



PARKING PRICING

I. DESCRIPTION

Both government and the private sector can implement parking pricing strategies to encourage use of alternatives to solo driving.

Governments may implement many pricing approaches. They may:

- Impose or increase fees and surcharges for solo drivers or long term parkers in public parking facilities
- Give price preference to car and vanpoolers
- Tax the providers of parking, whether commercial operators of parking or all public and private entities providing parking
- Impose parking pricing through regional regulations, for example air quality regulations or special legislation
- Tie funding (especially state government) allocations for road improvements to requirements for local trip reduction plans incorporating parking pricing among other demand management strategies.

Private developers, employers and Transportation Management Associations also can play a role in pricing. One or more of these entities can:

- Remove, reduce or cash out employer provided parking subsidies
- Reverse "early bird" or monthly discounts favoring long term commuter parking
- With or without government regulation, impose parking pricing and discount parking for

car-poolers where free parking prevails, or where car-poolers enjoy no price breaks

- Develop parking regulations and pricing for commercial and retail mixed use areas and manage and enforce parking.

Some examples include:

- Madison, Wisconsin, imposed a peak period surcharge at municipal garages to encourage commuters to switch to shuttle service.
- Seattle discounted carpool parking downtown and required the same discounts in many development agreements.
- San Francisco increased rates at public and commercial garages through a parking tax as part of its "transit first" policy. Through developer agreements, the City also negotiates parking rates at new commercial developments.
- Employers in Bellevue, Washington, Los Angeles, California and Montgomery County, Maryland have imposed parking pricing on employees alone or in combination with travel allowances, or provided effective parking subsidies to rideshare patrons.
- Montgomery County, Maryland ended its sale of discount monthly parking booklets for commuters.
- The Transportation Management Association in Bellevue, Washington for some time managed and enforced parking to prevent commuters from parking in shopper areas.

II. EFFECTS

Effectiveness Considerations

The effectiveness of parking pricing in reducing solo driving and increasing use of alternative modes of travel depends on:



- Current pricing levels and changes in the price level
- The attractiveness of travel and parking alternatives.

Looking at the first issue, increasing an already high price of parking by a certain percent will have more effect than increasing a relatively low price by the same percent. For example, one study of Los Angeles commuters estimates the same proportional change in pricing is three times more effective where the all day rate is \$7.00 versus where it is \$3.00.¹

In terms of the second issue, at least three variables outside pricing itself are important to the effect of pricing. They are:

- Proportion of commuters whose employers pay for parking
- Availability of transit and other alternatives to solo driving
- Availability of uncontrolled parking supplies (e.g. neighborhood streets, vacant lots, utility and train right of ways) where commuters may be diverted under pricing strategies.

Generally, pricing can be expected to be the most effective in shifting commuters to alternative modes where these variables align favorably with price increases. For example, price increases will have more effect where employers pay little if any of employee parking costs, compared to where employers subsidize most or all of these costs. The proportion of commuters with employers paying for all or part of parking may be over 50 percent in some areas.² Likewise, price increases will shift more commuters to transit or ridesharing where these services and opportunities are best, all else being equal. Finally, the availability of alternative free or unregulated parking will tend to reduce the proportion of solo drivers switching to alternative modes in the face of price increases.

Primary Effects

There are several documented cases of dramatic declines in solo driving and trip making resulting from employers imposing parking pricing, or removing employee parking subsidies, whether alone or in combination with alternative mode programs. Examples span suburban, urban and downtown areas.

In suburban settings, both public and private employers have reduced solo driving through a combination of pricing strategies and alternative mode programs such as carpool and transit encouragements. Cases summarized in the literature³ illustrate the possible range of reduction in solo driving:

- 12 percent reduction in the case of the Nuclear Regulatory Commission compared to before pricing (though the 42 percent solo share is about 40 percent below solo shares of other employers in the area)
- 17 percent less for Bellevue City Hall compared to before pricing
- 25 percent less for CH2MHill compared to before pricing
- 25 percent decline in the case of Twentieth Century Corporation
- 40 percent lesser proportion of solo drivers at Pacific Northwest Bell compared to other employers in the area.

In an urban but not downtown setting, Commuter Computer outside the Los Angeles central business district dropped the drive alone share from 42 percent to 8 percent by eliminating free parking.⁴

Clearly, increased parking rates decidedly influences trip making and parking behavior.

Other Effects and Considerations

As the examples show, parking pricing has been effective in reducing solo driving. However, several of the



cases suggest pricing not only reduces solo driving but the location of commuter parking. In some cases, pricing also has shifted transit users to car-pooling. Another important consideration is substantial price changes are required to bring reductions in solo driving:

- *City of Madison:* The City imposed a peak period surcharge of \$1.00 at four parking facilities combined with new shuttle service. Five to eight percent of commuters switched to transit. However, 22 percent shifted parking location, and six percent parked after the peak.⁵ The Madison case underscores the possibility that some commuters will shift parking locations or time of parking rather than mode of travel, at least under surcharges.
- *City of Seattle:* The City reduced parking charges for car-pools at two Seattle parking facilities downtown, from \$25 to \$5 per month at one facility and to \$0 at another. Twenty five percent of the participants in the program were previous solo drivers, suggesting considerable trip reduction. However, some participants were previous transit users (45 percent) and car-poolers (29 percent), suggesting the importance of monitoring the effects of pricing programs on all modes of travel.⁶
- *City of San Francisco:* The City increased rates at public (and commercial) facilities through a 25 percent tax and found large variation in the decline of vehicles parked at the facilities. The number of cars parked declined at seven facilities but increased at six others. Overall, the number of parked cars declined about two percent, but it is not known what proportion of parkers turned to transit, car-pooling or other alternatives to auto use. The lesson appears to be fairly substantial increases in parking taxes may be needed to reduce parking demand, and the effects will vary depending on location.⁷
- *U.S. Federal Government:* The federal government charged employees for parking at selected federal facilities, reversing a previous policy of free parking. Rates were changed from mostly free to

one-half the rates at nearby commercial lots. The reduction in the number of autos commuting ranged from one to 10 percent in central city areas, and between two and four percent in suburban locations.⁸ Again, pricing brought reductions in parking and auto use.

- *Federal Government of Ottawa:* The federal government began charging near market price for employee parking in Ottawa. Solo driving decreased by 21 percent (from 35 percent to 28 percent), with large shifts to transit even among higher income employees. Overall, about seven percent of workers changed mode of travel.⁹
- *City of Chicago:* The City raised rates from 30 to 120 percent, bringing fees up to levels at nearby commercial space. The number of cars parked declined 35 percent and parking duration decreased. The number of all day parkers arriving before 9:30 a.m. dropped 72 percent. Local planners inferred most former long term parkers switched to transit or pooling or parking for shorter durations. However, no hard evidence was gathered on mode shifts. Parking at nearby commercial parking facilities did not change significantly. Revenues from municipal facilities increased.¹⁰ The important lesson from this case is the potential of pricing not only to reduce long term parking and influence mode of travel, but to increase parking revenues at public facilities.
- *City of Eugene, Or:* Raised rates at two municipal garages and several surface lots. Rates at garages went from \$16 to \$30 over about one year. Surface lot rates went up from between \$6-16 to \$16-34. Meter rates did not change, but fines were increased for commuter parking in short term stalls for shoppers. Monthly parking permit sales declined from 560 to 360 parkers. About half the parkers became car-poolers or rode a free shuttle, the other half apparently changed parking locations.¹¹ The Eugene program demonstrates the potential for pricing to shift where parking takes place, and the need for enforcement strategies to accompany pricing.



III. IMPLEMENTATION

Applicability

Pricing can be applied to:

- Individual developments and employers
- Entire employment centers in urban or suburban settings
- Public facilities typically in downtown areas
- Public parking districts in urban or suburban settings
- Commercial parking through rate regulation or parking taxes
- Regions through air quality or funding allocations legislation.

In each case, pricing can be effective in reducing vehicle trips, depending on local objectives. For example, in a downtown or suburban setting where the public sector controls a considerable amount of parking, pricing policies may be effective in reducing both local and regional trip making. However, in localities where private parking dominates, changes in public parking pricing may reduce local trips to and from public facilities, but have little effect over the locality taken as a whole. In such settings, parking policies must address the commercial and private sector. National surveys show private off-street parking makes up from 15 to 60 percent of all off street parking depending on the locality. Thus, the focus on public versus private and commercial parking will vary from locality to locality.

Another important consideration is the proportion of through traffic and the importance of reducing it. In urban downtowns, through trips make up anywhere from 30 to 60 percent of auto trips, though the percent is 15 to 30 percent for downtown areas taken as a whole.¹² For localities aiming to reduce both local and through trips, pricing strategies will have to be coordinated across jurisdictions.

The best candidate localities for pricing strategies are those where some amount of parking pricing already is in place. It will be difficult to impose prices where public or private parking is free. An excellent candidate application setting might be public garages where rates have fallen behind commercial parking rates, and where these rates offer no differentials for car-poolers. Governments in these settings might consider raising rates for solo drivers, providing discounts for poolers and graduating rates by peak versus off peak arrival, or long versus short term parking. Ending any discounts for patrons buying monthly tickets also provides another opportunity. Of course, these strategies are the most applicable where:

- The public supply makes up a substantial proportion of the total parking supply
- There are few opportunities for spillover parking (into retail or neighborhood areas with no pricing or parking regulation)
- Transit into the priced zone has some capacity or will be improved.

A parking surcharge for a.m. entry into public facilities also might be considered, though the surcharge should be applied to most facilities because commuters are likely to simply shift parking destinations if surcharges are in place at only a few facilities. For maximum effect, priced parking permits can be required for parking in the zone both on and off street.

Two other possible pricing applications are important to consider. One is where commercial rates encourage long term parking by "early bird specials" or monthly discount parking. These policies might be reversed through regulation or negotiation with the commercial parking industry. Another opportunity exists where employers provide parking subsidies to employees. Localities might require employers subsidizing employee parking to offer a cash travel allowance or salary hike as an option. For example, suppose an employer pays for the parking of its company managers. Under this option, the employer would have to offer managers the option of taking the cash equivalent of the subsidy instead of receiving subsidized parking.



The rationale for the cash out is some employees will prefer to "pocket" the cash and take transit or car-pools to work, at least a few days per week. One study of Los Angeles commuters estimates the cash out might reduce solo driving by as much as 24 percent.¹³

Planning Considerations

Detailed planning and evaluation is needed to is needed to determine the best parking pricing approach. As a first step in planning, it is important to estimate:

- Proportion of through traffic in the area considered for pricing
- Amount and use of available parking supplies, including overall demand as well as proportion of long versus short term use and shoppers versus commuters
- Availability of parking nearby the priced zone, to assess spillover parking potential
- Difference between public and private parking supplies and rates, since some parkers may simply shift to commercial facilities if public rates exceed commercial rates
- Degree of employer subsidization of employee parking
- Quality and capacity of transit services, carpool matching programs, bicycling facilities and other alternatives to solo driving
- Available policy instruments, including demand management ordinances and developer agreements which might be modified to encourage pricing, or state or county funding allocation formulas and legislation (e.g. Congestion Management Plan) which might be modified to encourage pricing



- Local regulatory power over commercial parking rates, and authority to implement and enforce parking taxes.

Implementation of rate hikes in the public sector may be the easiest to accomplish of all pricing options. No new authority is required. No new pricing technology or enforcement procedures are needed. Of course, public acceptance and decision maker approval may well stand in the way of implementation, but some likely objections can be met with careful planning. Some key issues include:

- Where increased revenues will go
- Whether shoppers will find more or less parking available
- Whether parkers will shift to unprotected neighborhood streets
- Whether low income workers are disadvantaged.

Collateral actions will be important to implementation feasibility. Important actions to consider include:

- Increased transit and carpool services
- Preferential parking for residents in nearby neighborhoods
- Set aside or validated parking for shoppers
- Preferential parking by location and rate for car-pools
- Increased enforcement funded by increased revenues.

If priced parking permits are proposed, businesses might be allowed to sell permits on a concession basis. The approach provides some revenue and exposure for local businesses and creates a decentralized permit distribution system.

More difficult than altering public sector parking rates and policies will be influencing private parking pricing. As discussed under application setting, one target



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of opportunity might be early bird rates. Localities might ban early bird rates through regulation, or allow the rate breaks only for very early arrivals. If regulation is not feasible, negotiation may work, especially in localities with parking taxes on commercial parking. An agreement might be struck allowing favorable tax treatment for operators without early bird rates or monthly discounts.

Another important private sector parking policy to address is employer subsidized parking of employees. Probably the best way to attack this problem is to require employers subsidizing employee parking to offer cash or a travel allowance as an alternative. Those taking the cash would not receive subsidized parking. This option does not require the employer to offer all employees in the company cash or a travel allowance equivalent to the parking subsidy. As such, the option strives to maintain, not increase, the net employer outlay on parking, thereby enhancing prospects for acceptance and feasibility. Of course, a variation would be to require employers offering any employees parking subsidies to offer all employees the cash equivalent. This approach would increase employer outlays for employee transportation and likely meet with more resistance.

The parking tax is another option for influencing commercial parking rates. As the case of San Francisco shows, the tax may have to be quite substantial to influence parking rates, so it is important for local planners to assess the political perspectives on such taxes as part of assessing feasibility. Parking taxes also will require a collection mechanism. Depending on how the tax is applied, parking operators would have to file a tax return form identifying parking facilities, rates charged, number of spaces, and proportion of lease parking or long term parking. Depending on the expected volume of returns and the tax collection burden, reports and collection might occur annually or quarterly.

Where pricing is to be coordinated across several localities, state policy may require attention as an implementation mechanism. For example, in California, the Congestion Management Plan legislation requires all localities to develop demand management programs, with attention to parking pricing and management among other strategies, as a condition of receiving state funding for facility improvements. The regulation also specifies that traffic congestion must not deteriorate below certain

levels as a condition for receiving funding. Thus, the legislation provides an incentive for congested localities to consider parking pricing strategies. State and federal air quality regulations may also provide an impetus for regional parking management plans.

Cost And Revenue Issues



Implementation costs will depend on whether pricing is merely a change in existing pricing or a whole new pricing scheme. Much also depends on whether or not pricing is packaged with other strategies such as expanded rideshare and transit services. Usually, there is minimal cost in implementing parking price hikes at municipal facilities with pricing in place. Costs for changes in notices and accounting operations are minimal. Implementing new pricing schemes especially combined with increased transit or carpool services can be much more costly. New off street pricing will entail attendants or meters, and may require new enforcement and accounting procedures. Both Eugene and Santa Cruz implemented comprehensive programs in the early 1980's costing between \$30,000 and \$50,000 per year in administration and enforcement alone. Additional costs included expanded transit service. However, both programs covered their operating costs in parking revenues and citations.

While the direct costs of implementing parking pricing strategies may not be very great, indirect economic and financial effects may be substantial. For example, when San Francisco implemented the parking tax, gross revenues from the tax amounted to 5.5 million per year. Likewise, price increases in Chicago at municipal facilities resulted in increased revenues even though the the City controls only 14 percent of parking space in the CBD. Parkers did not divert to commercial facilities because the price hikes brought prices up to commercial facilities.

Monitoring and Evaluation

Once implemented, any parking pricing scheme must be monitored and evaluated. Parking managers and planners should track:



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- Mode shares of commuters into the zone.
- Parking utilization and turnover at priced facilities and at nearby facilities and streets.
- Parking violations and meter feeding. Some commuters can be expected to feed meters and shuffle cars in time restricted zones.
- Parking revenues, along with any increased costs associated with the program.

IV. FUTURE DIRECTIONS

Parking pricing is an effective strategy for reducing commuter auto use. It deserves continued attention and implementation in the future. Additionally, certain effectiveness and implementation issues deserve attention in future applications:

Effectiveness

Parking pricing has demonstrated effectiveness in both the public and private sector, as well as in both urban and suburban settings. However, important questions remain:

- For pricing to be effective on a regional basis, a key question is what participation rates can be expected among private and public employers over a region?
- What pricing concepts are best suited to various types of industries and businesses?
- In what situations can pricing be expected to divert the most commuters to alternative modes instead of alternative locations?
- In what situations can the least diversion from transit to car-pooling be expected, and the most reductions in solo driving?
- What pricing levels are required to make significant mode use changes?

- What are the actual effects of ending early bird specials, of cashing out employer subsidies of employee parking, of changes in parking taxes, all of which appear potentially promising, but where experience is limited.

More testing and evaluation aimed at these issues should be encouraged.

Implementation

Implementation of parking pricing entails detailed and site specific analysis of several implementation issues:

- What are best ways to institute parking permit schemes, especially ways to enforce and distribute permits?
- What are the best ways to end early bird parking rates, through negotiation, regulation or tax incentives?
- What are most and least promising corporate settings for removal of employer parking subsidies through cash out?
- What are are best and most acceptable ways for the cash out to be implemented, by salary increase or travel allowance or other?
- Under what conditions can parking taxes be expected to generate positive net revenues for the public sector while minimizing revenue losses to commercial parking operators?
- What are best ways to collect and audit parking taxes collected through operators, while insuring pass through of the tax to commuters?

How can parking pricing be implemented regionally, through conditions on funding, air quality regulations, cooperative agreements or other?



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Footnotes

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