lunch, for example. Parking structures with blank walls or otherwise uninteresting facades may detract from the pedestrian environment. It is important to remember that transit trips begin and end with walking, making pedestrian- and transit-friendly environments essentially one and the same.

### Parking Design Strategies

**Place parking lots behind or to the side of buildings.** Siting parking facilities to the rear or side of structures minimizes the visual impact of parking and allows pedestrians to access buildings without walking through parking lots. If main building entrances are oriented toward the street, pedestrians

that put restraints on automobile use, increase urban densities, and promote mixed-use development. Parking reform can effectively contribute to each of these goals.

### **Determining Parking Supply Standards**

"More is better" has been a dominant philosophy related to parking. Since many public officials have attempted to ensure new development accommodates all parking on-site, minimum parking standards are often set higher than projected demand. Today, however, more developers and public officials are realizing that parking is a relatively inefficient and unproductive use of valuable land, and it **needs to be managed**. In addition, large parking lots and structures often contribute to an unattractive and unsafe environment for pedestrians and bicyclists, discouraging people from walking or biking even short distances.

Ideally, when determining appropriate parking standards, planners conduct studies that reflect local conditions and consider the availability of automobile travel alternatives. Many planning departments do not have the time or resources to conduct thorough parking analyses, however. When parking studies are conducted, they are often rigid and inflexible.

Many agencies either "borrow" parking standards from other communities or rely on information from national organizations, such as the Institute of Transportation Engineers (ITE), the Urban Land Institute (ULI), and APA. APA's Planning Advisory Service receives numerous inquiries every year from planning agencies regarding community parking standards, making it one of the service's 10 most-requested subjects.

When setting parking standards, planners must address different issues for central business districts (CBDs) versus transit corridors and station areas versus less intensely developed locations. Parking management strategies that limit supply are used most often in CBDs because transportation alternatives usually exist, and the mix of uses generally allows for multipurpose trips. Some consider the amount of surface parking in and around CBDs as the single most important factor in determining the modal split for trips to the CBD. Municipalities might consider first setting modal split goals (e.g., 60 percent transit use during morning peak hours) and then determining parking policies and standards that will help meet those goals.

Although some suggest limiting parking supply in CBDs puts downtown areas at a competitive disadvantage within a region, requiring too much parking can also discourage development by forcing developers to dedicate valuable CBD space to parking. Ideally, parking management strategies should be implemented on a regional basis to address concerns about placing one municipality at a competitive disadvantage.

Different parking issues arise in transit corridors and station areas outside of CBDs. The concept of transit corridors, nodes, and transit-oriented development (TOD) has garnered a good deal of attention from "new urbanists" and others interested in the transportation/land use relationship. The recent popularity of rail transit has renewed interest in how transit, land use, and economic development can be mutually supportive. TODs need not be limited to areas served by rail, however.

In *The Next American Metropolis*, Peter Calthorpe notes that parking standards in TODs should reflect the walkable environment, the mix of uses, and the accessibility of public transportation. Such areas might be treated similarly to CBDs when setting parking standards. Because TODs are generally smaller than CBDs, parking should perhaps be even more strictly managed—one large surface parking lot could diffuse the intention of the TOD.

Areas not well served by public transportation pose challenges for planners hoping to reduce VMT. The suburb-to-suburb commute, which now makes up approximately 44 percent of commuting activity, is difficult to serve with efficient public transportation. However, VMT can be reduced through parking management strategies that encourage ridesharing, for example.

### **Policy Strategies for Parking Supply**

The following are examples of parking supply strategies implemented to reduce automobile transportation.

**Reduced minimum parking requirements.** Minimum parking standards are often either avoided or set much lower in CBDs and transit nodes, based on the attributes described earlier. San Francisco does not have minimum parking standards in the CBD. Boston and San Diego do not require parking to be provided for nonresidential uses in their downtowns. In Minneapolis, no parking is required for the first 400,000 square feet of floor area of nonresidential uses in many areas of the CBD. For residential development, most communities maintain minimum parking standards, but lower ratios are often applied, recognizing that downtown residents tend to own fewer cars compared with the general population.

Outside of CBDs, reduced residential parking requirements may be applied near transit stations. In San Diego, residential buildings containing two or more dwelling units located in transit corridors may reduce the required number of spaces by 10 percent, in nodal corridors or transfer nodes by 20 percent, in transit nodes by 30 percent, and in transit hubs by 60 percent.

Portland, Oregon, has no minimum parking requirements for nonresidential uses in the downtown and several of the city's commercial areas. For those zones that have minimum parking ratios, sample ratios include one space per 400 square feet of floor area for office uses, one space per 500 square feet of floor area for retail uses, one space per 750 square feet of floor area for manufacturing and production, and one space per unit for household living.

**Maximum parking requirements.** Perhaps the most direct way of limiting increases in the overall amount of parking is to set maximum parking standards. Bellevue, Washington, mandates minimum and maximum parking standards for most uses in their CBD. Office uses in the CBD-0-1 and CBD-0-2 zones are required to provide a minimum of two parking spaces per 1,000 net square feet of office space and a maximum of 2.7 spaces per 1,000 net square feet. In the same zones, manufacturing and assembly uses must provide at least 0.7 spaces per 1,000 net square feet of space and no more than one space per 1,000 net square feet.

In Salt Lake City, planners are phasing in increasingly stringent maximum parking requirements. Limits began in 1997 with a maximum standard of four spaces per 1,000 square feet of gross floor area. In 1999 maximum ratios will be 2.5 spaces per 1,000 square feet of gross floor area. New phases, scheduled to be implemented every two years, must be approved by the city council before they are officially enacted. The zoning code makes it clear that the special regulations are in areas where "alternative forms of transportation exist." A light rail transit line is currently under construction in Salt Lake City.

Overlay zones can be an effective tool to implement specific parking requirements. Prince George's County, Maryland, has established overlay zones around four rail stations. The Prince George's Plaza Transit District Overlay Zone has maximum parking ratios for all land uses and distinguishes between preferred and premium parking ratios. Developers may exceed

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can access the building safely and conveniently. In most of Portland's commercial zones, parking lots are not allowed between buildings and streets (except where a development is on a through lot, has three street frontages, or uses an entire block).

**Create pedestrian paths through parking lots.** Where parking lots cannot be placed to the rear of a structure, pedestrian access should be provided through parking lots from sidewalks and transit stops to building entrances. In King County, Washington, parking lots must incorporate pedestrian walkways. Connections between building entrances, sidewalks, and adjacent buildings are mandated.

Included in the Fort Collins, Colorado, design standards for "big box" retail stores are standards for parking lots and pedestrian circulation. (See "Site Planning for Large-Scale Retail Stores," April 1996.). No more than 50 percent of off-street parking may be located between the front of the building and the primary abutting street. Pedestrians must be accommodated by continuous landscaped walkways connecting the perimeter sidewalk to the main building entrance. The walkways must be distinguished from driving surfaces by separate paving materials.

**Maximize landscaping.** Landscaping can break up expanses of parking, separate pedestrian and vehicle traffic, and minimize the overall impact of such facilities. In King County, surface lots containing between 10 and 30 spaces must provide 20 square feet of landscaping per parking space. The landscaping requirement increases to 25 square feet for lots with more than 30 spaces. For commercial and industrial developments, one tree must be provided for every five parking stalls.

**Encourage or mandate ground floor retail in parking structures.** Stand-alone parking structures often detract from

the pedestrian environment. When parking structures are built in CBDs and transit corridors, ground-floor retail should be encouraged or, where practical, mandated. In areas where ground-floor retail is not feasible or practical, architectural detailing and landscaping may minimize the visual impact. Parking structures within Portland's downtown or university subdistricts must dedicate at least 50 percent of the street frontage wall to retail sales or office uses.

In Miami's River Quadrant Mixed-Use District, parking facilities should be enclosed and must be designed in a manner that minimizes their visual impact. At least 50 percent of the ground-level frontage of all uses must contain pedestrian-oriented uses with windows and/or doorways of transparent glass. Minimum and maximum parking supply standards are also delineated within the district. A density bonus may be granted when at least 75 percent of a development's parking spaces are located underground.

**Designate preferential carpool parking.** In Santa Monica, California, 10 percent of the required parking spaces must be reserved for vanpool or carpool parking in new office and industrial buildings greater than 50,000 square feet. Some zoning codes state that carpool parking must be designated for those spaces that are closest to the building entrance, with the exception of spaces reserved for the disabled.

**Prohibit parking facilities in specified areas.** In some locations, all parking (surface and structure) is prohibited, particularly along important pedestrian-oriented streetscapes or near transit facilities. In some cases, fees may substitute for off-street parking. The fees may then be used to construct or maintain off-site municipal parking facilities.

## Conclusion

Obtaining a balanced, intermodal transportation network is not an easy task. Numerous public policies have led to the development of communities oriented almost entirely toward automobile travel. For the foreseeable future, personal vehicle travel will continue to be the dominant mode choice. In order to foster a balanced transportation network, public officials should employ strategies to manage the supply, design, and price of parking.

Complementary management tactics should also be pursued. Public officials must be willing to make substantial long-term investments toward sustaining and improving public transportation. In addition, the public will need to be educated about the negative effects of increasing VMT. Without a thorough understanding of the costs associated with automobile dependency, public officials and those they represent are not making fully informed decisions on land-use and transportation policies that affect the sustainability of our communities.

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