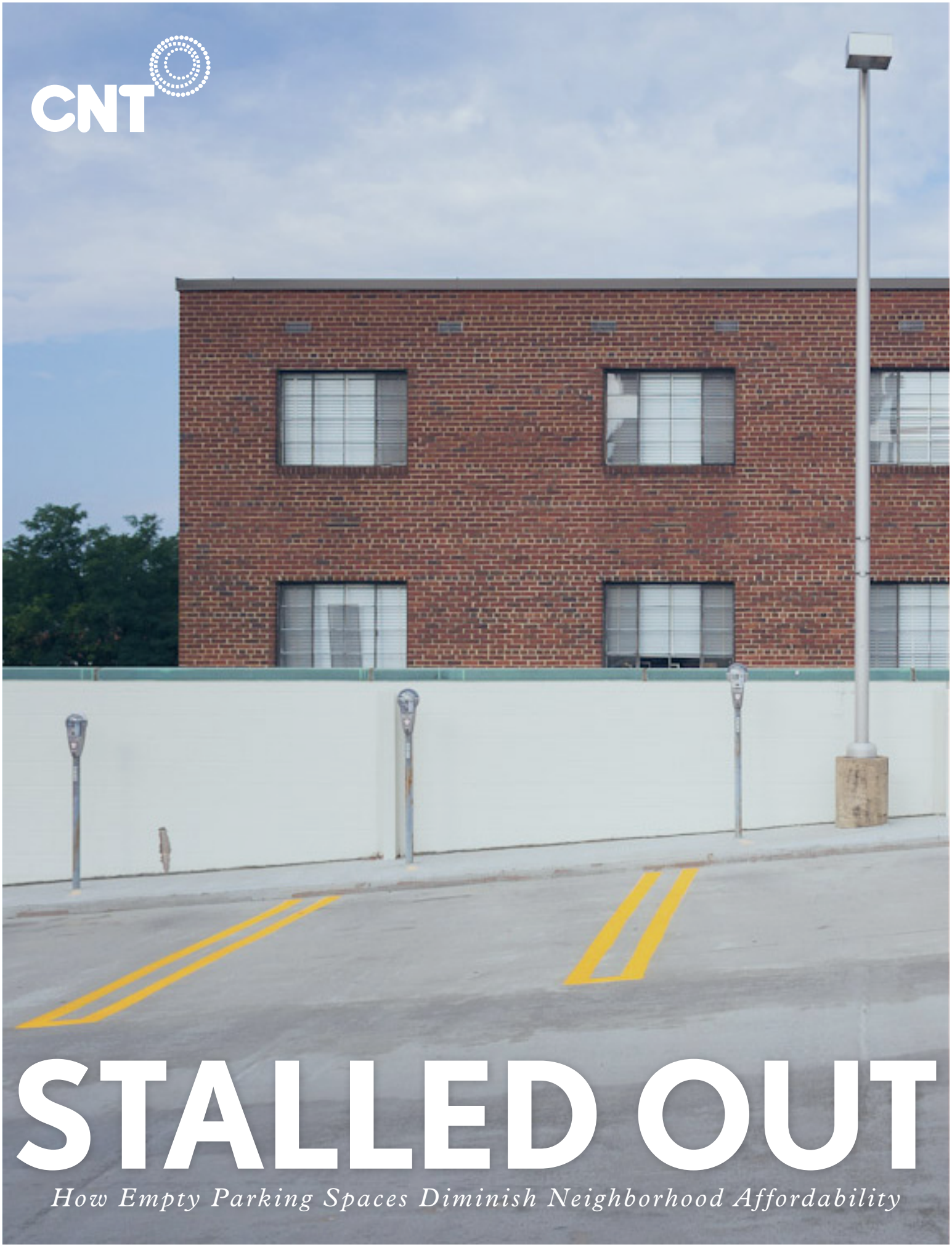


CNT

STALLED OUT

How Empty Parking Spaces Diminish Neighborhood Affordability

CONTENTS

1 **Introduction**

3 **The Problem with Parking Minimums**

6 **Parking in the Chicago Region**

9 **Research Findings**

14 **Policy Toolkit**

21 **Conclusion**

22 **Acknowledgements**

23 **About CNT**

Stalled Out

How Empty Parking Spaces Diminish Neighborhood Affordability

PREPARED BY
THE CENTER FOR NEIGHBORHOOD TECHNOLOGY

FUNDED BY
SEARLE FUNDS AT THE CHICAGO COMMUNITY TRUST

MARCH 2016

Cover photo by Andrew Benson, Flickr/Creative Commons

©2016 CENTER FOR NEIGHBORHOOD TECHNOLOGY

EXECUTIVE SUMMARY

Late at night, when Chicago sleeps, apartment parking lots are at their peak usage. When CNT visited those lots and garages at 4:00 a.m., though, we found one third of the parking spaces sitting empty.

This may not seem like a huge problem, but each indoor, underground parking space – one individual space – costs $37,300 to build. Multiply that by all of the spaces in the lot, and the price tag is huge. We think that wasted money and space should be allocated to housing instead.

As we began to dig into this issue, some important questions emerged. How does that unused parking impact communities? How much of it exists? And how can rethinking how much parking cities mandate promote neighborhoods that are more compact and affordable with access to frequent transit?

To find out, CNT interviewed multifamily developers in Chicago and found that when communities ask developers to build too much parking, those spaces add time and money to projects. They drive up construction costs and rents for market-rate units. And parking requirements hinder the development of affordable housing near transit because subsidy programs cannot account for the dual price premiums on parking and land.

We then applied CNT's pioneering approach to determining parking demand. When we built parking calculators for King County, Washington; the San Francisco Bay Area; and Washington, D.C., we visited parking lots and garages at 4:00 a.m., when most renters have parked their cars and are asleep in bed. Across all three cities, we consistently found one third of those residential parking spots sitting empty. So we decided to take the same approach at 40 affordable and market-rate apartment buildings across Chicago.

Photo: miyagisan, Flickr/Creative Commons

Consistent with our research elsewhere, we discovered that:

- **THE SUPPLY OF PARKING EXCEEDS DEMAND.** Buildings offered two spots for every three units. In reality, they only needed one for every three.
- **AS PARKING SUPPLY GOES UP, MUCH OF IT SITS EMPTY.** Apartments with fewer spaces saw a greater percentage of their parking used.
- **APARTMENT BUILDINGS NEAR FREQUENT TRANSIT NEED LESS PARKING.** Buildings within ten minutes of a Chicago Transit Authority (CTA) train stop had one spot for every two units. Even then, one third of their spots sat empty.
- **THE OPPORTUNITY COSTS ADD UP.** If we applied these numbers to a 100-unit building near the CTA system, the empty parking spaces would add up to $825,000 in wasted construction costs.

Municipalities often mandate at least one parking space per new housing unit, even for buildings near transit stops. But with so many costly parking spaces already sitting empty, communities should rethink parking as a resource to be managed so that supply and demand can be more in sync. If that happens, parking costs decrease and the supply of market-rate units can expand. Affordable housing developers can stretch subsidies further. And land could be used more efficiently for retail, services, and amenities, making it easier to get to them without driving. This would reduce parking demand even more.

This report shows how it can be done:

1. Municipalities must right size their parking requirements to reflect the real demand for off-street parking near transit and create incentives to pass on the savings through affordable rents.
2. Developments only need a handful of spots when they include access to amenities like transit, car sharing, and bicycle sharing.
3. Good data can support more productive conversations when low-parked buildings are proposed at neighborhood meetings.

Chicago and its northern neighbor Evanston recently reduced parking requirements around transit for developers that include affordable housing. Regionally, however, high minimum parking requirements are still the norm. The data and recommendations in this report lay the framework for transit-oriented development that puts people before cars and passes on the value savings through more affordable rents.

Together, we can build communities with room for parking, amenities, and housing available to everybody. This report shows the way.

INTRODUCTION

A century ago, Chicago was a great walking city. Like America's other great walking cities, it came of age on an urban grid. In those days, land development wasn't as tightly regulated as it is today, and there were no zoning codes to keep homes and retail apart. Neighborhood development made efficient use of the city's grid by lining main transportation thoroughfares with shops and multifamily homes. The rest of the grid was filled in with smaller residential buildings on quiet side streets a short walk away. As a result, compact neighborhoods grew, many of which provided a mix of housing types at different price points with access to jobs, amenities, and public transportation. Then the car arrived, transforming urban transportation. An open question emerged: how do cars fit into communities designed for people?

For decades, planners answered this question through single-use zoning with parking minimums. Zoning laws divide properties by use – residential, commercial, industrial – and often require a minimum number of parking spaces on each property. Instead of coordinating land-use plans to maximize the community's overall accessibility, interconnectedness, and affordability, neighborhood development became focused on the end use of each individual parcel.

Naturally, requiring developers to carve out land for parking restricts what could be done with a property. In Chicago, developers could no longer build in the style of the vintage apartment buildings that provided decent and affordable housing. Only developments with parking spaces were legal, leaving less space for housing units and more space for cars. In the suburbs, developers built multifamily rental in isolated locations where cheap land and favorable zoning made it easier to surround their buildings with a sea of desolate surface parking. In both city and suburbs, travel became less efficient and communities became more disconnected. It became difficult to do even basic daily errands without a car, further escalating the perceived need for parking and the cost of transportation.

After decades of developing for cars, the market has flipped. Parking became more expensive as walkable, transit-friendly neighborhoods grew increasingly popular. Today, developers interviewed in surveys like the *ULI/PWC Emerging Trends of Real Estate* report talk about repurposing and better utilizing existing parking lots and garages, reducing the construction costs of parking, and developing in line with the public's demand for compact communities with easy access to jobs and amenities. Communities with a high quality of life will always need some parking, but it is critical to "right size" parking at a level below current public standards. This report is about achieving that right size for parking to increase neighborhood accessibility and affordability.

By treating parking as a resource to be managed, and not a mandate to be met, communities can apply the savings

1. Urban Land Institute and PriceWaterhouseCoopers. *Emerging Trends in Real Estate 2016.*

from reduced parking spaces to building communities with a better mix of housing, transportation, and amenities. The tight housing supply could be expanded by applying the savings to new market-rate units. Additional affordable units could be developed from existing sources of subsidy. Buildings could preserve spaces for shared-use mobility or offer transit passes bundled into the rent to give people a broader range of mobility options. More land could be used for retail, services, amenities, and institutions in convenient locations, making it easier for neighborhood residents to reach them without driving.

Better understanding of parking demand and adopting policies to right-size parking can repurpose underutilized space to meet broader development and affordability goals. CNT has found that:

- **THE COST OF AN INDIVIDUAL PARKING SPOT IN CHICAGO CAN BE AS MUCH AS $37,300,** and this bears significant opportunity costs in increased housing prices, constraints on affordable housing development, and the efficient use of land.
- **PARKING MINIMUMS ADD TIME AND COST TO CHICAGO-AREA TRANSIT-ORIENTED DEVELOPMENTS.** In particular, this discourages developing affordable housing near transit, where the cost of land comes at a premium.
- **ON AVERAGE, ONE THIRD OF OFF-STREET RESIDENTIAL PARKING SITS EMPTY AT NIGHT.** This is a large and unnecessary gap between supply and demand. We collected this data at more than 41 buildings based on methods CNT developed in the San Francisco Bay Area, Seattle, and Washington, D.C.
- **ALTERNATIVE APPROACHES EXIST.** Recognizing the burden of unused residential parking on project cost and community accessibility, communities and developers are beginning to develop creative, alternative approaches that better align parking supply with demand.

CNT has been working with planners and researchers across the United States to find solutions to these problems. In King County, Washington, for example, CNT worked to develop an empirically based model for parking requirements. Local researchers went into buildings at 3 a.m. to measure the number of parking spaces that were actually used, and then CNT developed a model that related the number of occupied parking spaces to population, job density, the size of units and distance from transit. CNT found that the number of spaces required through zoning exceeded the demand for spots by 35%. CNT also brought this approach to the San Francisco Bay Area and to Washington D.C. CNT co-authored a paper on parking utilization in Washington, D.C., that was selected by the Transportation Research Board as the best transportation and land use paper of 2016.[2]

PARKING IS A RESOURCE. SO IS LAND FOR DEVELOPMENT.

EVERY COMMUNITY NEEDS SOME PARKING, BUT WITH THE RIGHT SIZE OF SUPPLY, NEIGHBORHOODS CAN TILT THE SCALES TO DEDICATE MORE SPACE TO PEOPLE THAN TO CARS. THIS IN TURN WILL ALLOW US TO CREATE BETTER CONNECTED, MORE SPATIALLY EFFICIENT, AND MORE AFFORDABLE COMMUNITIES.

THIS REPORT SHOWS THE WAY.

2. Jonathan Rogers, Dan Emerine, Peter Haas, David Jackson, Peter Kauffmann, Rick Rybeck, and Ryan Westrom. "Estimating Parking Utilization in Multi-Family Residential Buildings in Washington, DC". Transportation Research Board 95th Annual Meeting, January 2016.

THE PROBLEM WITH PARKING MINIMUMS

As research across the country has discovered, parking minimums can take a significant toll on communities and regions. They can decrease the affordability of a unit or a neighborhood, reduce living space to make room for automobile storage, and encourage driving. Overall, parking minimums can:

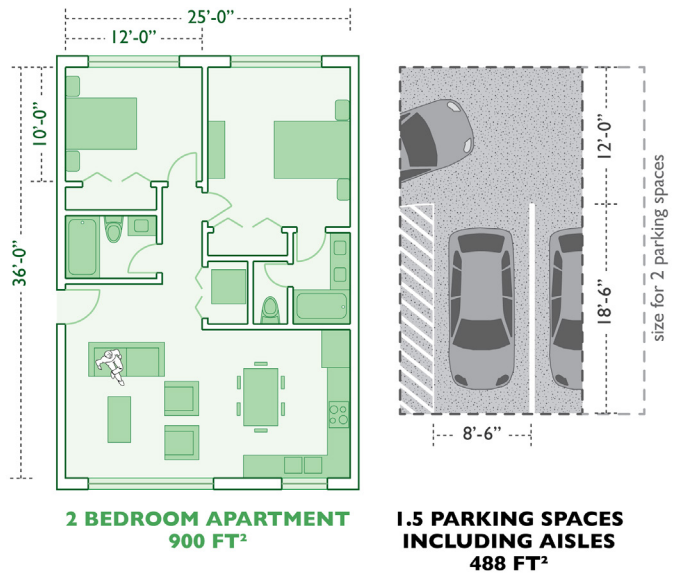
MAKE MARKET-RATE HOUSING MORE EXPENSIVE. In the Chicago region, the cost of constructing a single parking space can vary between $4,200 in a surface lot to $37,300 in an indoor, underground parking garage.[3] As studies in other regions have demonstrated, "free" parking is not actually free, because developers pass these costs on to owners and renters. In San Francisco, for example, parking requirements have increased housing costs by 10%.[4] In Los Angeles, a parking spot included with a unit adds roughly $200 to its monthly rent, or $40,000 to its selling price.[5] And even when parking is not included with rent, property managers lose money when it sits empty. Unused parking was equivalent to a loss of 15% of rents in Seattle in 2013.[6]

REDUCE THE NUMBER OF AFFORDABLE HOUSING UNITS. In a subsidized housing development, every dollar spent on parking for cars is a dollar not spent on housing for people. A 2014 report found that a non-profit developer would need a $4,000 subsidy to provide housing without parking at an $80,000 purchase price aimed at a family earning $30,000 a year.[7] Requiring two parking spaces increases this funding gap to $26,251.[8] Keeping the cost of construction constant, those limited subsidy dollars could fund 6.5 times as many units if allocated entirely toward housing with no parking. Costly parking requirements can also prevent the preservation and development of Single Room Occupancy (SRO) units, which are critical for transitional residents who are unlikely to own automobiles. In San Diego in the 1980s, affordable housing opponents derailed an SRO preservation strategy by requiring one parking space per room, making construction costs for new SROs prohibitively expensive.[9]

3. Donald Shoup, High Cost of Minimum Parking Requirements – numbers have been inflation adjusted for the Chicago market, 2012-5 –(Original Source: Rider Levett Bucknall, Quarterly Construction Cost Report, Third Quarter (2012)
4. Weynu Jia and Martin Wachs. "Parking and Affordable Housing." Access Magazine, Number 13, Fall 1998.
5. Michael Manville, "Parking Requirements and Housing Development: Regulation and Reform in Los Angeles." Access Magazine, Number 44, Spring 2014.
6. Jesse London and Clark Williams-Derry, Sightline. "Who Pays for Parking? How the oversupply of parking undermines housing affordability."
7. Todd Litman, Victoria Transport Policy Institute. "Parking Requirements on Housing Affordability." June 11, 2014.
8. Todd Litman, 2014.
9. Michael Manville and Donald Shoup. "Parking requirements as a barrier to housing development: regulation and reform in Los Angeles." University of California Transportation Center, UCTC-FR-2010-03.

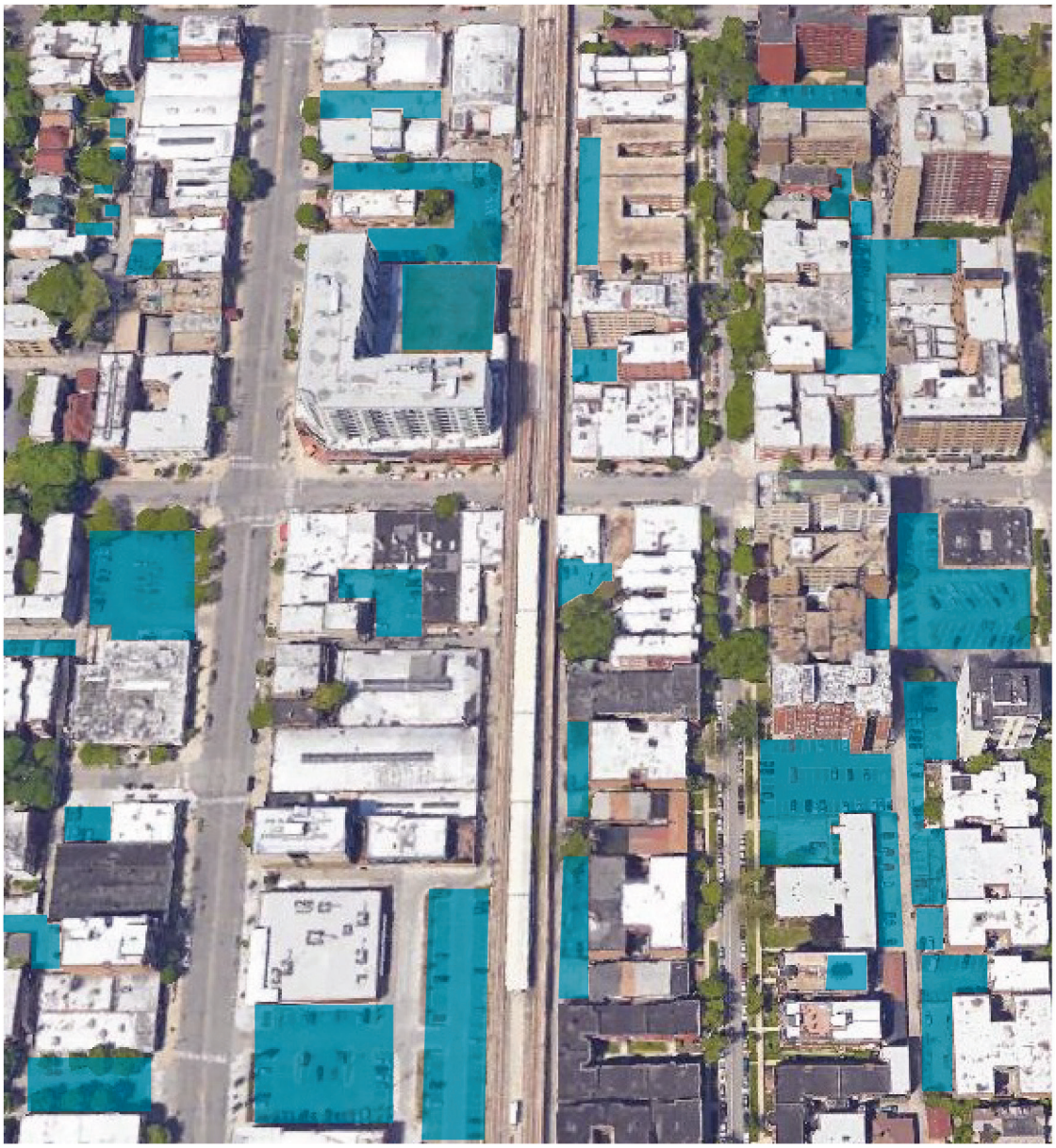
REGRESSIVELY CHARGE THE POOR, OLD, YOUNG, AND DISABLED, WHO SUBSIDIZE TRANSPORTATION FOR THE RELATIVELY MORE AFFLUENT. Parking minimums typically require that a development provide the same number of spaces for every type of building, even those that attract tenants less likely to own a car, such as people who are poor, old, young, and/or disabled. When the price of parking is bundled into rents, tenants who do not own cars effectively subsidize spaces for those who do. In Cook County, Illinois, one third of renters do not own a car.[10] Among renters older than 65, more than half (55%) do not own a vehicle.[11]

ENCOURAGE PEOPLE TO OWN MORE CARS AND DRIVE MORE. When parking is provided, residents are more likely to drive than use alternatives like public transit. Vehicle trip generation rates increase when the supply of parking spaces increases.[12] Residents of neighborhoods with standard parking minimums are 28% more likely to drive to work than residents of similar neighborhoods without them.[13] In New York City, residents of new developments that provide parking are 45% more likely to own cars than the typical New Yorker. And a recent national study found that as a city increases the number of available spaces from 0.2 to 0.5 per person, the share of commutes by car rises from 60% to 83%.[14] For a typical moderate-income household in Cook County, the cost of an automobile costs $6,818, and this pushes out both discretionary spending and funds for needs like education, health care, and retirement.[15]



Graphics used with permission from GraphingParking.com

CROWD OUT DEVELOPMENT. Parking requires a lot of space. When the stall, turning radii, lanes, and ramps are factored in, each parking space requires about 350 square feet.[16] That square footage adds up and competes with other uses within the building. For example, a ten-unit building with 20 parking spaces would require 7,000 square feet for parking that could instead house five new units at 1,000 square feet apiece, twenty bicycle spaces at 12.5 square feet apiece, and three parking spaces dedicated to shared vehicles, with 700 square feet to spare. When an infill development provides one parking space per unit, it may see a 25% decrease in the number of units provided on site when compared to a development without any parking at all.[17] For projects running on affordability subsidies, this reduction of units greatly impacts whether a project's development costs pencil out and can proceed toward construction.



In many Chicago neighborhoods, a large portion of land is dedicated to housing vehicles, at the expense of other uses.

Edgewater is one of the city's densest neighborhoods, but significant amounts of land are dedicated to parking.

10. ACS, 2000-2014
11. ACS, 2000-2014, Tenure by Vehicles Available by Age of Householder
12. Robert Cervero and G.B. Arrington, "Vehicle Trip Reduction Impacts of Transit-Oriented Housing." Journal of Public Transportation, Vol 11, No 3, 2008.
13. Todd Litman and Rowan Steele, Victoria Transport Policy Institute. "Land Use Impacts on Transport: How Land Use Factors Affect Travel Behavior," 27 January 2015.
14. http://www.citylab.com/commute/2016/01/the-strongest-case-yet-that-excessive-parking-causes-more-driving/423663/?utm_source=nl__link3_011216
15. CNT, "Housing + Transportation Affordability Index." http://htaindex.cnt.org/
16. US Environmental Protection Agency (USEPA). *Parking Spaces / Community Places: Finding the Balance Between Smart Growth Solutions.* January 2006.
17. USEPA.

PARKING IN THE CHICAGO REGION

Parking supply works when communities ask developers to provide the right number of spaces. But when it comes to transit-oriented development, too many communities employ one-size-fits-all parking minimums that don't often align with the number of cars that households near transit tend to own. Take downtown Evanston, for example. Between Metra and CTA trains, eight CTA and Pace bus lines, and seven car share vehicles, residents have many options to reach jobs and amenities. Over half of residents around the Davis Street stations take transit, walk, or bike to work. With all of these options available, households within a five-minute walk of Davis owned less than one car on average in 2010. Renters within a five-minute walk of Davis owned only 0.7 cars on average. Yet, until recently, Evanston zoning standards typically require two cars per housing unit regardless of transit accessibility, forcing developers to build more parking than households need. Evanston has acknowledged this mismatch and has negotiated significantly lower parking levels in several recent Planned Developments and given parking reductions to buildings that provide some affordable housing units.

Photo: Steven Vance, Flickr/Creative Commons

Even when parking minimums have been reduced, a lack of community education can make it difficult for projects to proceed. The City of Chicago lowered parking requirements on some parcels near transit in 2013. The very first project proposed in response, a 48-unit apartment building near the Paulina Brown Line stop in Lakeview, proposed just nine parking spaces. With a CTA train stop, four CTA bus lines, four car share vehicles, a Divvy station, and 43% of the city's jobs accessible within a 30-minute transit ride, a wealth of transportation alternatives were in place.[18] As a result, 46% of commuters who lived near the station walked, biked, or used transit to get to work in 2011.[19] Among renters around the station, the share without vehicles increased by 32% between 2000 and 2011.[20] And among renters under 35, the target demographic for the project, the share without cars increased by 54%. Yet many neighbors were skeptical that this project could attract 39 tenants without cars. Similar conversations unfolded as other developers proposed projects with fewer parking spots across the city.

Interviews with market-rate and affordable developers confirm that when zoning standards or community processes result in excessive parking, significant project costs are incurred.[21] As noted above, the cost of providing parking in Chicago can range from $4,200 to $37,000 per space or higher, which is similar to national costs.[22]

18. CNT, AllTransit. http://alltransit.cnt.org/
19. American Community Survey Five-Year Estimates, 2009-2013. Data has been aggregated to the half-mile buffer around the Davis Street station.
20. ACS Five-Year Estimates, 2009-13.
21. CNT interviewed eight developers; individual perspectives are confidential but they are acknowledged at the end of this document.
22. Shoup, 2014.

Photo: @gueamu, Flickr/Creative Commons

These costs may vary significantly depending on the configuration of the parcel and timeline of the project. For example, should a project need to dig more than 12 feet underground within the City of Chicago, it must work through an additional city department, the Department of the Underground, which can add two to three months in increased permitting and insurance costs. On smaller parcels, it can be difficult to incorporate all of these spaces in a single floor of parking. The project would then require a parking ramp, which can make a project prohibitive unless rents will be high. This makes it particularly difficult to redevelop smaller parcels, like the shuttered gas stations or fast food restaurants that dot many commercial corridors, without assembling additional land to accommodate parking.

Finally, buildings with low levels of parking require community support. In the city of Chicago, real or perceived scarcity of on-street parking is exacerbated by Chicago's uneven permitting requirements, which require paid permits for spots on some streets but not others. Fearing increased competition for those on-street spaces, residents may pressure a developer to include more off-street spaces than originally proposed. In the absence of good data on the right amount of parking in a particular neighborhood, a low-parked building can become mired in a lengthy negotiation process, which loses time and increases carrying costs.

Moreover, when developments provide more than the right size, the unneeded construction costs can kill deals in some neighborhoods. Developers interviewed for this report have noted that even when parking is bundled into rents, or unbundled and offered at a fair market price, a project never fully recoups the full cost of developing and maintaining it. In moderately priced markets, or for projects with lower rents, this can prevent projects from proceeding. In some cases, inflexibility or uncertainty around parking requirements can dissuade an investor from proposing a project at all. And even when developers, municipal planners, and neighbors all agree, a lender may refuse to underwrite a project that departs from typical parking practices. Fortunately, some lenders may now be loosening their standards as the market for multifamily rental, and in particular rental near transit, continues to accelerate.

Parking minimums disproportionately affect affordable housing projects and make it even harder to build units for low-income households with good access to transportation

options and jobs. Affordable housing developments delicately balance expenses and subsidies and have little room for added uncertainly or construction costs. Parking can significantly burden an affordable project. Subsidized buildings can typically only afford to add surface lots, which are cheaper than structured parking by several orders of magnitude. But the cost of land near transit often carries a premium, which makes it hard for subsidized projects to allocate land to an outdoor lot and still build enough units to recoup the cost of the land acquisition. Additionally, many affordable housing subsidies cap costs per unit. These standard caps don't take into account the high costs of building parking and acquiring land for parking lots, forcing developers to choose sites where land costs less but job and transit connections are sparse. Finally, Low Income Housing Tax Credits cannot be allocated toward public amenities, including shared parking, which means that projects must make parking exclusive to residents even when it could be shared with adjacent buildings.

Moreover, there is often even less need for parking at low-income and assisted housing developments. For example, while developers interviewed for this report find that their low-income tenants in suburban projects typically need and own just one vehicle, it is uncommon for them to own two, even when local zoning asks developers to provide two parking spaces. Projects built for senior citizens in the city of Chicago only require one stall for three units to serve residents, medical services, and visitors. Parking requirements for accessibility or Single Room Occupancy units can go even lower, as most residents lack a car, cannot afford one, and/or have an impairment that restricts driving. Spaces are needed for service providers and other visitors, but at a level well below the parking minimums that municipalities tend to require.

Without more certainty on parking, market rate investors will gravitate toward neighborhoods and municipalities where they can expect the highest return on rents and will pass by moderate-income communities. For affordable housing projects, the high cost of providing parking can conflict with limited subsidy dollars and potentially steer investment away from more expensive, transit-served sites and toward parcels where land is cheaper but transit quality is poorer. In both cases, the requirements steer investment to just a few neighborhoods and prohibit a unit mix that benefits everybody. This works against achieving regional sustainability and equity goals.

Other research echoes the idea that the Chicago region requires too much parking in areas well served by transit. In 2014, the Regional Transportation Authority surveyed residents that had moved into transit-oriented developments (TODs) from other locations.[23] This TOD Resident Survey found that these residents owned 20% fewer vehicles than the average regional household and moved to a transit-served location in part because of transit service and walkability. However, after these residents moved into a TOD, the level of off-street parking dedicated to them actually *increased*.

But while there is agreement among planners, affordable housing professionals, and developers that zoning standards tend to produce too much parking, comparatively little data exists to evaluate what the proper level of parking should be for a specific neighborhood and use. How does it differ from one neighborhood to another? For transit-served projects, how does it differ from CTA to Metra stations, by proximity to downtown, and so on?

23. Regional Transportation Authority, "Living A Transit Lifestyle: Transit-Oriented Development Resident Survey Results Report." December 2014.

RESEARCH FINDINGS

To better evaluate the current level of parking supply, CNT surveyed 41 multifamily rental buildings with more than 10 apartments. This sample included buildings primarily in the city of Chicago as well as in suburban Cook County. While most buildings in the sample had some level of parking, the interview sample included a mix of vintage apartment buildings with fewer spaces, many of which predated parking ratios, and new buildings with more spaces.[24] It also included a mix of market rate and affordable buildings near and away from the CTA rail system. The 41 buildings sampled provide a snapshot of parking demand at various locations across Chicago.

CNT asked property managers to report their mix of units, rents, parking spaces, and availability of car sharing on site. CNT then visited each building between midnight and 4:00 a.m. on Sunday through Thursday nights, when these spaces were most likely to have parked cars, and counted occupied and empty parking spaces. We then computed the mismatch between parking supplied and parking used. Our analysis does not consider whether increased supply of parking actually *induced* additional car ownership or driving at these buildings.[25]

TYPICALLY, MUNICIPALITIES REQUIRE ONE OR TWO PARKING SPACES PER HOUSING UNIT.

Photo: Ken Lund, Flickr/Creative Commons

RIGHT SIZED PARKING CALCULATOR IN KING COUNTY, WASHINGTON

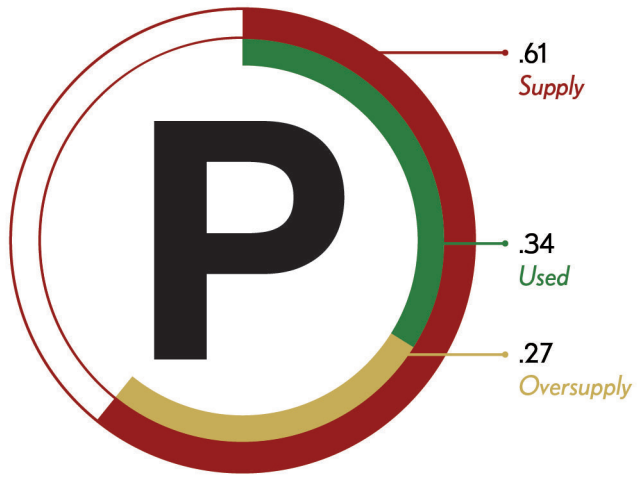
CNT based the data collection for this report on its approach used to build the Right Size Parking Calculator in King County, Washington. King County was interested in developing a tool that could be used to achieve a more balanced approach to parking for the region. As in the Chicago region, outdated parking requirements in King County have led to parking supply that is not reflective of actual demand, which can have a direct impact on a jurisdiction's ability to create compact, healthy communities.

The calculator's estimates are based on a powerful model developed from current local data of actual parking use collected in the field on more than 200 developments in urban and suburban localities in the county. These parking use data were correlated with factors related to the building, its occupants, and its surroundings—particularly transit, parking pricing, and population and job concentrations—to build the model. The calculator can help analysts, planners, developers, and community members weigh factors like location, as well as the number, size, and rent of units, that affect parking use at multi-family housing sites.

24. CNT did not ask property managers to report the year of construction.
25. CNT has contributed to research that confirms a relationship between supply of parking and induced demand. In "Estimating Parking Utilization in Multi-family Buildings in Washington, D.C.," a team of researchers that included CNT sampled 115 multifamily buildings. The report found a strong relationship between parking supplied and induced demand with an elasticity of 0.59%.

Overall, CNT found that:

RENTAL BUILDINGS SUPPLY MORE PARKING THAN IS USED. On average, parking in apartment buildings is supplied at 0.61 spaces per unit and utilized at 0.34 spaces per unit. In other words, a typical multifamily building offered tenants about two spaces for every three units, even though it needed only needed one. This means that in the middle of the night on a work week, when most tenants are asleep, the typical parking lot or garage was only two thirds full. Rental buildings oversupplied 0.27 spaces for every unit, including vacant ones.



Rental buildings that we sampled supplied more parking than is used. On average, rental buildings oversupplied 0.27 spaces for every unit.

PARKING SUPPLY AND UTILIZATION WITHIN REGIONAL SAMPLE

Parking Spaces Supplied Per Unit	Parking Spaces Utilized Per Unit
0.61 spaces	0.34 spaces

Table 1

In addition, as the supply of parking goes up, utilization rates go down proportionally. Chart 2 displays the parking spaces supplied in every sampled apartment building against peak period use, as well as an average across all buildings. Apartments with the fewest spaces per unit saw average peak period utilization rates just under 80%. Buildings with the most spaces per unit saw average peak period utilization rates around 60%.

PARKING SUPPLY AGAINST LEVEL OF UTILIZATION

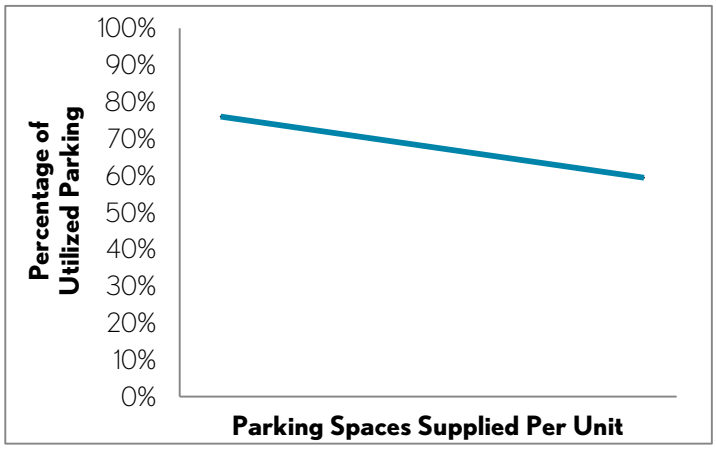


Chart 2

APARTMENT BUILDINGS WITH MULTI-BEDROOMS UNITS OVERSUPPLIED PARKING MORE THAN THOSE WITH ONE BEDROOMS AND STUDIOS. Many "parking lite" buildings constructed during the current real estate cycle offer fewer spots and studios and one bedrooms, aimed at small households. Survey results confirm that buildings with smaller units need fewer parking spaces than buildings with multi-bedroom units that might serve families. As Chart 3 demonstrates, as the average number of bedrooms in a building goes up, the number of parking spaces that tenants utilize also go up.

However, buildings with units for families oversupplied the most parking too, as shown in Chart 4. On average, buildings comprised entirely of studios and one bedrooms supplied just 0.33 spaces per unit. At these buildings, occupied units used 0.25 spaces per unit, for an oversupply of .08 spaces per unit, or 24%. But buildings with two and three bedrooms have a much bigger gap between supply and usage. On average, parking in buildings comprised entirely of two- and three-bedroom apartments supplied 0.85 parking spaces per unit. Among occupied units, these were used at 0.54 spaces per unit, for an oversupply of 0.31 spaces, or nearly 37%. In other words, buildings with studios and one bedrooms provided one excess parking spot for every 11 units, while buildings with two and three bedrooms provided one for every three.

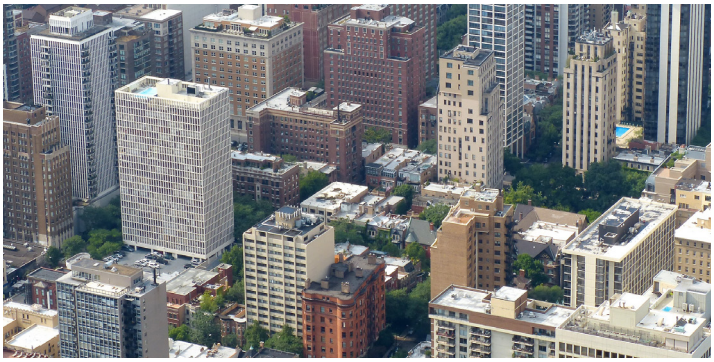


Photo: Roman Boed, Flickr/Creative Commons

SPACES UTILIZED PER UNIT BY AVERAGE NUMBER OF BEDROOMS

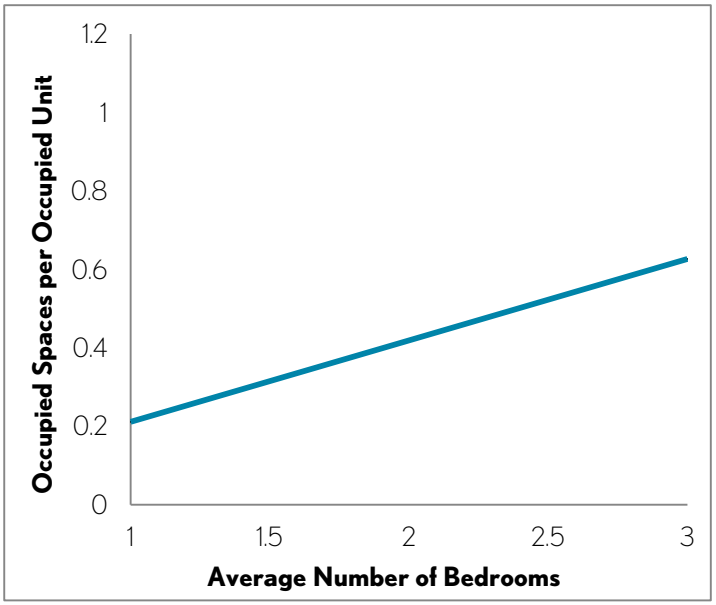


Chart 3

PERCENTAGE OF EMPTY SPACES BY AVERAGE NUMBER OF BEDROOMS

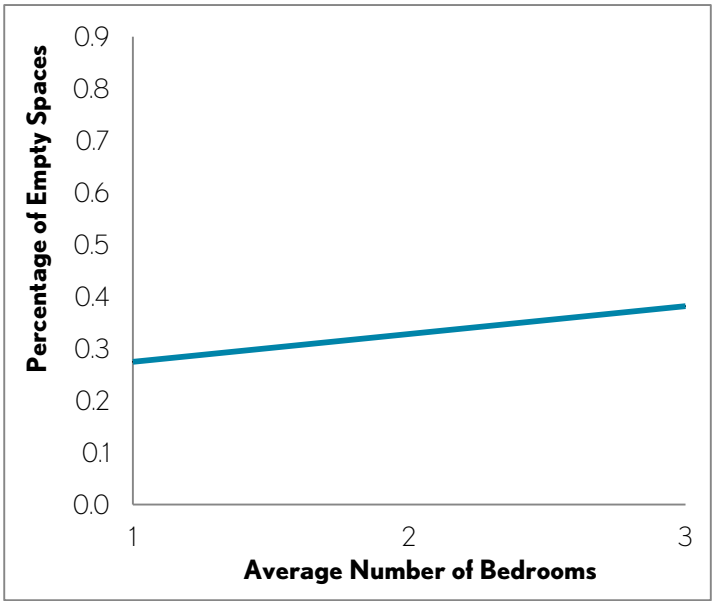


Chart 4

Although zoning requirements vary across Chicagoland and have recently been eased near transit in the city of Chicago, the supply and use of parking at multifamily residential buildings falls significantly below the typical requirements of one parking space per unit within Chicago and two per units required by many suburban communities, as Chart 5 demonstrates:

PARKING SUPPLIED AND UTILIZED BY NUMBER OF BEDROOMS

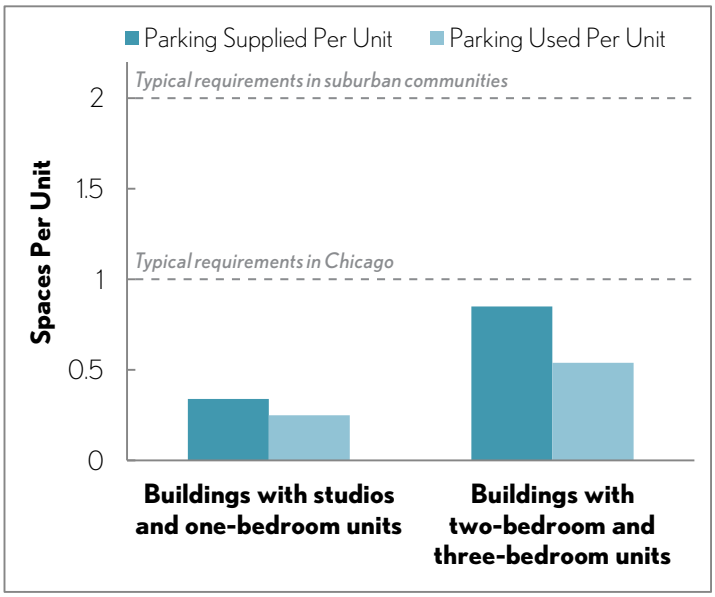


Chart 5

The buildings sampled for this report already supply fewer spaces per unit than the level now mandated by typical parking minimums. This may reflect the fact that many apartment buildings sampled were constructed before parking minimums existed. Even with less than the mandated levels of parking, most of these buildings still had parking spaces that sat empty in the middle of the night. **If all multifamily buildings offered parking at the level now mandated by public policy, the gap between supply and demand would be dramatically wider than it is today.**

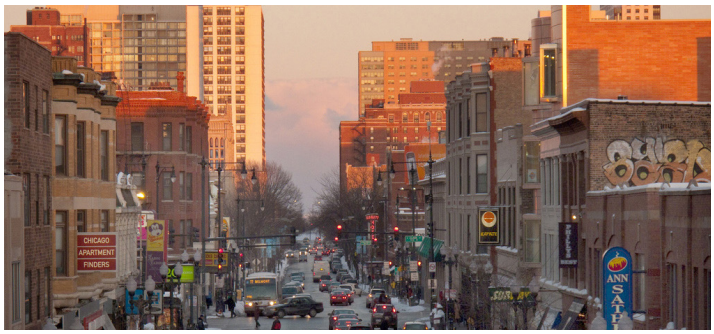


Photo: John Picken, Flickr/Creative Commons

RENTAL BUILDINGS NEAR FREQUENT TRANSIT SERVICE NEEDED FEWER PARKING SPOTS YET SUPPLIED TOO MANY. When households can use a well-connected transit system to commute, run errands, and access other needs, their reliance on cars goes down and they use fewer parking spaces. Apartment buildings near CTA rail stations offered fewer spaces, and usage rates were lower than in than buildings farther away. On average, buildings within one half mile, or a ten-minute walk, of a CTA 'L' stop supplied just 0.51 spaces per unit and, among occupied units, utilized just 0.29 of those spaces per unit. Overall, just 62% of spaces near the CTA had parked cars overnight.

Many apartment buildings we surveyed were located in neighborhoods without a CTA station but with a frequent bus. And, often, those buildings needed fewer parking spaces. Buildings within a five-minute walk of high-quality rail or bus transit, defined as having average headways of 15 minutes or less, saw their parking used even less frequently than did buildings near any rail station. Those buildings supplied just 0.51 spaces per unit. Occupied units utilized 0.21 spaces per unit. Overall, 68% of spaces were occupied overnight.

Proximity to the Metra rail system, which runs less frequently during off-peak periods, did not have as large of an impact on parking use. Buildings within a half mile of the Metra rail system supplied 0.59 spaces per unit. But occupied units

only utilized 0.42 spaces per unit. Overall, 67% of all spaces were occupied overnight. This is a similar rate to all buildings surveyed. Chart 6 demonstrates the rate of utilization for both systems and for frequent rail and bus transit:

PARKING SUPPLIED AND UTILIZED BY NUMBER OF BEDROOMS

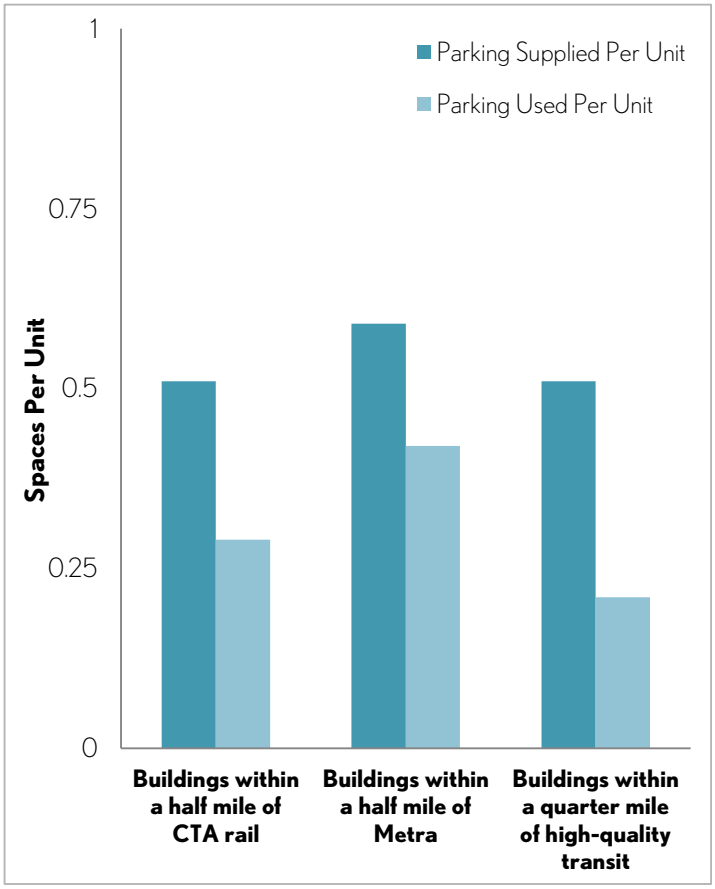


Chart 6

Following these average supply and utilization findings, a typical 100-unit transit-oriented development project near the CTA that provided structured, underground parking at the typical cost of development would have $85,000 worth of parking spots that sit empty at midnight.

BUILDINGS WITH AN AFFORDABILITY SUBSIDY HAD AN OVERSUPPLY SIMILAR TO OTHER BUILDINGS STUDIED. Because excessive parking adds increased cost to affordable housing projects, CNT surveyed 27 buildings with an affordable housing subsidy, which comprised 71% of the entire sample. These buildings supplied 0.66 spaces per unit. Occupied units used 0.42 spaces per unit. Overall, parking utilization at these buildings mirrored that of all buildings studied.

OVERALL, THESE FINDINGS SUGGEST THAT:

1. **A "one size fits all" requirement of one or two spaces per unit does not make sense for these 40 buildings.** Market rate buildings, buildings with both small and large units, buildings near transit, subsidized buildings, and buildings constructed before and after the imposition of parking standards all included, on average, fewer than one space per unit and did not see full utilization of those stalls.

2. **When buildings provide more parking, it is used proportionally less.** As the number of parking spaces per unit increased, the overall use of those spaces decreased. This was particularly true in buildings with multi-bedroom apartments, where residents used more parking but where more spaces sat unoccupied than in buildings with smaller units.

3. **Buildings near CTA rail and high-frequency buses need even less parking.** These apartment buildings had fewer dedicated spaces and saw less use. Buildings near the Metra system, which runs less frequently outside of rush hour, saw no reduction in parking utilization.

POLICY TOOLKIT

There is no "one size fits all" strategy for providing parking for either market-rate or subsidized buildings. Policy solutions for communities and for developments need to consider the transportation options and walkability of the neighborhoods, the potential response of the development market, and the parking likely to be demanded by different market segments. If the market doesn't respond to a parking reduction, then a change in the zoning environment will have little impact on investment.

Similarly, developers need to adapt their projects, and the alternatives they provide, to the tenants they expect to house and the urban or suburban environment around the site. No two communities are the same.

Nonetheless, a toolbox of policies exists to help communities and developers provide alternatives to parking.

MUNICIPAL STRATEGIES

Strategy	Description	Regional Examples	Case Study
Adaptive Re-use Exemptions	*Adaptive reuse exemptions* encourage the redevelopment of vacant, but viable, historic structures. Under these exemptions, the conversion of a former industrial building to residential lofts, for example, does not trigger typical residential parking minimums, which often make such projects logistically or financially impossible.	Blue Island, Evanston, LaGrange	In Blue Island, adaptive reuse of buildings – including remodeling and expansions of up to 20% – cannot require additional parking, although any existing parking must be preserved.
Bicycle Parking Credits	*Bicycle parking credits* reward developers for promoting active transportation options by allowing the replacement of some car parking spaces with bicycle parking.	Chicago, Oak Park	In Oak Park, the Zoning Officer can approve up to a 25% reduction in required parking spaces if a development "provides bicycle parking or makes special provisions to accommodate bicyclists, such as bicycle lockers."
Captive Market Credits	*Captive market credits* help create a vibrant and walkable downtown community by encouraging local workers, residents, and shoppers to patronize more local businesses within walking distance. When a retail shop or restaurant can expect some of their patrons to come from other nearby establishments, they may reduce their parking.	Highland Park	In Highland Park, retail or food businesses that receive "some portion of [their] patronage" from other establishments located within 1,000 feet can reduce their parking by 15%. Offices and financial institutions can reduce their parking by 5%. A parking study can also be used to suggest a different reduction.
Carsharing Credits	*Carsharing credits* replace multiple general-use parking spaces with one or more carshare spaces. That way, many residents who want occasional access to a car but don't need to use it every day can share a single vehicle.	Chicago, Villa Park	In Villa Park, each carshare parking space can replace up to four regular parking spaces, with a maximum 40% reduction in overall parking.
Carpooling Credits	*Carpooling credits* reward employers that get their workers to participate in carpooling programs, reducing the number of vehicles on the road and traffic congestion around workplaces. Employers who run these programs are allowed to reduce their required parking allotment.	Highland Park, Oak Park	In Highland Park, employers with at least 100 employees and an approved carpooling program or shuttle service can reduce their parking by 10%.
Elimination of Requirements	Municipalities may eliminate requirements altogether and leave it to developers to propose the appropriate scale of parking for a project. They may elect to have a downtown district with no parking requirements.	Chicago, Elmhurst, LaGrange, Hinsdale, Glen Ellyn	The City of Chicago recently eliminated parking requirements for TOD sites with a commercial, manufacturing, or retail designation within one quarter mile of a train station (see below).

Strategy	Description	Regional Examples	Case Study
Inclusionary Upzoning	*Inclusionary upzoning* requires that developers include a set aside of affordable units in a project or pay a fee in lieu of providing units on site. Reduced parking can incentivize developers to provide units on site through reduced project costs.	Chicago, Evanston	The City of Chicago's Affordable Requirements Ordinance allowed increased parking reduction for TODs with affordable units. In September 2015, parking requirements were eliminated for all types of developments near transit.
Off-Site Parking	*Off-site parking* reduces development costs and encourages more context-friendly development by providing flexibility to meet parking requirements within close walking distance of a new building.	Blue Island, LaGrange, Orland Park, Tinley Park, Westmont	In Westmont, non-residential developments can provide all parking at an off-site facility up to 600 feet away from the primary location.
Parking Maximums	*Parking maximums* promote attractive, pedestrian-friendly streets by capping the total number of parking spaces provided for a particular use.	Villa Park, Wheeling, Wilmette, Downtown Plainfield	In Wheeling, maximum parking limits apply on a sliding scale, depending on the size of the development. The lowest category, applying to projects where the minimum parking requirement is up to 99 spaces, has a maximum of 120% of the minimum requirement. The highest category, applying to projects where the minimum required parking is over 500 spaces, has a maximum of 105%.
Payment In-Lieu	*Payments in lieu* make smart development easier by allowing developers to pay a fee to the local government instead of providing their own parking. The town or village can then use that fee for nearby parking, traffic, or other transportation needs.	Highland Park, Northbrook, Oak Park, Skokie, Westmont, Wilmette, Lake Forest	In Oak Park, developers may pay a one-time fee "commensurate with the cost of providing off-street parking" instead of building the parking themselves. The fee is used to enhance the parking supply.
Public Parking Credits	*Public parking credits* make the most of existing resources by allowing new developments to take advantage of existing parking in the area, including on-street parking or public garage spaces.	Oak Park, River Grove, Villa Park, Wilmette	In Wilmette, every three public off-street parking spaces within 500 feet of a development's property line allow parking to be reduced by one space. Commuter parking does not count toward this credit. Additionally, in the Village Center district, on-street parking spaces located adjacent to a commercial development's property line may be directly counted toward its parking requirement.
Shared Parking	*Shared parking* allows for better allocation of the parking supply. When two or more nearby buildings have uses with different peak times – for example, an office that's mostly used during the day and a movie theater that's mostly used at night – those uses can agree to a shared parking arrangement. One lot can serve both of those needs, resulted in fewer parking spaces sitting empty at both times.	Des Plaines, Evanston, Highland Park, Oak Park, Orland Park, River Grove, Villa Park, Wheeling, Wilmette	In Des Plaines, two or more uses that demonstrate that there is no "substantial conflict in the principal hours of operation" and sign a legal agreement can reduce their total parking requirement by up to 25%.
Sliding Scale Requirements	*"Sliding scale" requirements* acknowledge that different kinds of homes generate different amounts of parking demand and make sure that the number of spaces is appropriate based on the type of residential units.	Evanston, LaGrange, Villa Park, Wilmette	In Wilmette's Village Center, multifamily residential developments must provide one parking space per unit with one or two bedrooms, but 1.5 spaces for each unit with more than two bedrooms.
Transit-Oriented Development Overlays	*Transit-oriented development overlays* foster compact, sustainable, and healthy activity nodes by taking advantage of existing transportation infrastructure. Developments near CTA or Metra rail stations – or reliable bus service – are allowed to provide fewer parking spaces in recognition of the other transit options residents, shoppers, and workers have in the area.	Chicago, Highland Park, Oak Park, Villa Park	Within the City of Chicago, eligible B-, C-, and M-Zoned properties within a quarter mile of transit, and a half mile of transit along designated Pedestrian Streets, are not required to provide parking or can get a parking requirement reduction.

Photo: clare_and_ben, Flickr/Creative Commons

VILLA PARK

The Village of Villa Park realized they needed to reform their parking requirements, last updated in the 1970s, after a developer proposed a multifamily project near the Villa Park Metra station. Compared to the mixed-use town centers around Metra stations in neighboring suburbs, the Villa Park station area was relatively underdeveloped, so many residents were excited about the potential for such a development to catalyze a more vibrant district. However, it quickly became clear that the development would not pencil out financially with the village's existing parking requirements, which didn't take into account that people living near a well-used commuter rail station might not drive as much as people elsewhere in the village.

To avoid having a new planned development process for every new project by the station and an atmosphere of uncertainty for developers, the Village decided to proactively create new standards for development. The Regional Transportation Authority funded a zoning ordinance update, which Villa Park passed in 2013. It includes:

- **Reduced parking requirements:** The old code called for two spaces per unit in multifamily buildings, or one per bedroom, whichever was greater. The new code requires just 1.25 spaces per one-bedroom unit, and two spaces per unit with two or more bedrooms.
- **Credits for carshare spaces:** Each carshare parking space can replace up to four general parking spaces, resulting in a total reduction of up to 40% of the original number of required spaces.
- **Shared parking:** Multiple non-residential developments can pool their parking spaces to reduce the total amount required. Reductions range from 10% for two sites that share one lot to 25% for four.
- **Transit credit:** Developments within a quarter mile of a Metra station can reduce parking by 15%.
- **Parking maximums:** A development may not exceed the required amount of parking by more than 10%.

WILMETTE

Back in 2007, village leaders in Wilmette refocused their mixed-use, transit-served downtown. Despite being Wilmette's commercial and civic heart, the village center had not seen much development, going back to the 1990s. Working with developers convened by the Urban Land Institute, the Regional Transportation Authority, and other planning consultants, they determined that their zoning code discouraged the kind of walkable, attractive projects that would bring more activity and businesses to the area. An important part of that stumbling block was excessive and overly rigid parking requirements.

So in 2014, after several years of work, Wilmette passed a revised zoning ordinance that included:

- **Reduced parking requirements:** Two-bedroom residential units require only one space, down from 1.5 spaces before the current ordinance.
- **Encouragement for new developments to share public parking:** On-street parking along the property line, as well as non-commuter public lots within 500 feet, can be counted against a new development's requirements.
- **Allowance for multiple developments with different peak demand times to share parking:** The exact reduction is determined by a table of uses and estimated parking needs by time of day. For example, a development used as an office and another used for housing can join lots to reduce their total parking supply by nearly a third.
- **A parking maximum:** The maximum is pegged at 110% of the minimum number of required spaces for any given development.

The private market responded with a six-story, mixed-use building with 75 market rate residential units, 6,500 feet of ground floor retail, and just 129 parking spaces.

Photo: Keith Cooper, Flickr/Creative Commons

CHICAGO TOD + ARO ORDINANCES

In its recent report TOD in the Chicago Region, CNT found that between 2000 and 2010, the Chicago region was the only one with a large legacy transit system to grow its occupied housing units at a rate faster away from transit than around it. This underperformance occurred in part because of the lack of net growth in the city of Chicago. The Chicago Housing Authority Plan for Transformation and ongoing community distress led to the loss of units in some transit-served neighborhoods on the south and west sides. On the north and northwest sides, zoning made it difficult for many neighborhoods to add a significant number of new multifamily units. Most new developments were required to offer one parking space per unit, even on parcels steps from the CTA.

Chicago has taken action. Since 2013, the Chicago City Council has relaxed restrictions on density and minimums on parking to encourage more multifamily development in transit-served neighborhoods and to incentivize affordability as part of that development. New policies include:

- The **Original TOD Ordinance**, passed in 2013, that allows multifamily residential development to reduce off-street parking by 50% for properties within 600 feet of transit and 1,200 feet of transit along designated Pedestrian Streets.
- An expansion of the **Affordable Requirements Ordinance**, Chicago's inclusionary zoning ordinance, that provides additional reduction up to 25% for units meeting the affordability requirement and provided on site.
- A 2015 **expansion of the TOD Ordinance** that eliminated parking minimums for parcels within 1,320 feet of transit – one half mile – along designated Pedestrian Streets for parcels with a business, commercial, or manufacturing zoning designation.

Photo: Steven Vance, Flickr/Creative Commons

DEVELOPMENT STRATEGIES

Strategy	Description	Examples
Carshare	Vehicle sharing gives residents options, but can also help a development cut down on the number of required parking spaces. Developments can set aside spaces for carshare services, provide discounted or free membership as part of rent, or purchase and operate a vehicle as a free amenity to residents.	1611 W. Division in Chicago provides a discounted first year membership as part of the rent. In Minneapolis, Oaks Station Place offers complimentary electric "community cars" for four-hour errands.
Unbundled Parking	A developer can "unbundle" parking from rent and lease it separately to a tenant. Depending on the kind of development, this may either entitle the tenant to an assigned space in a lot or garage, or simply allow them to park in any available space. Unbundled parking allows the developer to charge a market price for a space, and it can reduce the total number of spaces needed for a building.	Cubix Yerba Buena, a microunit development in San Francscio, provides only five parking spaces for 98 units. Residents have the option of leasing a space at $200 per month. 10% of units in this development are low income.
Transit Passes Bundled In Rent	As with parking, a developer can choose to offer a transit pass as part of the rent. This can encourage the use of transit and lower the demand for parking within a building. Moreover, it is more equitable than bundled parking, because residents with lower incomes or mobility challenges are less likely to own a car.	LaSalle Apartments in Portland, OR offered transit passes bundled with rent and reported a 79% increase in transit use.
Bicycle Sharing Bundled In Rent	As with transit passes, a building may offer a complimentary or discounted membership to a bike share program, such as Divvy.	1237 N. Milwaukee in Chicago will provide complimentary yearly passes for Divvy to residents that do not own cars.
Bicycle Parking Spaces	A development may offer indoor bicycle parking as an alternative or complement to vehicle parking to reduce the number of spaces. For every one indoor automobile parking space, a development could easily accommodate twenty bicycle spaces.	1611 W. Division in Chicago provides 100 bicycle parking spaces and zero dedicated parking spaces for 99 units.
Shared Parking	Residential, commercial, office, and institutional uses within a development may share parking because the spaces are utilized at different times. Alternatively, a building may utilize a garage or parking in an off-site facility that is underutilized at night.	1571 Maple Avenue in Evanston will lease 88 parking spaces from a nearby municipal garage, where spaces sit underutilized during the evening.
Peer-to-Peer Sharing	Mobile apps allow tenants and building owners to directly rent out parking spaces by the hour.	SpotHero allows users to rent unoccupied parking spots at an hourly rate. Building owners, garage owners, and owners of dedicated parking spots can use the app to better utilize parking stalls at times when they tend to sit underutilized.

Photo: Washington State House Republican, Flickr/Creative Commons

Photo: Steven Vance, Flickr/Creative Commons

1611 W. DIVISION, WICKER PARK, CHICAGO

The 1611 West Division building, located at the intersection of Division and Ashland in Chicago's Wicker Park neighborhood, has 99 rental units geared towards smaller households, including 10 units available for low income tenants. The building has no off-street parking spaces for residents nor any affordable housing units. This market-rate development sits at the nexus of the CTA Blue Line and three CTA bus lines. It is served by Divvy bike share; it offers roughly 100 bicycle parking spaces, which are heavily utilized; and it offers an Enterprise carshare vehicle with a discounted membership. The building owners report that tenants choose the building because of its transit access to the Loop and to O'Hare for business trips, and its mobility choices for other trips.

1611 West Division also has amenities specifically designed for car-free living. A monitor in the lobby displays CTA Bus and Train Tracker times so residents can linger indoors until their bus or train arrives. Each unit has a washer and dryer and residents can use a laundry shoot for dry cleaning. The building has pet-friendly services like professional dog walkers.

1611 West Division has not created parking spillover. Leases for residents include a clause that make them ineligible for parking permits on neighboring streets. Most residents choose the building because of its amenities anyway, so the effect on neighborhood parking congestion has been minimal.

1571 MAPLE AVE, DOWNTOWN EVANSTON

Approved in early 2015, 1571 Maple Avenue is a 12-story building, about to break ground, that will provide 101 units and nearly 4,000 feet of commercial space. The building is located 100 feet from the Davis Street station shared by CTA and Metra and is served by eight CTA and Pace bus lines. Seven carshare vehicles exist within a short walk of the site. Because of these options, the development will only have 12 parking spaces on site, two of which will be dedicated carsharing locations and one of which will have an electric charging station.

Evanston required the development to utilize a large parking garage a short walk from the site. Although 1571 Maple Avenue offers a small number of parking spaces on site, residents can utilize an additional 101 spaces from a nearby municipal garage on Maple Avenue. Evanston constructed the garage to serve transit commuters, workers, and a downtown movie theater, but it mostly sits underutilized in the evening. A second garage at Sherman Plaza offers additional guest parking. A 2009 multimodal transportation study found that utilization of the downtown parking supply, including this garage, drops below 40% after 7:00 p.m. By using this existing but underutilized supply of parking, residents and visitors at 1571 Maple Avenue use a resource that has already been constructed.

Photo: La Sequencia, Flickr/Creative Commons

COMMUNITY EDUCATION

Sometimes, the biggest stumbling block to right-sized parking may not be a downtown zoning code or building amenities, but community skepticism about the impacts of a building without parking. Residents may see a lack of available parking on the street and fear that a building with low parking will only add to the crunch. Attendees at community meetings may be older, more affluent, or homeowners, demographics that tend on average to own more cars, who express skepticism at a low-parked development aimed at younger or less affluent renter households. These voices can influence public discussion at meetings and online. Good data can help make the case that off-street parking can be lowered below conventional minimums and below community perceptions of what is needed. Importantly, numbers help empower quieter voices to speak in support during a community meeting and demonstrate that there is a broader community consensus than there might seem to be at the outset.

In April 2015, CNT and the Lakeview Chamber of Commerce demonstrated this by partnering on a white paper on recent TOD trends. That paper found transit ridership on the rise, car ownership on the decline among younger households and renters, and housing loss due to deconversions within the housing stock. The Lakeview Chamber utilized the paper to help secure the approval of two TODs near the Southport and Paulina Brown Line stops in May 2015.

Ultimately, real change must occur across the public and private sectors, and among neighbors, to cut down on the supply of empty parking and prioritize compact, affordable communities instead:

- **MUNICIPALITIES MUST SET BETTER PARKING POLICIES IN LAND USE CODES** that reduce minimum mandates for parking when they don't make sense, encourage developers to provide shared parking and transportation alternatives, and incentivize the creation of affordable housing units using the money saved.
- **TRANSIT-ORIENTED DEVELOPMENTS CAN REDUCE THE DEMAND FOR PARKING** by providing shared alternatives like car sharing, bicycle parking stations, and transit passes bundled within rents.
- **COMMUNITY CONVERSATIONS MUST BE GROUNDED BY DATA** so when a building with fewer spaces is proposed, residents can better evaluate its impact on the supply of on-street parking and the neighborhood as a whole.

CONCLUSION

Communities across Chicago are demonstrating how to build communities with the right size of parking. But more work needs to be done. Market-rate developments are asked to provide structured parking that costs tens of thousands of dollars a space, pushing up rents and crowding out development, only to see a third of those spaces sit empty at night. Subsidized housing projects face limitations in adding structured parking and opt for lower-cost locations away from transit, despite transit's accessibility benefits for low-income households. "Parking lite" projects constructed this real estate cycle have targeted small, single-person households, but the largest oversupply of housing occurs in apartment buildings better suited for families. And better data, like the parking utilization data collected for this report, is needed to help elected officials and residents understand that parking bears significant opportunity costs when it is not right sized to fit communities with different assets and households of different incomes.

Today, many developers, urban planners, and housing advocates understand the opportunity costs borne by empty parking. With better data and policies, we can work together to adopt a better approach. Developments can save money wasted on empty spaces and pass it on through reduced rents in market-rate projects and better allocated subsidy dollars in affordable ones. The limited supply of land near our transit system can be dedicated to housing people, not cars. Rather than creating empty parking lots, developments can add more vibrant uses that encourage walking and biking. And municipalities can continue to shift away from policies of exclusion made possible through local zoning and public investment in highways. When that happens, Chicagoland can become a region that puts people first.

ACKNOWLEDGEMENTS

This report was written by Kyle Smith, with significant research and contributions by Daniel Kay Hertz. Cindy Copp, Peter Haas, and Paul Needham provided analytic support. Scott Bernstein, Jacky Grimshaw, Kathy Tholin, and Linda Young provided strategic contributions and input. It was copy edited by Liz Miller and Steve Perkins and designed by Kathrine Nichols.

The research and preparatory work for this report was generously funded by Searle Funds at The Chicago Community Trust.

CNT wishes to thank the following individuals and organizations who we interviewed for our report or who provided comments on our drafts:

- John Adler, Village of Wilmette
- Lindsay Bayley, Chicago Metropolitan Agency for Planning
- David Brint, Brinshore Development LLC
- Robert Buono, Henry Street Partners
- Michael Burton, Bickerdike Redevelopment Corporation
- Lee Crandell, Lakeview Chamber of Commerce
- Christopher Dillion, Campbell Coyle
- Patrick Grill, Village of Villa Park
- Jessica Hector-Hsu, Michael Horsting, and Heather Tabbert, Regional Transportation Authority
- Barry Howard, LG Development
- Michael McLean, CONDOR Partners, LLC
- Alan Schachtman, Fifield Companies
- Perry Vietti, Interfaith Housing Development Corporation

ABOUT CNT

Founded in 1978, the Center for Neighborhood Technology (CNT) is a national leader in delivering game-changing research, tools, and solutions to create sustainable and equitable communities. We research, invent, and test urban strategies that use resources more efficiently and more equitably.

We believe that cities, thanks to their dense populations and shared resources, are uniquely positioned to respond to the growing concerns about sustainability, resource efficiency, greenhouse gas emissions, and climate resilience. By building on what exists – infrastructure, natural resources, organizations, and institutions – our initiatives uncover important hidden assets, enhancing urban communities and the lives of their residents.

Transportation and land use are central to a sustainable urban future. We promote an expansion of transit systems and livable, walkable communities around transit hubs. As part of this, we have developed parking calculators for King County, Washington; the San Francisco Bay Area; and Washington, D.C. that quantify the amount of parking that new developments need based on their proximity to transit. The research paper *Estimating Parking Utilization in Multi-Family Residential Buildings in Washington, D.C.* by CNT's Chief Research Scientist Peter Haas and Jonathan Rogers, Dan Emerine, David Jackson, Peter Kauffmann, Rick Rybeck, and Ryan Westrom won the best paper of the year award from Transportation Research Board's Transportation and Land Development Committee.

CNT 773 278 4800 info@cnt.org

©2016 CENTER FOR NEIGHBORHOOD TECHNOLOGY