



DOWNTOWN BOISE

Parking Strategic Plan

APPENDIX H3

Shoup on Parking Districts

Kimley»Horn

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Shoup on Parking Districts

Parking Prohibitions and Time Limits

Commuter parking spillover is not a concern in most central business districts, where curb parking is either prohibited or metered for short term rather than all-day use. Therefore, if employers offer employees the option to cash out their existing parking subsidies, employees cannot simply take the cash and park free on the street. This barrier to spillover permits cities such as Boston, Chicago, New York, Portland, San Diego, and San Francisco to cap the number of parking spaces in new development, without worrying about spillover parking.

Residential Parking Permits

Residential Parking Permit (RPP) districts that reserve curb spaces for residents and their guests can also prevent commuter parking spillover. RPP districts have spread rapidly throughout the country since 1977, when the United States Supreme Court upheld the ordinance that established the country's first RPP district, in Arlington, Virginia. RPP districts have also evolved by creative adaptations. For example, the City of West Hollywood, California, sells RPP permits allowing daytime parking by employees of nearby commercial areas. Most residents drive to work during the day and park on their own streets only in the evening, and fees that commuters pay for daytime parking subsidize the fees that residents pay. Vancouver, British Columbia has RPP districts that reserve some but not all spaces exclusively for residents, with metered spaces mixed in to accommodate visitors to adjacent commercial uses.

Pricing Curb Parking

Where curb parking is free, commuters who are offered cash in lieu of their free off-street spaces can take the cash and park on the street, continuing to drive to work. Stated in this conventional way, employers must provide free off-street parking so their employees will not park on the street. Rather than provide free off-street parking, however, another way to deal with the problem of commuter spillover is to charge for curb parking. Indeed, charges for curb parking and limits on the length of stay are what allow some cities to impose parking caps in central business districts to reduce congestion on the routes to downtown without creating curb parking congestion in downtown. But is pricing curb parking to prevent spillover feasible in areas other than central business districts?

Consider what it means to set a price that clears the market for curb parking. Traffic engineers usually recommend that at least one in seven curb spaces should remain vacant at all times to ensure easy parking access and egress (Witthford and Kanaan 1972; Brierly 1972; May 1975). Thus, the appropriate price for curb parking would limit the demand for parking so that at least one in seven spaces remains vacant. This strategy is not new; all commercial parking operators set prices high enough to maintain vacancies for entering cars. The last thing a commercial operator ever wants to do is to put out the "full" sign, because it means that the price is too low.



Although the conventional image of charging for curb parking is a meter at every space, several alternative technologies now widely used in European cities have eliminated unsightly and inconvenient curbside parking meters. One particularly promising new system employs personal in-vehicle parking meters that are similar in size and appearance to a small pocket calculator, and operate like a debit card. Cities in California, New York, and Virginia have already begun to use the in-vehicle parking meter, which in Europe is called an "electronic purse."⁽¹⁰⁾ Several other unobtrusive payment systems can also resolve any aesthetic or practical objection to charging for curb parking.

Although cashing out employer-paid parking can cause a spillover problem, the root of the problem is not the market's failure to provide enough free off-street parking. Rather, the root of the problem is the government's failure to charge for scarce curb parking.

Parking Benefit Districts

Minimum parking requirements emerge from a political, not an analytical process, and better analysis alone will scarcely affect the outcome. In the politics of zoning for parking, planners must weigh the interests of residents against the interests of developers. Residents want no on-street parking but their own; developers must pay for off-street parking to prevent spillover. The minimum parking requirements born of compromise and political expediency cannot be characterized as a coherent system that takes into account the effects of parking on traffic, land use, air quality, and urban form. Minimum parking requirements have never been used as a long-run strategic instrument, but are instead reactive, tactical responses to solve immediate and intensely local problems.

What can be done to change the fundamental political calculus that produces minimum parking requirements? And if solving the spillover problem by charging for curb parking, rather than by imposing minimum parking requirements, is as simple as I have proposed, why was it not done long ago? The answer to both questions lies, I believe, with what happens to parking meter revenue. Money put into a parking meter seems literally to disappear into thin air.

According to the only survey I have been able to locate, 60 percent of all cities deposited their parking meter revenues into their General Funds, and 40 percent deposited them into special Parking Funds that typically were used to provide public off-street parking (Robertson 1972). If parking meter revenue goes into the General Fund, the neighborhood sees no direct benefit; if the money goes to pay for more off-street parking, many residents will not see that as worth the cost of paying for their own curb parking. Neither of these fund uses is politically so popular that residents of any neighborhood would argue in favor of market prices for their own curb parking. An easier way to prevent parking spillover has been to require developers to provide "enough" off-street parking.

Installing parking meters on a city street is analogous to enclosing a commons in a rural village. It is a political act that creates benefits and costs, and unless citizens can see obvious benefits from the resulting revenue, why would they support paying market prices for their own curb parking? But, to change the political calculus, suppose market prices for curb parking are introduced by creating "Parking Benefit Districts" that differ from existing Residential Parking Permit Districts in two ways. First,



residents continue to receive permits to park in their District, but nonresidents will be charged the market price for parking. Second, the resulting revenue will be spent for additional public services in the neighborhood where the revenue is collected, such as sidewalk and street repair, street tree planting and trimming, street cleaning, street lighting, graffiti removal, historic preservation, or putting overhead utility wires underground.

A Parking Benefit District is a compromise between the one extreme of free curbside parking that is overused by nonresidents, and the opposite extreme of Residential Parking Permit Districts that flatly prohibit nonresident parking. When cities establish conventional RPP districts that prohibit nonresident parking, they are overreacting to the problem of spillover parking, and are overlooking important benefits that a more market-like solution can offer to both residents and nonresidents. Nonresidents should prefer a Parking Benefit District to an RPP district, because it offers them the option of parking at a fair market price (rather than simply prohibiting them from parking). Residents should also prefer a Parking Benefit District, because it offers them neighborhood public revenue derived from nonresidents.

Seen from the resident's side of the transaction, charging nonresidents for curbside parking and spending the money to benefit the adjacent property resembles Monty Python's scheme to "tax foreigners living abroad." The purpose of a Parking Benefit District would be to collect and spend curbside parking revenue to make the neighborhood a place where people want to be, rather than merely a place where anyone can park free.

Can market-priced curbside parking really yield sufficient revenue to make it worth collecting? One way to suggest the revenue potential of curbside parking is to compare it to the residential property tax. In 1991, the median property tax on single-family houses was \$922 (U.S. Bureau of the Census 1993). At a modest price of fifty cents an hour for only eight hours each weekday, and an 85 percent occupancy rate, one curbside parking space would yield \$884 a year. Many single-family neighborhoods have two curbside spaces in front of every house, so, even at a modest price, curbside parking revenue could easily exceed current property tax revenue in neighborhoods subject to spillover parking.(11)

The revenue potential of curbside parking can also be related to the value of the privately owned land that it fronts. A standard curbside parking lane is eight feet wide. Where private property lines extend 100 feet back from the street (an unusually shallow lot), curbside parking occupies about eight percent as much space as the privately owned land it fronts. Where private property lines extend 160 feet back from the street (an unusually deep lot), curbside parking occupies about five percent as much space as the privately owned land it fronts. Curbside spaces yielding the same rent per square foot as the privately owned land they front would thus yield between five and eight percent of total urban land rent.(12)

Citizens may doubt a city's ability to charge a price for curbside parking that ensures vacancies, but experience alone can guide curbside parking prices to their market-clearing level, just as it now does for commercial off-street parking. Short-term demand shifts would cause the vacancy rate to vary about its average, but the cure for systematic overoccupancy or underoccupancy would be evident and simple:



adjust the price.(13) Commercial parking operators always charge prices that ensure vacancies, so if public agencies find it difficult to do so, why not contract out the task to private enterprise?

Using a neighborhood-generated land rent to finance neighborhood public services should appeal especially to advocates of greater neighborhood self-government. By encouraging grass-roots action and fostering local choice, the proposed Parking Benefit Districts closely resemble existing Special Assessment Districts, which are often used to finance the same sorts of neighborhood public services that Parking Benefit Districts could finance. A Special Assessment District is usually organized by a neighborhood's residents to tax themselves for neighborhood services such as street lighting and sidewalk repair, and property owners commonly pay special assessments in proportion to their street frontage, just as curb parking would provide revenue in proportion to street frontage. Indeed, the chief difference between a Special Assessment District and a Parking Benefit District seems to lie in who pays: the resident property owners pay a special assessment; the nonresident motorists would pay for curb parking. Since most cities already use special assessments (local governments' special assessment revenue totalled \$2.3 billion in 1990), they must already have the accounting systems necessary to allocate district-specific revenue to pay for neighborhood public services.(14)

A Parking Benefit District could be tried in any neighborhood, without requiring any changes outside the neighborhood that tries it. Residents could petition for a Parking Benefit District, just as they now petition for a conventional RPP district, so a Parking Benefit District would be formed only if the residents wanted it. Citizen demand rather than government initiative explains the rapid spread of RPP districts throughout the United States, and if Parking Benefit Districts were successful once tried, they could spread in exactly the same way, by petition from residents.

Parking Benefit Districts might even make neighborhood streets safer, because the link between parking revenue and public services should encourage residents to take a proprietary interest in ensuring the safety of visitors and their cars. Anyone parking illegally would be stealing from neighborhood public revenues, so residents would have an incentive to cooperate with the police and parking enforcement officers in supporting parking regulations. And if market-clearing prices created vacant legal spaces, no one would ever "need" to park illegally by a fire hydrant, at a bus stop, or in a handicap space. Although collecting market prices for curb parking may sound complicated, it should be far simpler than enforcing the existing nonprice time limits on curb parking. Surveys often show that more than half of all cars parking in time-limited zones either violate the time limit or are in an illegal space.

In summary, the proposal is: charge market prices to allocate curb parking efficiently, and spend the revenue to make the parking charges politically acceptable. The real obstacles to market prices for curb parking are political, not technical, and the political acceptability of pricing curb parking depends on a politically acceptable distribution of the revenue. Dedicating each neighborhood's parking revenue to that neighborhood's highest public spending priority could be the key to creating a political constituency for pricing curb parking and reducing or eliminating off-street parking requirements.



Is It Fair to Charge for Parking?

To some, parking meters are ethically akin to pay toilets. If people "need" parking, won't pricing it necessarily harm the poor? But the fairness of charging for parking has to be considered in comparison to the alternative, which is "free" parking made possible by minimum parking requirements for all land uses. Minimum parking requirements can make parking appear free, but the cost does not disappear; rather, it reappears as higher costs for all other goods and services, especially housing.

A case study from Oakland, California shows how minimum parking requirements raise the cost of housing. Wallace Smith (1964) studied a sample of 64 rental housing projects developed within four years before and two years after Oakland introduced its first off-street parking requirement for rental housing. Before 1961, Oakland's zoning ordinance did not even mention off-street parking in residential districts. In 1961 the zoning was changed to require one off-street parking space per dwelling unit for all apartments developed after that date.

As a result of the parking requirement, the number of dwelling units per acre in new developments fell by 30 percent, and the construction cost per dwelling unit rose by 18 percent. Even including the cost of the newly required parking spaces, housing investment per acre declined by 18 percent. Land values fell even more (by 33 percent), because the land was suddenly burdened with a new requirement to provide parking that residents did not pay for. Property tax revenues also declined, because both land values and construction investment declined.

Why did developers reduce housing density by 30 percent in response to a minimum parking requirement of one parking space per dwelling unit? First, developers said the requirement made previous densities impossible without expensive underground garages, so the cost of development at the previous density greatly increased; therefore, they reduced density and devoted more land to surface parking. Second, developers said that adding a dwelling unit required another parking space, but enlarging a dwelling unit did not; therefore, they built fewer but larger units. All architects and developers know of similar situations where minimum parking requirements dictate what can be built, what it looks like, and what it costs. Form no longer follows function, fashion, or even finance; instead, form follows parking requirements.(15)

It is doubtful that "free" parking benefits the poor when the hidden costs of the consequent minimum parking requirements are considered. Because the cost of providing the required "free" parking is incorporated into the cost of all other goods and services, parking requirements force the poor to pay for parking regardless of whether or not they own a car. A recent transportation survey in Southern California found that the richest 20 percent of the population owned one car for each person, while the poorest 20 percent owned only one car for every three persons (Cameron 1994). In this environment, it would be misleading to argue that reducing off-street parking requirements and charging nonresidents for curbside parking will harm poor people.

Some may argue that automobiles already pay for public roads through gasoline taxes, so charging for curbside parking is unfair "double taxation." But automobiles use gasoline only while they are moving, not while they are parked (unless evaporative emissions, which pollute the air, are considered). The more a



car is parked, the less it pays in gasoline taxes, so gasoline taxes clearly do not pay for parking spaces, and charging for curb parking is not unfair double taxation.(16)

Pricing Curb Parking: the Implications for Business

A separate equity issue is whether it is fair to charge market prices for curb parking in older commercial areas where small businesses rely on curb parking for their customers. Recall that the goal is to price parking to yield about an 85 percent occupancy rate so motorists can quickly find a place to park near their destination. A lower price is called for if there are too many vacancies, and a higher price if there are so few vacancies that motorists must drive around to find a place to park. The total number of curb spaces will not be reduced. Instead, market-clearing prices will reduce the number of parked cars by only enough to create a few curb vacancies, so a parking space will never be hard to find.

Those who arrive in higher occupancy vehicles can split any parking charge, so their cost per person will be low, and those who stay a short time will pay little even if the price per hour is high. Thus, market prices for curb parking will ensure that everyone can park quickly, will favor higher occupancy vehicles, and will encourage parking turnover. The adjacent shops should end up with more customers per curb space than when curb parking is free but taken by solo drivers who are willing to spend the time (and gasoline) necessary to hunt for a space, and who will park longer once they find it.

Finally, by allocating the available curb spaces to those who are most willing to pay for them (without having to search for them), rather than to those who will come only if parking is free (but difficult to find because there are no vacancies), market-clearing parking prices should attract customers who will spend more, per hour they are parked, in the adjacent shops. By attracting more, and higher-spending, customers per curb parking space, market-clearing parking prices should help rather than harm small businesses whose customers rely on curb parking. The resulting revenue will also be available to spend on public improvements in the business districts where it is collected.

Conclusion

Employer-paid parking subsidizes about a third of all automobile travel in the United States, and about two-thirds of all automobile travel during the morning peak hours. To reduce traffic congestion and air pollution, California has recently enacted legislation that requires employers who subsidize employee parking to allow employees to take the cash value of the parking subsidy, in lieu of the parking itself. By shifting subsidies from parking to people, cashing out employer-paid parking will encourage commuters to do what planners have long exhorted them to do: carpool, ride mass transit, bicycle, or walk to work. California's new legislation also requires cities to reduce their minimum parking requirements for developments that implement a parking cash-out program. But a potentially serious problem with cashing out parking subsidies and reducing parking requirements is that employees may take the cash and park free on nearby streets, thus congesting surrounding areas with spillover parking. If curb parking is free, cashing out employer-paid parking can cause spillover, but I have argued that the root of the spillover problem is the government's failure to charge for scarce curb parking, not the market's failure to provide free off-street parking.



The fear of spillover parking is a legitimate but not unanswerable objection to cashing out employer-paid parking and reducing parking requirements. To deal with spillover parking problems that may occur if cities reduce parking requirements, I have proposed creating Parking Benefit Districts where the revenues from market-priced curb parking are dedicated to paying for neighborhood public set-vices. At relatively modest parking prices, curb parking revenue can easily exceed the current residential property tax in neighborhoods subject to spillover parking from nearby commercial development.

With market prices for curb parking, and a commitment to spend the resulting revenue to benefit the neighborhood where it is collected, spillover parking can become an important source of public revenue, rather than a source of annoyance. That is, spillover parking can be converted into an additional advantage from cashing out employer-paid parking and reducing or eliminating minimum parking requirements.



NOTES

1. This result was calculated from the 56,733 responses to the parking question in the 1990 Nationwide Personal Transportation Survey's "Travel Day File." The parking question was not asked for automobile trips that ended at home.
2. Ninety-seven percent of the lowest-income employees park free at work, while only 89 percent of the highest-income employees park free at work. This finding does not necessarily imply that lower-income employees are more likely to be offered free parking at work. Another explanation is that lower-income employees are less likely to drive to work if they have to pay for parking. Sample sizes for the 16 individual CMSAs ranged from 146 commuters in Pittsburgh to 1,954 commuters in New York.
3. These percentages are calculated from data in the 1990 NPTS "travel day file," and refer to automobile travel to and from work as a share of total personal automobile travel for all trip purposes.
4. The number of cars driven to work includes the cars driven by carpoolers as well as those driven by solo drivers. The case studies included information on the share of employees who carpooled, but not on the average carpool size. In the table, an average of one vehicle per 2.62 carpoolers is used to estimate the number of cars driven to work by carpoolers. This figure was calculated from the 1988 Commuter Survey (Commuter Transportation Services 1988). Moderate changes in the assumed average carpool size have little effect on the estimated number of cars driven to work per 100 employees.
5. The cash-out requirement applies to employers of 50 or more persons in areas that do not meet the state's clean air standards. California's cash-out legislation was based on the research reported in Shoup (1992), which contains the full text of the legislation.
6. Because cash in lieu of a parking space is taxable for the employee, cashing out employer-paid parking will reduce parking demand by less than would occur if employer-paid parking were eliminated altogether. See Shoup (1992, 58-63) for an estimate that cashing out employer-paid parking will reduce parking demand by about two-thirds of the reduction caused by eliminating employer-paid parking.
7. In particular, parking demand depends crucially on office occupancy density. In a survey of 57 of the largest suburban employment centers in the United States, Robert Cervero (1988, 26) found that average office occupancy density ranged from 0.5 to 6 employees per 1,000 square feet; the standard deviation was almost as large as the mean. Given this broad range of office occupancy densities, it is impossible to imagine that any planner can know how many parking spaces per 1,000 square feet an office building "needs."
8. The parking requirement was calculated for an assumed 10,000-square-foot, three-story office building. Rex Link carried out the 1975 survey. A few cities included in Link's 1975 survey were not included in the comparison to 1993 because the city's 1993 requirement was difficult to interpret. For example, in 1993, for a corporate



office building, the City of Banning required "one parking space for each employee on the largest shift plus one space per 350 square feet of floor area." Therefore, building size alone is insufficient information to calculate the required parking. The results of both surveys are available from the author.

9. When the office space in a building was less than fully leased, Willson adjusted the observed parking occupancy upward to estimate peak parking demand for a fully leased building, so the empty parking spaces were not explained by empty offices in the buildings themselves.
10. See Public Technology (November/December 1990, 4). Motorists prepay a municipal authority for a total value of parking that is programmed into the motorist's personal in-vehicle meter. After parking, the motorist keys in a secret "PIN" number and the code of the parking zone, switches on the meter, and leaves it inside the car with its LCD display visible from outside the car. The meter deducts the appropriate parking charge per minute from the meter's prepaid balance, until the motorist returns and switches the meter off. Motorists do not need to carry coins, and do not suffer the "meter anxiety" associated with conventional parking meters that require prepayment for a fixed amount of time despite uncertainty about how long the motorist will want to remain parked. Enforcement personnel can easily see whether a parked car's meter is running; with adequate fines for violation, motorists who have prepaid for parking will always find it cheaper to use their in-vehicle meters than to risk a ticket. Arlington, Virginia was the first local government in the United States to introduce the in-vehicle parking meter. Users report an overwhelmingly positive response. See Shoup (1992, 95-97) for a description of the technology available for collecting curb parking revenue.
11. Moreover, the operating cost plus amortized capital cost of structured parking now almost always exceeds \$922 per space per year, so at market prices each curb parking space should earn more than \$922 per year before it is economical to build an adjacent off-street parking structure.
12. This calculation is approximate, because not all curb space is available for parking, and additional curb spaces are available along the sides as well as the fronts of blocks. To obtain a more accurate estimate for one sample location, I measured the area of privately owned land (excluding sidewalks and alleys) on 12 blocks near UCLA, and compared it to the area devoted to curb parking spaces surrounding each block. The average ratio of curb parking space to privately owned land was 5.1 percent.
13. Perhaps the simplest way to guarantee residents that there will not be too many cars parked on the streets in a Parking Benefit District would be to sell a limited number of nonresident permits, perhaps only two or three permits on each block, for commuters who want to park in an existing RPP district, with the price set high enough to limit demand to the fixed quantity of commuter permits. Later, when the revenue potential of these nonresident permits has been established, residents could make the tradeoff between the inconvenience of more paying guests and the



benefits of more public revenue. Also, higher-tech methods of charging for nonresident parking could be introduced, such as the in-vehicle parking meters described earlier. In densely populated neighborhoods, even residents would presumably have to pay for parking to clear the market for the relatively few curb spaces, but the resulting revenue spent on better public services for the neighborhood could make these payments politically acceptable, especially if residents without cars outnumbered those with cars. Wherever curb parking is scarce, there will be a necessary trade-off between how many permits to allocate to residents, and at what price, versus how much income can be generated by charging nonresidents for parking in the curb spaces not used by residents.

14. See Shoup (1990) for an explanation of how special assessments based on front-foot charges are used to finance neighborhood public investments. In regard to what neighborhood public purposes should be eligible for finance by a Parking Benefit District, one simple answer is to specify that a Parking Benefit District could finance any public purpose that can already be financed by a special assessment.
15. If Oakland's modest requirement of one parking space per dwelling unit had such a dramatic effect on land use, try to imagine how today's much higher minimum parking requirements must further reduce housing density and housing investment, and raise housing costs, all for the purpose of providing more "free" parking. For example, the Park Mile Specific Plan in Los Angeles requires, "For dwelling units, there shall be at least two and one-half parking spaces for each dwelling regardless of the number of habitable rooms contained therein" (City of Los Angeles 1989, 616-617).
16. MacKenzie, Dower, and Chen (1992) estimate that gasoline taxes and automobile user fees cover only about 60 percent of public spending on roads.



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