



# Who Pays for Parking?

How the oversupply of parking undermines housing affordability

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## Executive Summary

An analysis of 23 recently completed Seattle-area multifamily housing developments reveals that the practice of providing abundant “cheap” parking actually makes rental housing more expensive—particularly for tenants with modest incomes and who don’t own cars. This analysis shows that:

- ◆ **Seattle-area apartment developers build far more parking than their tenants need.** Across all developments in our sample, 37 percent of parking spots remained empty during the night, the time of peak demand for residential parking. Every development had nighttime parking vacancies, and four developments had more than twice as many parking spots as parked cars.
- ◆ **Many tenants don’t own cars.** On average, the developments in our sample had 20 percent more occupied apartments than occupied parking spaces—a rock-bottom estimate for the share of apartments whose tenants don’t park on-site. In all, 21 of the 23 developments had more occupied apartments than parked cars.
- ◆ **Multifamily developments lose money on parking.** No development in our sample was able to recover enough parking fees to recover the full estimated costs of building, operating, and maintaining on-site parking facilities.
- ◆ **Car-free tenants still pay for parking.** Landlords’ losses on parking—calculated as the difference between total parking costs and total parking fees collected from tenants—add up to roughly 15 percent of monthly rents in our sample, or \$246 per month for each occupied apartment. Because landlords typically recoup these losses through apartment rents, all tenants—even those who don’t own cars—pay a substantial hidden fee for parking as part of their monthly rents.

## Introduction

Donald Shoup's seminal 2005 book, *The High Cost of Free Parking*, has convinced a growing audience that "free" parking is never free. As Shoup points out, somebody pays to build, operate, and maintain parking spaces. The public pays through higher taxes and fees. Consumers pay through higher retail prices. Developers and property owners pay through higher construction costs. And tenants pay through higher rents. Even when drivers do pay to park, Shoup argues, the fees often cover just a fraction of the true costs of vehicle storage.<sup>1</sup>

Shoup's argument raises a provocative question: *who actually pays for parking in multifamily rental housing?*

This study aims to provide a quantitative answer to this question. It examines a sample of multifamily rental housing developments in King County, Washington, to estimate the hidden subsidies that Seattle-area tenants—even those without cars—pay for on-site parking.

At the outset of this research we interviewed several Seattle-area multifamily housing developers about how parking affects the region's rental housing market. These developers uniformly agreed that apartment complexes in greater Seattle generally provide more parking than their tenants use. At the same time, they said, tenants can often find free or inexpensive off-site options for storing their vehicles. The resulting parking "glut" depresses the market price for parking, preventing landlords from recouping enough from parking fees to cover the comprehensive costs of on-site parking. As a result, virtually all Seattle-area landlords lose money on parking. To recoup these losses, these interviews suggested, landlords essentially must devote a portion of their tenants' monthly rents to cover the full costs of building, operating, and maintaining on-site parking facilities.<sup>2</sup>

We used data on the King County multifamily housing market to test these developers' perceptions about the dynamics of the Seattle-area parking markets. In 2012, King County collected data from more than 200 multifamily developments within the county. For each development, the county collected data on occupancy rates, apartment rental costs, any fees charged for on-site parking, and the number of parking spaces occupied in the middle of the night, when residential demand for parking peaks.<sup>3</sup> To minimize complications from inflation, interest rate changes, and price inflation during the housing "bubble," we restricted our attention to buildings completed in 2008 or later, and to developments intended for rental markets rather than condominium sales. We also excluded recently opened buildings with high vacancy rates. Ultimately, we focused our investigation on 23 multifamily housing developments in King County: 18 within the city of Seattle, and 5 sites located elsewhere in the county, varying widely in size, location, monthly rent, land value, and other attributes. We then used a well-documented parking cost estimation tool to assess the cost of building, maintaining, and operating parking facilities at these sites. (See Appendix: Methodology for a more complete description of our data sources and estimates.)

## Findings

Every housing development in our sample had vacant parking spots at night, when demand for residential parking peaks. (See Table 1.) All told, 37 percent of residential parking spots in our sample remained empty during peak hours. Four housing developments in our sample had more than twice as many parking spots as parked cars.

*Every housing development in our study loses money on parking.*

In addition, we estimate that every housing development in our study loses money on parking. (See Table 2.) Building owners lose money on unoccupied spots, for which they collect no fees. But they also lose money on spots for which tenants do pay: at no development in our sample did the monthly parking fee paid by a tenant to rent a parking space cover the full amortized monthly costs of building, operating, and maintaining that space.

In all, we estimate that landlords' losses on parking averaged \$246 per occupied apartment unit across our sample. Comprehensive parking losses ranged from 3 percent to 42 percent of apartment rents among the developments in our sample, with a weighted average of 15 percent for the sample as a whole. (See Table 3.)

Among the 23 buildings we examined, 21 had more occupied housing units than parked cars during the nights on which King County collected data—indicating that some tenants in those buildings did not park on-site, either because they don't own a vehicle, or because they park elsewhere. All told, the tenants in at least 20 percent of occupied apartments across our sample did not utilize on-site parking. (See Table 4.)

To illustrate these estimates, consider development "M," listed in Appendix 1. Table 1 shows that 34 of the development's 74 parking spots were occupied on the night in which data was collected—a vacancy rate of 54 percent. Table 2 shows that the losses on parking totaled \$324 per month for each occupied apartment. Table 3 shows that Apartment M charged tenants \$75 per month for an on-site parking space—and that the estimated monthly costs of that space, including amortized construction costs, operations costs, and maintenance expenses, exceeded the monthly fee by \$213 per space. Table 4 shows that the tenants in at least 41 percent of M's occupied apartments did not park on-site.

## Discussion and Conclusions

Our findings confirm developers' perceptions that a pervasive "glut" in the parking market depresses the market price of parking. Each development in our sample had more parking than its tenants used. And not a single development we examined was able to collect enough in parking fees to cover the comprehensive costs of providing on-site parking facilities. Since our survey includes a large share of the recently completed multifamily housing developments in greater Seattle, tenants looking for new apartments may have little choice but to live in a building that loses money on parking.

The reasons for the oversupply of parking in greater Seattle exceed the scope of this report. But the glut likely arises from a constellation of causes, including:

- ◆ local zoning codes that have required multifamily housing developers to provide more on-site parking than tenants actually use or need;
- ◆ public policies that offer free or low-cost parking on streets and other public right-of-ways;
- ◆ demands by lenders that developers build an overabundance of parking, perhaps out of concern that buildings without abundant parking won't attract or retain tenants;
- ◆ strategic decisions by developers to provide more parking than tenants will purchase, giving landlords the option to offer free or low-cost parking as an incentive to quickly fill vacancies;
- ◆ the “lumpiness” of parking supply—particularly that developers find it only slightly more costly to build an entire floor of above-ground or underground parking than to build a portion of a floor.

Regardless of the reasons for the parking glut, the fact that developers provide abundant (and often unneeded) on-site parking significantly increases the supply-side costs of building new multifamily rental housing. Economic theory posits that higher supply-side costs reduce the amount of new housing that is built. A scarcity of new housing, in turn, boosts rents. In the end, then, the pervasive oversupply of parking increases housing prices, allowing landlords to recoup their losses on parking by charging higher rents.<sup>4</sup>

As mentioned above, we estimate that the developments in our sample incurred losses on parking ranging from 6 percent to 42 percent of monthly apartment rents, or an average of \$246 per apartment per month. Assuming that landlords generally recover losses on parking through the rents they charge their tenants, an average of 15 percent of tenants' rental payments in our sample cover the building's losses on parking. In short, the tenants of the buildings in our sample—even those who didn't park on-site—paid for on-site parking through their rent.

*Tenants looking for new apartments may have little choice but to live in a building that loses money on parking.*

This dynamic raises serious equity concerns. It means that tenants who don't own a private vehicle—because they can't drive, choose not to drive, or can't afford to own a car—may still pay a hefty price for parking. Even tenants who do park on-site at these developments may pay far more for parking than they realize. If presented with an itemized bill for the full cost of parking, tenants who currently park might make different choices about where to park, or even whether to own a private vehicle at all. But since the costs of parking are essentially hidden in monthly rental payments, tenants have little information about the real price they pay for parking.

The hidden price of parking appears to make housing less affordable. Although most of the new housing in our sample was priced for the middle to upper end of the rental housing market, two buildings had average monthly rents of less than \$850. At these lower-priced buildings, we estimate that parking losses represented a comparatively high share of monthly rent: 22 percent and 35 percent, respectively—suggesting that car-free tenants at the lower end of the new housing market bear a particularly high burden in paying for parking spaces that they don't use.

We found that, all else being equal, the more parking spaces a development provides for each tenant, the more money the development loses on parking.<sup>5</sup> Yet we found no evidence that tenants are willing to pay a premium to live in rental housing with an overabundance of parking. Together, these facts suggest a pervasive market failure: many rental housing developers spend significant amounts of money over-providing an amenity on which tenants themselves apparently place little value.

Although our findings raise troubling questions about the effects of parking on fairness, equity, and affordability in the housing market, they also point to a lucrative business opportunity for developments with little or no on-site parking. At least 20 percent of the units in our sample had been leased by tenants who didn't use on-site parking. This suggests that developments with minimal on-site parking might still be able to attract a large number of tenants. In theory, such developments could save on supply-side parking costs, putting them in a position to offer a combination of lower construction costs for developers, higher profits for landlords, and lower rents for tenants. All of these actors in the housing market could reap a benefit from business practices and zoning policies that allow Seattle-area developers to provide some housing with little or no on-site parking.

*Our findings point to a lucrative business opportunity for developments with little or no on-site parking.*

## About the Authors

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**Sightline Institute** is a not-for-profit research and communications center—a think tank—based in Seattle. Sightline's mission is to make the Northwest a global model of sustainability—strong communities, a green economy, and a healthy environment.

## Appendix 1: Data Tables

**Table 1. Parking Vacancy Rates**

At recently-constructed apartment developments in King County, an average of 37 percent of parking spots remained vacant during the nighttime hours of peak demand.

Building	Number of parking spots	Occupied spots	% vacant spaces
A	172	139	19%
B	254	192	24%
C	121	116	4%
D	12	11	8%
E	169	121	28%
F	241	107	56%
G	78	50	36%
H	36	27	25%
I	265	155	42%
J	165	115	30%
K	259	202	22%
L	341	200	41%
M	74	34	54%
N	70	51	27%
O	47	36	23%
P	137	122	11%
Q	67	66	1%
R	57	49	14%
S	814	391	52%
T	274	212	23%
U	94	55	41%
V	586	330	44%
W	156	55	65%
<b>Total</b>	<b>4,489</b>	<b>2,836</b>	<b>37%</b>

## Table 2. Overall Losses on Parking

All of the apartment buildings in our sample lost money on parking.

Building	Occupied apartments	Average rent per apartment	Total losses on parking at development (parking fees collected minus parking costs)	Parking losses per occupied apartment	Parking losses as a share of average rent
A	243	\$1,186	(\$30,080)	(\$124)	10%
B	311	\$2,390	(\$25,223)	(\$81)	3%
C	176	\$1,431	(\$27,311)	(\$155)	11%
D	17	\$812	(\$3,014)	(\$177)	22%
E	130	\$1,587	(\$39,601)	(\$305)	19%
F	144	\$1,633	(\$56,039)	(\$389)	24%
G	54	\$1,900	(\$16,216)	(\$300)	16%
H	52	\$1,163	(\$7,534)	(\$145)	12%
I	187	\$1,966	(\$56,952)	(\$305)	15%
J	152	\$1,208	(\$42,637)	(\$281)	23%
K	260	\$2,031	(\$48,339)	(\$186)	9%
L	240	\$1,542	(\$73,217)	(\$305)	20%
M	58	\$1,695	(\$18,764)	(\$324)	19%
N	71	\$846	(\$20,162)	(\$284)	34%
O	76	\$1,694	(\$8,137)	(\$107)	6%
P	131	\$1,570	(\$32,140)	(\$245)	16%
Q	113	\$1,777	(\$9,398)	(\$83)	5%
R	77	\$1,543	(\$9,067)	(\$118)	8%
S	320	\$1,470	(\$127,411)	(\$398)	27%
T	232	\$1,606	(\$66,199)	(\$285)	18%
U	44	\$1,268	(\$13,956)	(\$317)	25%
V	372	\$1,737	(\$99,786)	(\$268)	15%
W	66	\$1,457	(\$37,862)	(\$574)	39%
<b>Weighted Average</b>		<b>\$1,646</b>		<b>(\$246)</b>	<b>15%</b>

### Table 3. Losses on Occupied Parking Stalls

Even buildings that charge fees for parking lose money on the parking spaces they rent out.

Building	Monthly price charged for an on-site parking space	Estimated monthly losses (price minus costs) for an occupied parking space
A	\$140	(\$148)
B	\$180	(\$55)
C	\$65	(\$223)
D	\$0	(\$251)
E	\$75	(\$213)
F	\$125	(\$163)
G	\$125	(\$163)
H	\$105	(\$183)
I	\$125	(\$163)
J	\$43	(\$246)
K	\$130	(\$158)
L	\$125	(\$163)
M	\$75	(\$213)
N	\$0	(\$288)
O	\$150	(\$138)
P	\$60	(\$228)
Q	\$150	(\$138)
R	\$150	(\$138)
S	\$50	(\$131)
T	\$60	(\$228)
U	\$50	(\$238)
V	\$100	(\$174)
W	\$50	(\$238)
<b>Weighted Average</b>	<b>\$93</b>	<b>(\$170)</b>



## Table 4. Share of Tenants Who Don't Park

The tenants in at least twenty percent of occupied apartments either do not own cars or did not park on-site.

Building	Occupied apartment units	Occupied parking spots	Minimum share of units whose tenants don't park onsite
A	243	139	43%
B	311	192	38%
C	176	116	34%
D	17	11	35%
E	130	121	7%
F	144	107	26%
G	54	50	7%
H	52	27	48%
I	187	155	17%
J	152	115	24%
K	260	202	22%
L	240	200	17%
M	58	34	41%
N	71	51	28%
O	76	36	53%
P	131	122	7%
Q	113	66	42%
R	77	49	36%
S	320	391	0%
T	232	212	9%
U	44	55	0%
V	372	330	11%
W	66	55	17%
<b>Weighted Average</b>	<b>3,526</b>	<b>2,836</b>	<b>20%</b>

## Appendix 2: Methodology

In 2012, King County collected data from more than 200 multifamily developments within the county. The county gathered the data for use in its federally funded Right Size Parking program, through which the county aimed to model actual parking needs for residential development.

For each development it sampled, the county collected data on occupancy rates, apartment rental costs, any fees charged for on-site parking, and the number of parking spaces occupied in the middle of the night, when residential demand for parking peaks.<sup>6</sup>

To minimize complications from inflation, interest rate changes, and price inflation during the housing “bubble,” we restricted our sample to buildings completed in 2008 or later, and to developments intended for rental markets rather than condominium sales. We also excluded recently opened buildings with high vacancy rates. Ultimately, we focused our investigation on 23 multifamily housing developments in King County: 18 within the city of Seattle, and 5 sites located elsewhere in the county. The sites varied widely in size, location, monthly rent, land value, and other attributes.

For each of these developments, we made a variety of estimates about parking costs and conditions:

- ◆ **The one-time cost of parking construction.** We used a spreadsheet tool maintained by the Victoria Transportation Policy Institute (VTPI) to estimate the costs of building parking facilities at each multifamily housing development.<sup>7</sup> Based on our conversations with Seattle-based developers, the tool appears to provide reasonable, if somewhat conservative, estimates of supply-side parking costs in greater Seattle.
- ◆ **The total monthly cost of providing on-site parking.** To estimate the amortized monthly costs of parking construction, we calculated the monthly payments on a loan for up-front parking construction costs, as estimated by VTPI’s parking cost tool, assuming a 6 percent annual interest rate and 20 year term. In addition, we estimated monthly parking operations and maintenance costs using VTPI’s parking cost tool.
- ◆ **Monthly revenues from parking.** For each housing development in our sample, we multiplied reported monthly fees per parking space at each building by the reported number of occupied parking spots at that building, yielding an estimate of total monthly revenues from parking.
- ◆ **Monthly losses on parking.** Subtracting total monthly parking costs from total monthly parking revenues yielded an estimate of the total monthly loss on parking for each development.

- ◆ **Monthly parking losses per tenant.** We divided total monthly parking losses at each building by the total number of occupied apartment units at that building.
- ◆ **Number of units with non-parking tenants.** We estimated the minimum number of apartments whose tenants don't park on-site by subtracting the number of parking spots occupied at night from the number of occupied apartment units.

## Sources

1. Shoup, Donald C. *The High Cost of Free Parking*. Chicago: Planners, American Planning Association, 2005. Print.
2. The developers we interviewed emphasized that in many ways parking is no different than other shared amenities at a multifamily housing development: landlords also “lose” money on landscaping, elevators, lobbies, and exercise facilities, and must build the costs of such shared amenities into apartment rents. Parking may differ from these other amenities in at least one crucial way: developers don't always provide a surplus of parking in order to attract tenants, but sometimes do so to satisfy local zoning codes or to reassure financiers who believe, perhaps without sufficient evidence, that high levels of onsite parking are necessary to attract and retain renters.
3. For more information on King County's data collection, see the Right Size Parking project, King County Multi-Family Residential Parking Calculator, <http://www.rightsizeparking.org/background.php>. Staff at the Right Size Parking project generously provided data for this study.
4. For a general discussion of the economic effects of higher supply costs on supply and prices, see, *inter alia*, James D. Gwartney *et al.*, *Common Sense Economics*, “Supplement Unit 1. Demand, Supply, and Adjustments to Dynamic Change,” <http://commonsenseeconomics.com/wp-content/uploads/2012/09/Demand-and-Supply-CSE-2010-w-Price-Controls-Reading.pdf>. For a more in-depth look at the ways that parking affects housing costs and supply, see Alan Durning, “Apartment Blockers,” Sightline Institute, August 22, 2013, <http://daily.sightline.org/2013/08/22/apartment-blockers/>.
5. Statistically, the coefficient of determination between parking ratio and parking losses equaled 0.82—meaning that variations in parking ratio explained 82 percent of the variations in parking losses among our sample of developments.
6. For more information on King County's data collection, see the Right Size Parking project, King County Multi-Family Residential Parking Calculator, <http://www.rightsizeparking.org/background.php>. Staff at the Right Size Parking project generously provided data for this study.
7. Todd Litman, “Transportation Cost and Benefit Analysis II – Parking Costs,” Victoria Transportation Policy Institute, <http://www.vtpi.org/tca/tca0504.pdf>.

Cover photo “Best parking lot” by [Mait Jüriado](#).