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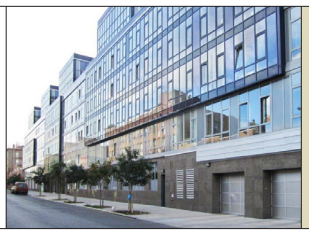

MARCH 2012

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POLICY BRIEF

Searching for the Right Spot: Minimum Parking Requirements and Housing Affordability in New York City

Increasingly, local governments are trying to meet the parking needs of their residents and visitors more efficiently, and in ways that are more consistent with broader sustainability, transportation, and land use goals. Concerns about traffic congestion, housing affordability, and anticipated population growth have even prompted some policy analysts and policymakers to reexamine the well-entrenched practice of mandating a minimum number of parking spaces that developers must include in residential developments.

The City of New York has announced that it too is rethinking its parking policies. While New York's residents have much lower car ownership rates than the residents of most cities in the United States, parking nevertheless is a source of considerable controversy, especially in discussions over new residential and commercial development. To inform the policy debate that will surely erupt over any changes that the city might propose to the existing parking requirements, NYU's Furman Center analyzed the current provisions of the city's Zoning Resolution that require developers to provide off-street parking spaces for most new housing development outside of Manhattan's central business district and parts of Long Island City in Queens.

In this policy brief, the Institute for Affordable Housing Policy uses that research to explore what the regulations require in different parts of New York City, and assess how the requirements relate to rail transit accessibility. We also examine the amount of parking developers actually built in recent years to determine whether and how the regulations affect developers' decisions about what to build. Throughout the brief, we explore the effect that the parking requirements may have on housing affordability. Finally, we highlight a series of parking policy initiatives underway in New York and elsewhere that attempt to reconcile the tension between sustainable development, the affordability of housing, and local-level parking pressures.

Why Does the Government Require Developers to Provide Parking?

The City of New York, like many local governments, manages a large supply of public parking, including free and metered spots on city roads and municipal garages. In 1950, in response to growing competition for these spaces, the city began requiring that new residential development include off-street parking. The city's 1961 Zoning Resolution (which, although amended countless times, remains in effect today) increased these requirements. Assessing how well the existing parking system manages supply and demand is a challenging task, in part because the exact number of on-street and off-street parking spaces is currently unknown by city policymakers or researchers.

Those who argue that the city need not mandate off-street parking assert that developers will respond to market demand by providing the efficient number of off-street parking spaces. If potential tenants or homebuyers want parking, they will rent or buy in those buildings that provide off-street parking, and developers will respond to the demand by providing parking in their new buildings.

Proponents of parking requirements for residential development argue, however, that they are necessary to prevent new housing developments from imposing costs on the surrounding neighborhoods. Many car owners in New York choose to rent or buy homes in buildings that offer little or no parking, because they know they can park in commercial lots and garages or for free on neighborhood streets. Because residents have these options, developers may not find it profitable to build parking for every car that they expect their residents to own.

Key Findings

Developers are required to provide, on average, 43 new off-street parking spaces for every 100 new housing units constructed in New York City. Average requirements differ widely across boroughs, from five spaces in Manhattan (most of which is exempt) to 122 spaces in Staten Island.

Land near train stations is generally subject to lower minimum parking requirements per residential unit than lots farther away, but developments near transit are sometimes required to build large numbers of spaces due to higher density zoning. Zoning lots within a half mile walk of a rail station entrance require, on average, 29 new off-street parking spaces for every 100 new housing units, compared to 72 spaces for those farther than a half mile from a rail station entrance. Because the lots closer to train stations are often zoned for higher density outside of the Manhattan Core, the per unit requirements compel developers to build large numbers of parking spaces very close to train stations.

Automatic parking requirement waivers are widely used. Over two-thirds of the recent residential developments we studied were exempted from parking requirements because of their building or lot size. Only 17 percent of these developments built any parking at all. In some cases, developers may build multiple small buildings on adjacent lots instead of a single larger building to avoid the parking requirements.

Building patterns suggest that developers would build fewer parking spaces without the requirements. Of over 300 recent housing developments in our sample that were subject to a requirement, 77 percent built at or close to the parking requirement. Small (5-9 unit) developments subject to parking requirements built an average of five spaces –exactly the average mandate. Developers of small buildings for which the requirement was waived, on the other hand, built, on average, just half of a parking space.

As a result, proponents argue, if developers aren't required to build enough parking, some of the new residents a development brings to the neighborhood will compete with existing residents for the limited supply of publicly-provided parking. Increased competition for public parking frustrates existing neighborhood residents who then must spend additional time searching for a spot. Of course, the current users of existing free parking spaces have no more "right" to those publicly-provided spaces than the newcomers. But the competition over the spaces can impair air quality and increase traffic congestion in the neighborhood as more cars "cruise" for parking on a regular basis.

Proponents also argue that competition over parking will reduce the quality of life in the city and make it harder for the city to retain middle-income families. Car ownership in New York City is closely correlated with household income: less than a quarter of the city's households earning at or less than the city's median income own a car, compared to 62 percent of households with incomes that are 150 percent of median income or above.[1] If those relatively higher income residents were to leave the city in part because they are unable to find convenient and inexpensive parking, the city would suffer negative fiscal impacts. Additionally, regional air quality could suffer from shifting commuters from the five boroughs to suburban counties, where they are more likely to drive to work.

Finally, some argue that parking requirements help smooth the approval process for new projects that require rezonings or other discretionary action by the city because they set clear expectations for developers and neighborhood residents about appropriate levels of parking for new projects.

PlaNYC 2030

In April 2007, New York City Mayor Michael Bloomberg released PlaNYC 2030, a long term sustainability plan to "prepare the city for one million more residents, strengthen our economy, combat climate change, and enhance the quality of life for all New Yorkers." The plan set ambitious targets for reducing greenhouse gas emissions and outlined 127 sustainability strategies to be implemented across 25 agencies. In 2011, PlaNYC 2030 was updated, both to mark the city's progress, and to announce new initiatives to improve and expand sustainable transportation infrastructure and options, reduce congestion on roads, bridges, and airports, and maintain and improve the physical conditions of the city's roads and transit system. The updated plan includes commitments to promote car-sharing, pilot technology, and pricing-based mechanisms to reduce congestion, and modify parking regulations to balance the needs of neighborhoods. The updated plan also announced that the Department of City Planning will study whether parking minimums applicable to affordable housing are "unnecessarily adding to the construction cost of some categories of housing."

More information about PlaNYC2030 is available at http://www.nyc.gov/html/planyc2030

1 U.S. Census Bureau. (2010). *American Community Survey, Units with Cars*. Retrieved from http://www.census.gov/acs/www/

NYC's Current Parking Requirements

The minimum parking requirement for any given site is set by the Zoning Resolution according to the specific zoning district the site is in and the use of the site (e.g., residential, retail, or medical office). Owners of buildings that were developed before the parking requirements were enacted do not have to meet them (provided they do not substantially renovate the property), but owners of all other buildings have to comply, both when initially developing the building and on an ongoing basis. Our analysis focuses on areas in residential zoning districts and only on residential uses within those districts.[2] Residential zoning districts range from lower density districts, like those in Ditmas Park, Brooklyn (CD 14), which allow only detached and semi-detached single family homes or low-rise multi-family homes, to higher density districts, like those in the recently-rezoned areas of Williamsburg, Brooklyn (CD 1), which permit large multi-family buildings. Low density districts (including districts R1-R5A in the Zoning Resolution), generally require at least one new parking space for every new unit constructed, while high density neighborhoods (R5-R10) require between 40 and 85 new parking spots for every 100 units constructed.

2 Some residential zoning districts permit limited non-residential development.

A significant exception to the city's parking requirements is that most residential development in Manhattan south of 110th Street on the West Side, and 96th Street on the East Side, is exempt.[3] In response to air quality concerns, the city lifted the requirements in this "Manhattan Core" in 1982 and instead imposed a cap on the number of spaces developers were permitted to build. More recently, the city also exempted much of Long Island City, Queens from the basic minimum parking requirements.

In addition, throughout the city, the Zoning Resolution allows full and partial exemptions from the parking requirements for some residential developments in certain zoning districts, which can reduce the effective parking requirement developers face.[4] "Quality Housing"—an optional set of regulations available in some zoning districts to encourage development consistent with neighborhood character—allows developers to build fewer parking spots in high density areas than the regulations would otherwise require. Further, developers receive an automatic waiver (an as-of-right exemption) in

3 Residential Development, New York City Zoning Resolution Text, Section §13-12. (2011).

4 Developers can also apply to the city's Board of Standards and Appeals for variances, which allow exemptions from or reductions of parking requirements due to hardships related to unique characteristics of the site. Variance applications require extensive evidence of hardship, so are of limited use to developers hoping to reduce parking requirements. New York City Department of City Planning. (2011). *New York City Zoning Handbook*.

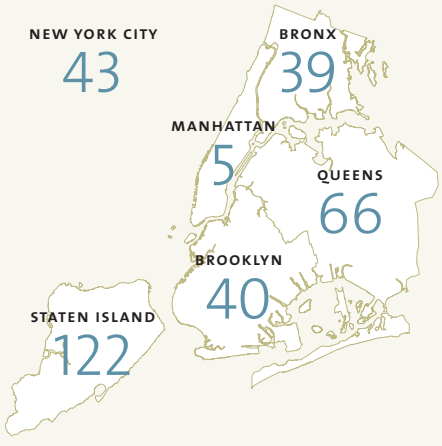
Ditmas Park, Brooklyn

Williamsburg, Brooklyn

some districts if a lot is smaller than 10,000-15,000 square feet, depending on the zoning district, or particularly narrow. Additionally, in many medium and high density zoning districts, any building that would require fewer than five or 15 total spaces, depending on the district, receives an automatic waiver. These waivers may encourage developers to construct several buildings next to one another, rather than a single larger building that would not qualify for the waiver. Finally, in most zoning districts, public housing and certain other types of subsidized housing for the poor or elderly are subject to reduced parking requirements.[5]

Based on an analysis of the Zoning Resolution and individual lot characteristics, we estimate the effective minimum parking requirements faced by potential developers for each lot in New York City.[6] As Figure A shows, after accounting for automatic waivers available to developers of small or narrow lots, we find that the effective parking requirements mandate that developers must build an average of 43 new off-street parking spaces for every 100 new housing units across the city.

Figure A: Average Effective Required Parking Spaces per 100 units (by Borough), 2004–2010



Development Spotlight: Liberty Avenue Apartments

Dunn Development Corp., an affordable housing developer, partnered with Cypress Hills Local Development Corporation to assemble privately- and publicly-owned parcels of vacant land in East New York. Using public and private financing and Low Income Housing Tax Credits, they built a 43-unit residence for people with very low incomes (approximately $22,000-$44,000 for a family of three).

Despite a survey of potential residents that found only 30 percent of them owned or had access to a car, the city's regulations required the developers to build 18 spaces on the site, adding construction and maintenance costs and reducing outdoor garden and recreation space in the rear of the building. To partially recoup costs associated with the development of the parking, the property owners charge residents $40 a month for a parking spot. More than six months after the property opened in November 2010, only nine spots had been rented.

Source: Martin Dunn, President, Dunn Development Corporation. (Personal communication, May 6, 2011).

5 Nominally, the Zoning Resolution still requires some types of subsidized housing developments to provide new parking in the Manhattan Core, despite the elimination of requirements for other housing types. However, because of changes to affordable housing programs and other waiver provisions, these requirements are now largely moot with respect to new projects.

6 See Appendix for methodology.

This analysis uses existing lot configurations, and doesn't account for the possibility that developers may avoid the minimum requirements by subdividing larger lots. Nor does it account for the possibility that developers might build subsidized housing that is subject to reduced requirements.

The requirements vary considerably by borough. The average requirement for new construction in Manhattan is quite low—just five parking spaces per 100 new housing units. This is because of the broad exemption from parking requirements for market rate housing in the eight community districts that make up the Manhattan Core.

In contrast, Staten Island, which is largely designated as a "Lower Density Growth Management Area" that includes higher minimum parking requirements, has the highest effective requirement in the city, at 122 off-street parking spaces for every 100 new housing units.[7] Queens, with more moderate density and no Lower Density Growth Management Areas, has an average effective minimum requirement of 66 parking spaces per 100 units built.

Potential Disadvantages of Minimum Parking Requirements

Environmentalists, developers, neighborhood preservation advocates, and others argue that minimum parking requirements may have negative consequences for the city that outweigh their benefits, including increased construction costs, reduced housing supply, unattractive streetscapes, and the environmental and health consequences of increased car ownership.

7 Lower Density Growth Management Areas have requirements over and above those designated by the Zoning Resolution for the amount and location of parking, street set-backs, the location and width of curb cuts, building bulk, and lot size. Retrieved from http://www.nyc.gov/html/dcp/html/zone/zh_ztools_ldgma.shtml

Housing Costs

Parking facilities are costly to build, with underground garages costing up to $50,000 per spot, according to a local developer.[8] Surface parking lots, while cheaper to construct, require additional land area and may come at the expense of green or open space and permeable surfaces for rainwater absorption. Developers pay these parking construction costs upfront, but any portion not recouped through parking fees paid by residents with cars might be passed on to all residents through higher sales prices or rents.[9]

Additionally, developers may reconfigure zoning lots to smaller sizes or unusual shapes to avoid parking requirements, and may then be unable to build the same number of housing units on the reconfigured lot than they would be allowed on the original lot. Many lots cannot accommodate underground parking due to subway lines, soil conditions, or subsurface water conditions. Builders on those lots are forced to build above-ground parking structures or, if the lot is large enough, surface lots. This may reduce the size or number of housing units that developers can build by forcing them to devote scarce land or permitted building area to parking (although the Zoning Resolution does make some allowances for above-ground parking[10]). Parking requirements for new developments may make some projects unprofitable, so that builders pass them up entirely. These factors, in turn, may increase housing costs for all neighborhood residents by constricting the local supply of housing below what the market would otherwise provide. The impact of upward pressure on

8 Alan Bell, Principal and Co-Founder, Hudson Companies, Inc. (Personal Communication, April 8, 2011).

9 Under certain market conditions, the developer might be able to pass the costs back to the prior owner of the land, by offering less for the land.

10 Notably, the Zoning Resolution does not count space used for parking in medium or high density districts towards the maximum permitted development size if the space occupied by parking is less than 23 feet above street level. Irregular lot configuration, land quality, or underground conditions can prevent developers from building underground parking or make it difficult to accommodate parking within 23 feet of street level. There are no additional variances in the maximum permitted development size to account for these constraints. Residential Development, New York City Zoning Resolution Text, Section §13-12. (2011).

prices is borne by all residents, and is regressive, because low-income households pay a larger portion of their incomes towards housing. Further, those low-income households also are considerably less likely than others to own cars, but share in the burden of the higher prices caused by parking requirements.

Neighborhood Aesthetics

Because underground parking garages are so expensive to build, parking requirements often result in street level lots, which generally make the neighborhood less desirable. Street-level parking lots often are unattractive, and may be—or may be perceived to be—dangerous. In addition, they displace street-level retail or other uses that are more interesting for those walking on the street and have greater potential for community economic development.

Encouraging Car Ownership and Use

In the five decades since the Zoning Resolution was adopted, the share of New York City households who report commuting to work each day by car increased from 19 percent to 29 percent. While many factors explain that increase, parking requirements may encourage more car ownership if they force developers to build more spaces than residents in the new building would otherwise demand. Any excess parking, which developers will make available to residents for whatever price they can get, effectively reduces the cost of car ownership for residents, which will encourage car ownership.

A New York City Department of City Planning study of off-street parking concluded that parking requirements are not a primary determinant of car ownership patterns.[11] Other research in the New York metropolitan area found, however, that free and readily available on-street parking increases car ownership by nearly nine percent.[12] Further, research indicates that increasing the costs of parking by 10 percent reduces the likelihood of owning a car by between four and 10 percent.[13]

Increased car ownership imposes health and traffic congestion costs on all New Yorkers. With 1.8 million registered cars in New York City[14] (which likely is a conservative estimate of car ownership because some residents register their cars outside the city), we have nearly 6,100 vehicles per square mile, higher than Los Angeles (4,300) and Houston (1,900).[15] Higher concentrations of cars are associated with higher levels of lung cancer, among other respiratory illnesses.[16]

11 New York City Department of City Planning. (2009). *Residential Parking Study: Automobile Ownership Rates and Off-Street Parking Requirements in Portions of New York City: Manhattan CDs 9-12, the Bronx, Queens and Brooklyn*. Retrieved from http://www.nyc.gov/html/dcp/html/transportation/td_parking.shtml

12 Guo, Z. (2011). *Minimum On-Street Parking Requirements and Household Car Ownership Decisions*. (Working Paper).

13 Litman, T. (2011). *Parking Requirement Impacts on Housing Affordability*. Retrieved from http://www.vtpi.org/park-hou.pdf

14 There are 1,767,091 standard series vehicles registered in NYC. New York State Department of Motor Vehicles. (2011). *Vehicle Registrations in Force* (2010). Retrieved from http://www.nysdmv.com/Statistics/regin10.htm

15 U.S. Census Bureau. (2010). *American Community Survey, Vehicles Available by Household Size for New York City, Houston, and Los Angeles*. Retrieved from http://www.census.gov/acs/www/

16 See, for example: Chen, F., Jackson, H. & Bina, W.F. (2009). Lung adenocarcinoma incidence rates and their relation to motor vehicle density. *Cancer Epidemiology Biomarkers and Prevention*, 18(3), 760-764.; Krzyzanowski, M., Kuna-Dibbert, B. & Schneider, J. (2005). *Health effects of transport-related air pollution*. World Health Organization.

Parking Requirements and Transit Accessibility

New York City's extensive public transit system makes it possible for 56 percent of its households to forego owning a car, and 71 percent of workers to commute to work without driving.[17] Nearly half of New York City residences are within a 10 minute walk to a subway or rail station entrance.

In neighborhoods where public transit is very accessible, households are less likely to own cars. In 2010, 40 percent of households in census tracts within 10 minutes of a train station reported owning one or more vehicles, compared to 65 percent of households in neighborhoods more than a half mile from a train station entrance.[18]

The potential impacts that minimum parking requirements may have on environmental quality may be mitigated or avoided if the requirements correctly predict the number of occupants of a residential development who would own a car regardless of the availability of onsite parking. Similarly, if parking requirements accurately meet demand, the effect they have on the cost of housing will be offset by the benefits of providing parking the residents desire. One strategy for matching requirements to likely existing demand is to vary requirements according to a development's proximity to public transit, ensuring that buildings with easy access to subways are not mandated to devote space to parking for residents who are less likely to own cars.

New York City's parking requirements, however, are determined by zoning designations and are not directly tied to proximity to transit, so they may not be responsive to the differential likelihood of owning a car. To assess that possibility, we compare parking requirements for lots within a half mile of a train station to lots that are farther away.

Table 1. Effective Parking Requirements per Unit and Proximity to Transit (Average Spaces per 100 Units)

	All Lots	Within 1/2 Mile of Subway/ Commuter Rail	Beyond 1/2 Mile of Subway/ Commuter Rail
Bronx	39	34	51
Brooklyn	40	34	61
Manhattan	5	5	3
Queens	66	54	78
Staten Island	122	131	120
New York City	43	29	72

We find that effective parking requirements (accounting for automatic waivers) are generally lower for lots that are closer to transit than lots that are farther away, as Table 1 illustrates. Developers are required to build, on average, 29 new off-street parking spaces for every 100 new housing units within a half mile walk of a rail station entrance, compared to 72 spaces per 100 units in areas farther than a half mile walk from a rail station entrance. This analysis accounts for automatic waivers available in some zoning districts for small lots or buildings, as discussed above, but doesn't account for any future developer actions to avoid the minimums, such as subdividing lots.

This finding, on its face, suggests that minimum parking requirements are somewhat responsive to transit accessibility. However, the required number of parking spaces for a given lot size can sometimes be especially high near transit stations. This is because lots near stations are often zoned for relatively high building density, which is only partly offset in the Zoning Resolution by lower per-unit parking requirements.

17 U.S. Census Bureau. (2010). American Community Survey, Units with Cars. Retrieved from http://www.census.gov/acs/www/

18 We measure proximity to Metropolitan Transit Authority subway station entrances and train stations served by Metro-North Railroad, Long Island Railroad, Staten Island Railway, and PATH trains.

For example, 157 Myrtle Avenue in Downtown Brooklyn, which was built in 2008, has 631 residential units. To meet the minimum parking requirement (in this case, 40 spaces per 100 units), the developer had to fit 252 parking spaces onto a site less than one acre in size. The developer had to incur this large expense, which may not be fully recouped through parking fees paid by car-owning residents, even though the project is within walking distance of 10 subway lines and is approximately 25 minutes from midtown Manhattan by subway. As of October 2011, only half of the building's parking spaces had been leased.[19]

Developer Response to Minimum Parking Requirements

To understand whether minimum parking requirements are a net benefit or detriment to residents and neighborhoods, we must first determine whether the minimum standards have any impact on developer behavior at all. If developers consistently build more than the minimum requirement, then the regulations have little effect on the supply of parking or on building patterns generally. If developers generally build exactly the minimum required, either the minimum requirements are set to perfectly match market demand, or the requirements are forcing developers to build more off-street parking than they believe is necessary to meet market demand.

Simply knowing that parking requirements change developer behavior doesn't determine whether parking requirements help or harm neighborhoods. But, if the requirements do not affect builder behavior at all, then there is no cause to worry about potential harms from the minimum requirements.

Table 2. Developer Response to Minimum Parking Requirements, 2000-2010

	Number of Developments	% of Total	% of Total (no waiver)
Under or Equal to Requirement	206	21%	65%
In excess <25%	39	4%	12%
In excess >=25%	72	7%	23%
Requirement waived	686	68%	–
Total	**1,003**	**100%**	**100%**

We identified 1,003 market-rate residential developments built between 2000 and 2008 in the Bronx, Brooklyn, Queens, and Staten Island, that contained at least five units, but no commercial or industrial uses. These buildings range in size from five to 111 units and were located in a wide variety of neighborhood types, from relatively dense areas well-served by public transit to lower density areas without convenient access to transit. Using building permits and certificates of occupancy, we compared the number of parking spaces actually built to the minimum requirements to which the development was subject. (For more on our methodology, see Appendix on page 14.)

As Table 2 shows above, two-thirds (68%) of the new developments were able to waive out of parking requirements entirely because of the size of the lot or building. Of the 317 developments with a parking requirement, 77 percent built at or close to the exact number of spots required by the Zoning Resolution.[20]

19 Smerd, J. (2011, October 2). Glut of parking spaces in city. *Crain's New York Business*. Retrieved from http://www.crainsnewyork.com/article/20111002/REAL_ESTATE/310029977

20 The median number of additional spaces for developments that exceeded the requirement by less than 25 percent was one spot.

In total, the minimum parking requirements mandated 3,600 parking spaces, and developers built 4,100. The additional spaces were largely driven by the 23 percent of developments that built at least 25 percent more spaces than the regulations required. These 72 developments, with an average of 22 units per building, built 663 more spaces than the Zoning Resolution required. The developments that exceeded their parking requirements tended to be larger, on average, than the developments that did not exceed their requirements, but were not concentrated in any particular community, as shown in Map 1.

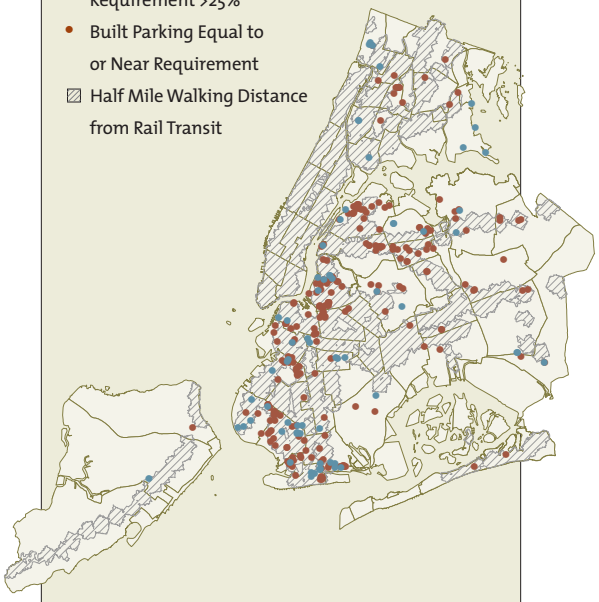
More than two-thirds (68%) of the residential projects we examined qualified for automatic waivers and faced no effective minimum parking requirement because of the size of building or lot. Map 2 illustrates the location of these developments. Developments with waived parking requirements included an average of eight housing units, and the vast majority (83%) provided no parking at all.

Our analysis shows that some developers did build more parking than required. As noted, 23 percent of developments with an effective requirement above zero exceeded the required minimum by more than 25 percent (represented by the blue dots on Map 1). Seventeen percent of developments that were eligible for automatic waivers nevertheless provided at least some parking (represented by the blue dots on Map 2). This finding indicates that perceived demand would likely cause some developers to build parking even if the parking requirements did not exist.

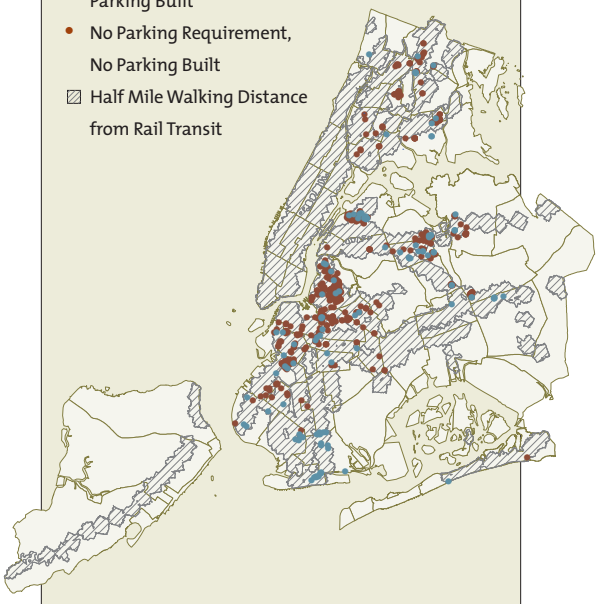
If we examine only the recent developments with between five and 14 units (which, of the developments we analyzed, were the most likely to be eligible for automatic waivers), we

Maps 1 and 2: Parking Built in Developments With 5 or More Units by Proximity to Public Transportation, 2000–2008 (Excluding Manhattan)

Map 1: Residential Buildings with Effective Parking Requirements (No Waiver)



Map 2: Residential Buildings With Waived Parking Requirement

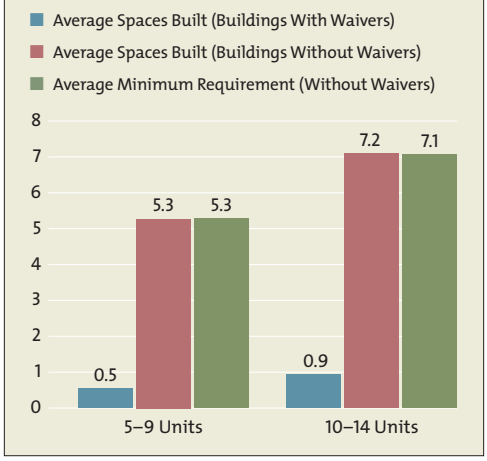


see the clearest effect of the parking requirements on developers' decisions to include parking. As Figure B illustrates, the average five- to nine-unit development built during this time period included just 0.5 total parking spaces if the development qualified for an automatic waiver, compared to 5.3 spaces if the project did not qualify (which exactly met the average requirement for these projects). In 10- to 14-unit buildings, developers still built less than one parking space on average if the requirement was waived, and built about seven spots, almost exactly the average number required, if the lot did not qualify for a waiver. While neighborhood demand, lot configuration, and transit access may be different for the lots that received automatic waivers, any such differences are unlikely to explain the rather stark contrast between how much parking developers built when subject to the requirement versus when the requirements were waived. Moreover, Maps 1 and 2 showed that lots with and without waivers are often located in the same neighborhoods and have similar proximity to transit.

Overall, the data suggest that parking requirements cause developers to build more parking spaces than they otherwise would based on what they believe their prospective tenants or buyers demand. This may imply that the requirements are causing developers to supply an inefficiently large number of parking spaces, which likely increases the cost of the units to renters or buyers. It may also be that the market is demanding too few spaces, as discussed above. Because residents of new buildings can use existing on-street spaces, and don't bear the full costs their additional competition for those spaces cause, they may be unwilling to pay for off-street parking.

Additionally, our findings show considerable variation in the effective requirements due to waivers. This variation occurs even within the same neighborhood, and has very little to do with proximity to public

Figure B. Average Parking Spaces Built for Small Buildings Compared to Requirements, 2000-2008



transportation. Both those findings should raise red flags about whether the minimum requirements are set at the efficient level. The prevalence of waivers also raises questions about whether the current system is creating perverse incentives for developers to subdivide lots and build multiple smaller buildings in order to legally reduce their parking requirements. Such measures to work around the parking requirements are unlikely to be efficient.

Moving Forward: Implications for New York City's Parking Policy

Our analysis shows that most residential developments with five or more units completed in recent years were exempt from minimum parking requirements because of automatic waivers for small lots and buildings. For a vast majority of these new buildings, the developer provided no off-street parking at all. However, many recent developments, especially larger ones, were required to include parking spaces. In most of these cases the developer provided close to the absolute minimum required, suggesting that

the requirements force developers to spend more on parking than the housing market alone would compel them to. While outside the scope of our analysis, this additional expenditure may be adding to New York's high housing costs. Further, to the extent that the minimum requirements result in more parking spaces than is efficient, the requirements also may encourage car ownership, to the detriment of the environment and the quality of life New Yorkers enjoy. To reduce the potential for these negative unintended consequences, policymakers could pursue a number of different strategies.

The most straightforward type of reform would be a general reduction or elimination of the requirements in more of the city. In a recent study, the Department of City Planning analyzed the Manhattan Core where, 30 years ago, minimum requirements were generally replaced with limits on parking construction. The study found that the revised regulations "have proven to be compatible with a growing, successful Manhattan Core" and reported that the area has met its clean air goals.[21] Other jurisdictions, too, have reduced minimum parking requirements significantly in recent years or imposed maximum parking requirements to reduce incentives for car ownership. San Francisco, for example, has eliminated minimum parking requirements in much of the city and imposed limits on the construction of new spaces in several neighborhoods.[22]

The New York City Department of City Planning could tailor parking requirements to better fit unique neighborhood parking conditions. Parking requirements might explicitly take transit proximity into account (for example, by providing automatic waivers for buildings within walking distance of rail or subway) or make adjustments according to neighborhood parking analyses that compare expected demand for parking to the total existing stock of on- and off-street spaces. In Milwaukee, Wisconsin, for example, minimum parking requirements are automatically reduced within a certain distance of transit stations.[23] In Portland, Oregon, minimum parking requirements do not apply to buildings within 500 feet of transit that provides services at least once every 20 minutes.[24] These transit overlay zones supersede any underlying zoning requirements. Full waivers for buildings close to transit would avoid high concentrations of parking spaces in dense, transit-rich areas.

Alternatively, the city could allow developers to make payments to a community transit fund in lieu of creating new parking, which could mitigate the effects of the increased traffic in the neighborhoods, and perhaps make it more likely that newcomers will use public transportation. Payments to the community transit fund could be used to improve mass transit, build bike lanes, widen sidewalks, or pursue more comprehensive parking planning. City officials in Vancouver, for example, have proposed mechanisms to allow payment-in-lieu for residential parking: if developers pay instead of building more parking, collected funds would be used for sustainable transportation initiatives.[25]

A more targeted change that could have significant impacts on the development of affordable housing would be to further reduce or eliminate the minimum parking requirement for these types of projects specifically. The Department of City Planning signaled an interest in reconsidering

21 New York City Department of City Planning. (2011). Manhattan Core Public Parking Study. Retrieved from http://www.nyc.gov/html/dcp/html/mn_core/index.shtml

22 Weinberger, R., Kaehny, J. & Rufo, M. (2010). U.S. Parking Policies: An Overview of Management Strategies. Retrieved from Institute for Transportation and Development Policy website: http://www.itdp.org/documents/ITDP_US_Parking_Report.pdf

23 U.S. Environmental Protection Agency, Development, Community, and Environment Division. (2006). Parking Spaces/Community Places: Finding the Balance through Smart Growth. Retrieved from http://www.epa.gov/smartgrowth/pdf/EPAParkingSpaces06.pdf

24 Parking and Loading, 33 Portland City Code §266. (2011).

25 Memon, W. (2009). City of Vancouver Parking By-Law—A Recital of Sustainable Parking Policies. City of Vancouver. Retrieved from www.citevancouver.org/quad/presentations/City%20of%20Vancouver%20Parking%20Presentation-Wali%20Memon%20-ITE%20Quad%20.pdf

the costs and benefits of minimum parking requirements for affordable housing in its 2011 update to PlanNYC.

Another proposal recommended by New York City residential developers is to allow garages in residential buildings, which are currently restricted to use by building residents, to serve as commercial garages. This makes it more likely that developers will recoup their costs for creating parking, rather than passing them on indirectly to renters and home buyers who do not own cars. Opening residential parking to non-residents would also allow partnerships with local businesses looking to provide customer parking, or increase the off-street parking supply for other neighborhood residents. The Department of City Planning's recent Manhattan Core Parking Study confirms that commercial garages are an important source of parking for nearby residents.[26] For communities far from the Manhattan Core, garages could facilitate transit use through park-and-rides.

Any reductions of the minimum parking requirements, though, are likely to create a greater demand for equitable management of public on-street parking. New York City is currently considering, and other cities already have in place, a residential parking permit system that gives exclusive or primary access to on street parking to neighborhood residents. Residential parking permits are particularly popular in neighborhoods with high evening demand for commercial parking—like entertainment venues. But well-designed programs can also appease residents who are concerned about competition from new neighbors by limiting the total number of permits through the use of a local cap, and giving priority to existing residents over new ones. Although often overlooked, such programs also have the potential to place a monetary value on parking, which can help ease competition by encouraging some residents to rethink their car use and changing the cost-benefit calculation between on- and off-street parking.

Car owners are not a majority in New York City, but they are the primary beneficiaries of free on-street parking and the minimum requirements for new off-street parking intended to preserve access to that free resource. The likely costs associated with this system, however, are borne by everyone—traffic congestion, higher environmental impacts, and possibly higher housing costs. While new residential construction can impose costs on existing car owners by increasing competition for free publicly-provided and maintained on-street parking, an oversupply of new parking can also facilitate car ownership and impose burdens on all residents. Our research cannot compare these different costs, but does make clear that the city's parking requirements are relatively blunt instruments, and that more parking spaces exist today than would have been built without the requirements. We welcome the city's commitment to reconsider its parking policies, and look forward to the debate over these issues.

26 New York City Department of City Planning. (2011). Manhattan Core Public Parking Study. Retrieved from http://www.nyc.gov/html/dcp/html/mn_core/index.shtml

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The authors would like to thank Alan Biller, Sean Capperis, Brice Chaney, Adam Eckstein, John Krauss, Jeff Leyco, Frances Liu, Paul Salama, and Ben Winter for their research assistance, the participants of the Spring 2010 Institute for Affordable Housing Policy Parking Policy Breakfast Series for their insights and inspiration, the New York City Department of City Planning for its assistance and critiques, Ingrid Gould Ellen for her helpful comments, and Max Weselcouch for her photography.

Appendix: Data and Methodology

Our analysis examines minimum parking requirements for every physical parcel of land in the city. We focus on residentially-zoned lots and determine, for each lot, how much parking the Zoning Resolution mandates for residential development on the lot, given its zoning district.

To estimate the parking requirement applicable to each lot, we use data from the New York City Real Property Assessment Database (RPAD), a proprietary dataset maintained by the New York City Department of Finance that contains detailed information about each lot, including the applicable zoning district, size of the lot, and other lot details. We add to the database the per-unit parking requirements specified by the Zoning Resolution for each lot's zoning district and flag lots that meet the lot size waiver criteria. To identify lots that would qualify for a waiver based on the number of spaces that the requirements would otherwise specify, we begin with an estimate of the total amount of building area each lot is zoned to accommodate, which was generated by the Furman Center for related work. We then divide this total square footage by the borough-specific average gross square feet per unit for recently developed residential projects (calculated using RPAD data) and multiply the resulting unit count by the parking requirement that applies to the lot.

Because of data limitations, we do not account for other types of waivers, however, such as those for "infill" housing. Nor do we account for the reductions available to different types of affordable housing discussed above, which are based not on lot characteristics, but on the type of a particular development. However, because the reductions for affordable housing are calculated as a percentage of the applicable requirement for market rate housing, the relative differences in the requirements across different geographies or groups of lots we explore will generally hold true for affordable housing as well.

Finally, we augment the database with information derived from Geographic Information Systems (GIS) analysis to determine which lots were within a half-mile walk of a New York City subway entrance or a Staten Island Railway, Long Island Railroad, PATH Trains, or Metro-North Railroad station.

All estimates of average parking requirements for groups of lots (citywide, borough, within and beyond a half mile walking distance from rail transit, and other geographic areas) are aggregations of lot-level data. To calculate the average required parking ratio for groups of lots (e.g., lots near transit, etc.), we weight each lot by the maximum allowable building area. Our measure, accordingly, is the average required parking ratio (i.e., spaces per residential unit) for a square foot of allowable building area in that geography or group of lots. We use allowable building area for our weight instead of lot area to account for the fact that individual lots have widely varying development potential based on their zoning district

Our developer response analysis builds on data contained in the New York City Building Information System (BIS). Using this data, we identify 2,204 residential developments with five or more units that were approved for occupancy (i.e. construction was completed) between 2000 and 2008. We limit our analysis to developments in the Bronx, Brooklyn, and Queens where parking requirements apply and where there is significant land area in zoning districts with high enough density to permit new construction with five or more units. We then remove 1,201 developments that included commercial or industrial use, were public housing or other income-restricted housing, homeless

shelters or supportive housing, or were missing critical information such as location. For the remaining 1,003 projects, we identify the project's zoning district, estimated parking requirements, and actual parking spaces built based on the certificate of occupancy data from the BIS website. We flagged properties eligible for automatic waivers. We confirmed our findings using the New York City Department of Information Technology and Telecommunications New York City map, ACRIS records, and the Digital Tax Map and made adjustments for lots with different lot areas, residential unit counts, or zoning designation than what was listed in their certificates of occupancy. This analysis does not account for variances approved by the Board of Standards and Appeals.

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