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21st Century SROs: Can Small Housing Units Help Meet the Need for Affordable Housing in New York City?

By Eric Stern and Jessica Yager

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Policy brief summary available at FurmanCenter.org.
Please see footnote 1 and Appendix D for a full list of acknowledgments.

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Introduction

Single-room occupancy housing (SROs) used to be a readily available affordable housing type in New York City. SRO units typically consisted of a private room with access to full bathroom and kitchen facilities that the renter shared with other building occupants. While this form of shared housing was common in New York for much of the city’s history, during the second half of the 20th century, most SROs came to serve as “housing of last resort—the safety net at the bottom of the market providing shelter for the poor and near-poor.”² Criticism of SROs mounted and led to laws banning the construction and discouraging the operation of SROs.³ Many SROs were subsequently converted to other forms of housing, resulting in the loss of thousands of very low-rent units in the city.

Today, the city faces a significant housing affordability crisis. In this context, it is worth considering whether the city needs an updated housing model that helps meet the need SROs filled in the last century. Here we analyze the benefits, risks, and challenges of reintroducing small housing units (self-contained micro units and efficiency units with shared facilities) in order to shed light on whether and how a new small-unit model could help meet the demand for affordable housing in the city today.

Previous NYU Furman Center research examined the challenges to developing compact units (micro units and accessory dwelling units) in five cities: New York; Washington, D.C.; Austin; Denver; and Seattle.⁴ We found that regulatory challenges, such as density and parking regulations; financial challenges, including issues obtaining traditional financing; and community opposition all contribute to the difficulty of constructing these types of units. In this new report, we go further to consider the costs of building small units and the barriers that small units face in New York City, in order to answer the question whether small units can help to meet the needs of the city’s low-income, single-person households.

In our first section below, we provide an overview of the potential demand for smaller, cheaper units, and describe the smaller, cheaper units currently in the housing stock in New York City. In our second section, we explore the economics of building smaller units. We compare the per-unit cost of building and operating micro units and efficiency units with shared facilities (which collectively we call “small units”) to the costs for traditional small studio apartments. To do this, we analyze three unit types: a 300 square

¹ We are very grateful to Vicki Been, Mark Willis, Alex Desronvil, and Traci Sanders for their assistance with this project. We thank Winston Beekman, Amy DeHuff, Lila Nojima, and Caroline Peri for their excellent research assistance. We thank the J.P. Morgan Chase Foundation for its generous support of this research. The full list of experts with whom we consulted in conducting this research is in Appendix D.

² Brian J. Sullivan & Jonathan Burke, *Single-Room Occupancy Housing in New York City: The Origins and Dimensions of a Crisis*, 17 CUNY L. Rev. 113, 117 (2013).

³ *Id.* at 122-23.

⁴ NYU FURMAN CENTER, COMPACT UNITS: DEMAND AND CHALLENGES (2014), http://furmancenter.org/files/NYUFurmanCenter_CompactUnitsResearchBrief_13AUG14.pdf; Vicki Been, Benjamin Gross & John Infranca, NYU Furman Center, *Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units* (Working Paper, 2014), http://furmancenter.org/files/NYUFurmanCenter_RespondingtoChangingHouseholds_2014_1.pdf.

foot micro unit with a self-contained kitchen and bathroom; a 225 square foot efficiency unit with a private bathroom and shared kitchen; and a 160 square foot efficiency unit with a shared bathroom and a shared kitchen. We also explore the financing barriers that may limit the production of such apartments in New York City today. In the third section we document the major regulatory barriers to construction of small units. Finally, we conclude by considering what actions New York City might take to encourage the development of such units, if it determines that is a policy goal.

I. The Case for Smaller Units

If small units translate to cheaper units, they may be helpful in cities facing affordable housing crises. New York City has a large population of single person households, and many of them are paying unaffordable rents; some of these individuals may be interested in living in small units if rent levels were lower than what these individuals are paying for their current housing. There are also people who could benefit on a temporary basis from an increase in the supply of small (and more affordable) units. This population includes temporary workers, adults in a period of life transition (e.g., following a change in marital status), and new arrivals to New York City such as recent immigrants and recent college graduates. Finally, small units may also be a way to meet the needs of some New Yorkers currently in homeless shelters (more than 20,000 without children),⁵ living in illegal units (estimated at around 100,000 in 2008),⁶ or coming out of the criminal justice system.⁷

It is impossible to say, exactly, who in the city would be willing to live in a smaller, cheaper unit. In this section, we attempt to shed some light on the possible demand in the city for small units, and on the existing housing stock that helps meet this need. Ultimately, both analyses suggest that there may be unmet demand for small units if those units can provide well-maintained housing at relatively low rents.

a. Many Single New Yorkers Struggle to Pay Their Rent.

Over the past several years, the Citizens Housing and Planning Council (CHPC) has helped spark interest in creating smaller housing units for non-nuclear families. They found that in 2010, 47 percent of New Yorkers over the age of 25 lived with neither a spouse nor a partner.⁸ More recent data show that as of 2015⁹ there were approximately 1,012,000 single adult households in New York City (33% of

⁵ NYC DEPARTMENT OF HOMELESS SERVICES, DAILY REPORT (Dec. 15, 2017), <https://www1.nyc.gov/assets/dhs/downloads/pdf/dailyreport.pdf>. (On file with authors).

⁶ CHHAYA COMMUNITY DEVELOPMENT CORPORATION AND CITIZENS HOUSING AND PLANNING COUNCIL, ILLEGAL DWELLING UNITS: A POTENTIAL SOURCE OF AFFORDABLE HOUSING IN NEW YORK CITY (2008), <http://chhayadc.org/wp-content/uploads/2008/10/Illegal-Dwelling-Units-A-Potential-Source-of-Affordable-Housing-in-New-York-City.pdf>.

⁷ In 2015, 5,720 people formerly living in New York City were released from the New York State Prison system. NEW YORK STATE CORRECTIONS AND COMMUNITY SUPERVISION, RELEASES AND DISCHARGES FROM INCARCERATION REPORT (2015), http://www.doccs.ny.gov/Research/Reports/2016/Statistical_Overview_2015_Discharges.pdf.

⁸ Citizens Housing and Planning Council, *Carmel Place, New York's First Modular Micro Building, Stacks First Unit* (May 20, 2015), <http://chpcny.org/2015/05/carmelplace>.

⁹ Data cited as 2015 comes from the 2011-2015 American Community Survey or IPums. These data are period estimates and should be interpreted as a measure of the conditions during the whole range.

households),¹⁰ 759,075 of which were renters.¹¹ As of 2015, 58 percent of single-adult renter households (over 436,000 people) in New York City were rent burdened (paying over 30% of income on rent), six percentage points higher than the overall city average.¹² Thirty-three percent, or over 250,000 people, were severely rent burdened (paying over 50% of income on rent).¹³

Figure 1 reports the income levels of rent-burdened New York City single-adult households in 2015. While some of these households had income in excess of area median income (AMI) in 2015, which was \$60,400 per year, approximately 85 percent had income at or below 80 percent of AMI (\$48,350 per year). Just under half of all rent-burdened single-person households had income less than 30 percent of AMI (\$18,150 per year). For lower-income households, being rent-burdened can be particularly punishing because it means that a household has little money left over after paying rent for other life expenses, like food, clothing, and medical care. Thus, some rent-burdened low-income renters may be interested in living in a smaller unit if that would reduce their housing costs.

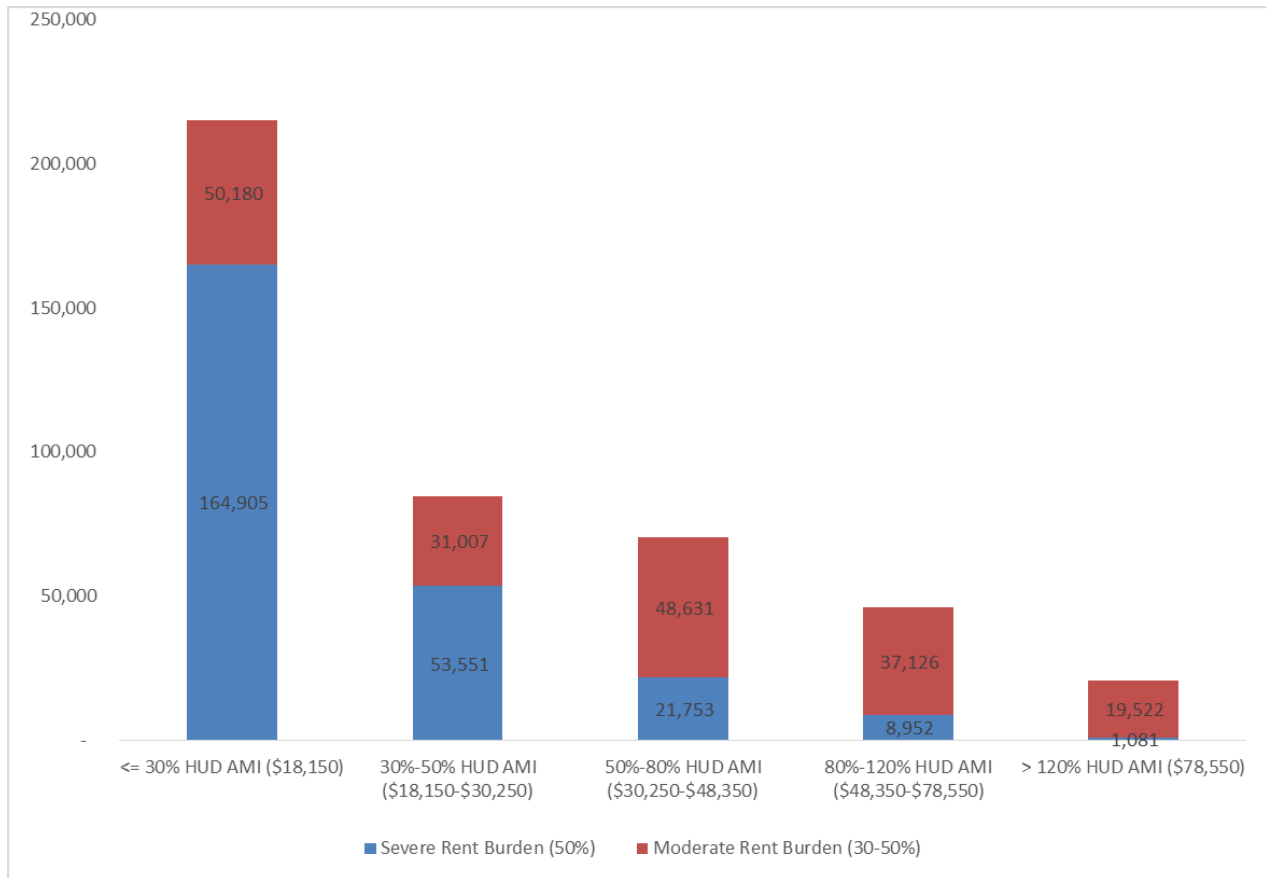
¹⁰ U.S. Census Bureau. *Tenure by Household Type (Including Living Alone) and Age of Householder (B25011)*. 2011-2015 American Community Survey. Retrieved from <http://factfinder.census.gov>.

¹¹ Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. Minneapolis: University of Minnesota, 2017. <https://doi.org/10.18128/D030.V5.0>. (Analysis on file with authors).

¹² Maxwell Austensen, et al., *State of New York City's Housing & Neighborhoods in 2015*, NYU FURMAN CENTER (May 9, 2016) http://furmancenter.org/files/sotc/NYUFurmanCenter_SOCin2015_9JUNE2016.pdf; Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. Minneapolis: University of Minnesota, 2017. <https://doi.org/10.18128/D030.V5.0>. (Analysis on file with authors).

¹³ Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. Minneapolis: University of Minnesota, 2017. <https://doi.org/10.18128/D030.V5.0>. (Analysis on file with authors).

Figure 1: Number of Single-Person, Rent-Burdened Households by Income in New York City, 2011-2015



Sources: IPUMS-USA, NYU Furman Center

In addition to rent-burdened single-adult households, there are also some adults who live with roommates who might be interested in smaller housing units if, as a result, they could afford to live alone. In New York City in 2015, there were 508,480 people in households of unrelated individuals; of this group, 437,366 people were renters.¹⁴ Of the individuals in renter households of unrelated people, 310,007 (71%) would have income at or below 80 percent of AMI if they were considered to be a single-adult household.¹⁵ While some of these people may prefer shared living arrangements, the fact that nearly all of these individuals have incomes below 80 percent of AMI suggests that they may have roommates in order to save on housing costs. Some of these adults might prefer the privacy of their own unit and the ability to have their own lease with a landlord if such an option were affordable.

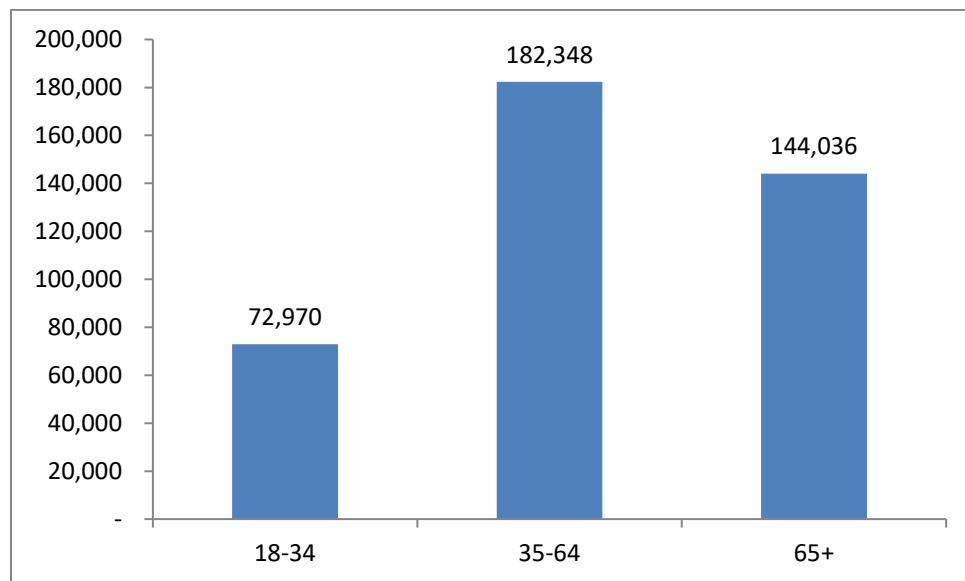
All types of small units, however, may not be equally desirable or appropriate for all single-person households, even if they do come with a lower price tag, because needs and demand for housing types

¹⁴ Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. Minneapolis: University of Minnesota, 2017. <https://doi.org/10.18128/D030.V5.0>. (Analysis on file with authors).

¹⁵ Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. Minneapolis: University of Minnesota, 2017. <https://doi.org/10.18128/D030.V5.0>. (Analysis on file with authors).

vary based on a number of factors. For instance, older adults (see Figure 2) wishing to age in place may prefer a unit large enough to also house a caregiver or special medical equipment. Younger adults, especially those coming out of living in a dorm setting at college, may be more open to shared living spaces than older adults. And, of course, there will be other variations in preferences and needs among the large population of single-person households that may make smaller units more or less attractive. But, at the same time, it is also likely that there are a substantial number who would consider and be well served by a smaller, cheaper unit.

Figure 2: Number of Single-Person, Rent-Burdened Households by Age in New York City, 2011-2015



Sources: IPUMS-USA, NYU Furman Center

b. There is a Very Limited Supply of Small Units to Meet Needs.

In Table 1, we report on the estimated number of small units in New York City, the share that are rent regulated, and estimated rent levels.¹⁶ Data on the precise number of SRO properties and rooms is imperfect.¹⁷ We show the number of SRO units, though the number of SROs units is likely higher due to illegal conversions not captured in these numbers.¹⁸ We also show the number of studio apartments in the city as a proxy for other small units (there is no way to estimate the number of units by size).

¹⁶ While there are 32,000 units of supportive housing in New York City (20,000 in congregate settings and 12,000 in scattered-site settings), some of which are small units, this report does not focus on accommodations that offer supportive services.

¹⁷ By definition, a SRO is a type of occupancy in a unit meeting certain physical criteria. SROs can be found in a range of building types and are frequently created illegally. They can be permanent class A dwellings or transient class B dwellings under New York State’s Multiple Dwellings Law. Definitional and data challenges make quantifying SROs difficult. Jake Wegmann & Sarah Mawhorter, *Measuring Informal Housing Production in California Cities*, 83-2 J. AM. PLAN. ASS’N 119, <https://doi.org/10.1080/01944363.2017.1288162>.

¹⁸ Tarry Hum, *Illegal Conversions Crackdown Could Worsen City’s Housing Crisis*, GOTHAM MAGAZINE (June 15, 2017), <http://www.gothamgazette.com/opinion/130-opinion/7000-illegal-conversions-crackdown-could-worsen-city-s-housing-crisis>.

Table 1: Estimated Supply of Small Unit Housing in New York City

Unit Types	1993			2014		
	Total Units	% Rent Stabilized or Controlled	Median Rent/Month in 2017 dollars	Total Units	% Rent Regulated	Median Rent/Month in 2017 dollars
SRO	38,377	81%	\$552	30,000	63%	\$1,148
Studio	117,253	72%	\$894	177,001	65%	\$1,308

Sources: *New York City Housing and Vacancy Survey (1993, 2014)*, *New York City Housing and Vacancy SRO Survey (1993)*, *New York City Rent Guidelines Board, U.S. Department of Housing and Urban Development Comprehensive Housing Affordability Strategy data (2006-2014)*, *NYU Furman Center*¹⁹

Note: The 1993 SRO figures includes some units with private kitchens and/or baths. Rents have been adjusted to 2017 dollars for comparison purposes. Rent-regulated status includes rent control or rent stabilization.

While the supply of SRO units has declined over the past two decades, the supply of studios has grown. The drop in SROs during this period is the continuation of a long decline. Earlier in the 20th century, SROs reportedly numbered more than 100,000 units in New York City.²⁰ Rents for both SROs and studios have grown in real dollars since 1993. With median rents of \$1,148 and \$1,308, respectively, the typical SRO and studio units would be unaffordable for many low-income New Yorkers in 2017.²¹

While there are SROs and micro units in New York City, their numbers are far less than the number of single-person households. It is impossible to know what the precise demand would be for small units, like micro units or a new version of SROs, if more were to be built. But the gap between the approximately 210,000 small units that exist and the almost 1.2 million renters living alone or with roommates suggest that there would be demand for more small units if they were available. The city should consider how best to fill this gap between supply and potential demand, especially for renters who are paying large sums of their income on rent. If smaller units can be cheaper to build and operate, by enabling their development the city could help reduce housing costs for single-person, rent-burdened households; and by doing so it could free up the large units those households currently occupy to be used to meet the needs of the city’s larger households. To this end, in the following section we explore the costs of developing and operating small units and the barriers that developers wanting to provide such units face.

¹⁹ The 1993 data is sourced from “Single Room Living in New York City” by Anthony J. Blackburn, a report prepared for HPD that includes data from the original primary sources noted in Sources list above. Anthony J. Blackburn, *Single Room Living in New York City* (1996) (on file with the NYU Furman Center).

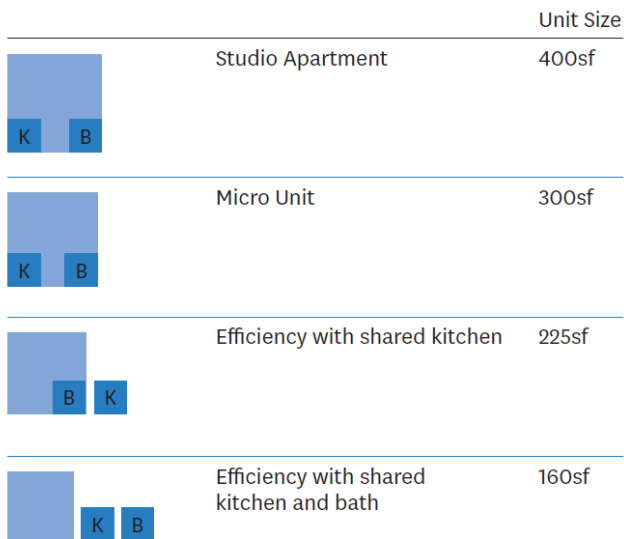
²⁰ For early 20th Century estimates, see Anthony J. Blackburn, *Single Room Living in New York City* (1996) (on file with the NYU Furman Center).

²¹ See U.S. Census Bureau. *New York City Housing and Vacancy Survey (2014)*. In 2017, a single-person household earning 60 percent of AMI made \$39,720 per year. To avoid being rent burdened, this person would have needed to spend about \$993 or less on rent. A two-person household earning 60 percent of AMI would have earned \$45,840 in 2017, allowing them to spend up to \$1,146 on rent without being rent burdened.

II. The Economics of Building and Operating Small Units

If small units are cheaper to build and operate than 400 square foot studio apartments (the minimum square footage for a newly constructed dwelling unit until the requirements were changed in 2016), permitting and encouraging their development may be a practical way to help many New Yorkers. We use financial modeling to estimate the economics of building three types of small units (see Figure 3): efficiency units with shared bathroom and kitchen (160 square feet), efficiency units with private bathroom but shared kitchen (225 square feet), and self-contained micro units (300 square feet).²² We also model the costs associated with traditional studio apartments (400 square feet) as a comparison.

Figure 3: Unit Types Used for Comparison in Financial Model



For this exercise, we do not specify how exactly the units will be designed. The efficiency units with shared facilities might be arranged along a common hallway (like a traditional SRO) or they might be rooms clustered into suites or apartments. Regardless of the design, we are conceiving of units in which people are living independently. In other words, the model we explore here is distinct from shared-apartment living. Unrelated adults have always shared spaces in New York City. What we propose here, though, is distinct from that. We are contemplating single room occupancy units—units in which adults occupy space that is private to them and have independent contractual relationships with the building owner. The difference between single room occupancy and a share is not the physical layout of the space; it is how that space is being occupied (**see sidebar**). Whether our efficiency units are in a suite or apartment with other efficiency units or arranged along a common hallway, they would be independent

²² For the efficiency with shared bathroom, we assume a unit size of 160 square feet (80 square feet per person under the New York State Multiple Dwelling Law). For the efficiency unit with in-unit bathroom, we estimate a total square footage of 225—160 square feet of living space and a 65 square feet of bathroom space.

homes for individual households. Shares exist and play an important role in the city’s housing market; but we think there may also be a role in the market for the efficiency units we describe, even though they are currently discouraged by law and not commonly built. While shares avoid the regulation of SROs and rooming units that we highlight in Section III and in Appendix C, they also require someone to live with roommates (without a lock on their door) and rely on others for their occupancy status (either sharing a lease or subletting).

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The Difference between Apartment Shares and SROs

The city’s Housing Maintenance Code’s definitions make clear that the distinction between shares and SROs is not based on how space is designed; it is based on how space is used. The Housing Maintenance Code states, “Apartment shall mean one or more living rooms, arranged to be occupied as a unit separate from all other rooms within a dwelling, with lawful sanitary facilities and a lawful kitchen or kitchenette for the exclusive use of the family residing in such unit.” The definition of “family” includes up to three unrelated individuals living together, but requires that the group maintain a common household.²³ The law further states, “A common household is deemed to exist if every member of the family has access to all parts of the dwelling unit. Lack of access to all parts of the dwelling unit establishes a rebuttable presumption that no common household exists.”²⁴ In short, adult roommates sharing an apartment where there are no locks on bedroom doors and there is a single lease for the unit are likely to meet the definition of a “family” under the Housing Maintenance Code.

However, in a situation where the occupants of an apartment are living independently from one another—which is the model we contemplate—the fact that they technically share an apartment does not insulate them from SRO status. The Housing Maintenance Code makes clear that SRO status is about independent households occupying shared space, not about how that space is configured:

Single room occupancy is the occupancy by one or two persons of a single room, or of two or more rooms which are joined together, separated from all other rooms within an apartment in a multiple dwelling, so that the occupant or occupants thereof reside separately and independently of the other occupant or occupants of the same apartment. When a class A multiple dwelling is used wholly or in part for single room occupancy, it remains a class A multiple dwelling.²⁵

When the units being occupied for single room occupancy do not have a private kitchen and/or bath—again, the model we contemplate—they are defined as “rooming units;” and those rooming units can be located in an apartment:

Rooming unit shall mean one or more living rooms arranged to be occupied as a unit separate from all other living rooms, and which does not have both lawful sanitary

²³ The definition of “family” under the Housing Maintenance Code includes “Not more than three unrelated persons occupying a dwelling unit and maintaining a common household;” and “Not more than three unrelated persons occupying a dwelling unit in a congregate housing or shared living arrangement and maintaining a common household.” N.Y.C. ADMIN. CODE §§ 27-2004(a)(4)(b)-(c) [hereinafter “HOUSING MAINTENANCE CODE”].

²⁴ HOUSING MAINTENANCE CODE § 27-2004(a)(4).

²⁵ HOUSING MAINTENANCE CODE § 27-2004(a)(17).

facilities and lawful cooking facilities for the exclusive use of the family residing in such unit. It may be located either within an apartment or within any class A or class B multiple dwelling²⁶

These definitions make clear that rooms in a traditional apartment housing adults living independently would be rooming units, and the apartment would be being used for single room occupancy. The locks on the doors likely desired for this housing model and the existence of independent leases would be strong evidence of these statuses.

The legal distinctions between family and single room occupancy and between apartments and rooming units become important because of the regulation of these classifications in the law. We discuss some of these provisions in Section III and Appendix C. Most relevant for our discussion, the Housing Maintenance Code limits the creation of new rooming units and has a number of provisions that regulate conditions and design of rooming units and units used for single room occupancy.²⁷

The Multiple Dwelling Law (the state law that regulates multiple dwellings) also regulates single room occupancy units, but contains no prohibition on their creation.²⁸ Its definition of single room occupancy and many of its regulations of SROs are identical to those in the Housing Maintenance Code.²⁹

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In our financial analysis, we identify the lowest rent levels needed to allow for a competitive return, if government subsidy is limited to a property tax exemption. We also assume the city would waive the dwelling unit factor regulation limiting the number of micro units permitted on a site in New York City (we will address that and other regulatory barriers to small units in the next section of the paper). The modeling is based on numerous other assumptions (presented in Appendix A), and is not intended to offer the exact cost savings of building small units or precise per-unit monthly rent needed to support new construction. Rather, we seek to use reasonable assumptions to highlight the rough magnitude of the relative space and cost savings associated with these different small unit types.

Although more small units can fit in a hypothetical building than 400 square foot studios, we find that the space and cost savings are not proportional to the reduction in apartment size. Nevertheless, there are significant cost savings from building smaller units. It is less clear, however, to what extent the cost of operating smaller units is different than the operations costs of traditional studios. Ultimately, we conclude that the cost of building and operating the types of small units we consider is low enough to serve low-income and moderate-income households and still provide adequate financial returns with only a public subsidy of a tax exemption. We also consider what additional subsidies can be used to achieve even lower rents and financial feasibility across a range of neighborhoods.

²⁶ HOUSING MAINTENANCE CODE § 27-2004(a)(15).

²⁷ See, e.g., HOUSING MAINTENANCE CODE §§ 27-2077 (prohibition on creation of new rooming units), 27-2067 & 27-2079 (regulation of sanitary facilities rooming units and units used for single room occupancy); 27-2080 (requirement to keep registry for SROs), 27-2012 (requirement to clean rooming units or SROs prior to occupancy and once a week during occupancy), 27-2051 (requirement that manager responsible for maintenance and operation reside in any dwelling used for SRO).

²⁸ See, e.g., N.Y. MULT. DWELL. L. §§ 76(6) (regulating water closets and baths), 248 (regulating many aspects of units used for single room occupancy).

²⁹ N.Y. MULT. DWELL. L. § 4(16).

a. Small Units Can Result in More Units in a Given Space.

It might appear obvious that the creation of units smaller than 400 square feet can allow more units within the same building envelope. At the same time, as Table 2 reveals, the increase in the number of units cannot simply be determined by reallocating the square feet of each unit to a new unit. In planning for small units, there are a number of reasons why rentable unit space is lost: 1. As units get smaller it can become harder to efficiently fit them into a given space (in technical terms, the “loss factor” may increase); 2. For efficiency units, shared kitchens and/or baths will also take up otherwise rentable space; 3. Efficiency units with shared kitchen and/or baths are also required to house a live-in building manager. Based on our assumptions about these three factors, we find that a building with 300 square foot micro units can contain only 29 percent more units than a building with 400 square foot studios, even though the studios are each 33 percent larger than the micro units. Our studio units are 78 percent larger than the 225 square foot efficiency units; but our building of these efficiency units can only contain 58 percent more units than a building of studios. Finally, our studio units are 150 percent bigger than our 160 square foot efficiency units, but our building of these smallest efficiency units can fit only 99 percent more units.

Table 2: Potential to House More Individuals with Smaller Units

	Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
Unit Size (sq ft)	400	300	225	160
# Units	126	163	199	251
% Increase in Units vs. Small Studio		29%	58%	99%
Manager's Unit			800	800
Shared kitchen area (@ 80 sq ft/ kitchen)/building*	N/A	N/A	2,653	3,347
Shared bath area (@ 65 sq ft/bath)/building*	N/A	N/A	N/A	2,719
Total square feet	50,400	48,900	48,228	47,026

*We assume one kitchen for every six people/rooms, and one bath for every six people/rooms.³⁰

We do not assume any additional common space beyond what is needed for shared facilities. Some developers may wish to add additional communal space in a building as unit size shrinks. More common space, however, will reduce the number of rent-paying units and thereby increase rents. For example, we estimated the impact of a 1,000 square foot additional common space in our building of efficiency units with shared kitchens. The addition of that common space would result in four fewer rental units. And, all the units in the building would pay more rent than the rents we show in Table 3 below for that building type. Depending on the land costs for the building, the rent increases ranged from \$19 per month to \$33 per month.

b. Small Units Require Less Rent to Support Development and Operations than Traditional Studio Apartments.

Above we show the degree to which building small units can increase the number of units in a building.

³⁰ There must be at least one bathroom for every six occupants, and at least one bathroom per floor. HOUSING MAINTENANCE CODE §§ 27-2067(a), 27-2079; N.Y. MULT. DWELL. L. § 76(6).

Here, we consider the minimum rent that different types of small units would have to charge to support the development and operation of a building while still enabling not-for-profit or for-profit developers to achieve a competitive level of financial return on investment.

In Table 3, we estimate the minimum monthly rent required to allow for what market participants describe as a competitive financial return depending on the unit and market type. For very strong and strong markets (e.g., central and lower Manhattan and East Harlem, respectively), we assume an unleveraged net operating income (NOI) yield on total development costs³¹ of 5.25 percent for micro units and 5.75 percent for efficiency units with shared kitchens and/or baths to account for the perceived greater risk of building and operating units with shared facilities.³² In weaker markets (e.g., North Bronx and East New York), we use an NOI yield of 5.75 percent for micro units and 6.25 percent for efficiency units with shared facilities. The rents in Table 3 are those that we estimate would permit a developer to achieve the target NOI yield for a given unit type and market type. In addition, below each monthly rent figure, we indicate the lowest income a tenant could have and still be able to afford the reported rent. Our financial model assumes that each property will receive a full exemption from property taxes. We also assume that no off-street parking spaces will be required or built.

The top row of Table 3 shows that the lowest cost scenario—developing efficiency units with shared kitchens and baths on free land—requires rents of approximately \$840 per month to support a competitive financial return on investment. While this monthly rent is affordable to a single-adult household with annual income of \$34,068 (51% of AMI), it is not low enough to serve nearly one-half of the rent-burdened single-adult households in New York City. Of course, as the lower rows on the table show, developing larger unit types and/or developing in areas with higher land costs would require even higher rents unless additional public subsidy were provided (though the rents would still be affordable to individuals with low or moderate incomes in some instances). If the city were interested in supporting the development of small units for lower-income households, it could provide subsidy in addition to the tax exemption and free land, in the form of either a construction subsidy or an operating subsidy. In Appendix B, we estimate how the amount of subsidy needed varies for each of our unit types.

Table 3: Estimated Monthly Rent Needed to Support New Construction of Smaller Units, Given Different Land Costs

	Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
Land Costs = \$0/ sq ft	\$1,480	\$1,240	\$1,170	\$840
Corresponding AMI Level	89%	75%	71%	51%
Land Costs = \$50/sq ft	\$1,590	\$1,330	\$1,250	\$910
Corresponding AMI Level	96%	80%	75%	55%
Land Costs = \$200/sq ft	\$1,820	\$1,500	\$1,410	\$1,040
Corresponding AMI Level	110%	90%	85%	63%
Land Costs = \$450/sq ft	\$2,360	\$1,920	\$1,780	\$1,340
Corresponding AMI Level	142%	115%	107%	81%

³¹ NOI Yield, one measure of financial return, is the net operating income in the first year of full apartment lease up divided by the total development costs incurred by a developer.

³² Our conversations with industry experts revealed that developers would require a slightly higher return for the risks associated with developing units with shared baths and/or kitchens.

As shown in Table 3, the estimated rents required to support new construction decrease in each market type as the unit is made smaller. This occurs because of changes in per-unit development costs and per-unit operating costs. While we are confident that development costs will be cheaper on a per-unit level, it is more challenging to estimate what operating costs will be per unit (especially for the units with shared facilities). Below, we address how development costs and operating costs change as the unit type changes.

i. Development costs per unit are less for small units than for studios apartments.

Building-level construction costs are higher for self-contained micro units and efficiencies with shared kitchens than for traditional studios because additional piping and fixtures is required for the smaller unit types. Thus, we see in Table 4 that total costs for developing a building of micro units or a building of efficiencies with shared kitchens increase, even as the per-unit costs decrease. However, both building-level and per-unit costs are cheaper for efficiencies with shared bathrooms and kitchens than for small studios because there are far fewer bathrooms and kitchens in the building, and because the costs associated with constructing a building are divided among more dwelling units.

As shown in Table 4, based on assumptions described in the appendix, the per-unit cost of building a small studio, not including site acquisition, is approximately \$215,000. A micro unit can be built at approximately 82 percent of that cost; an efficiency with shared kitchens can be built at about 71 percent of that cost; and the efficiency with shared bathroom and kitchen can be built at about 43 percent of that cost.

Table 4: Estimated Hard and Soft Costs of New Construction by Unit Type (Excluding Land Cost)

	Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
Total Hard + Soft Costs/Building	\$27,117,900	\$28,800,450	\$30,437,530	\$23,290,470
Cost Compared to Small Studio	100%	106%	112%	86%
# Units	126	163	199	251
Total Hard + Soft Costs/Unit	\$215,220	\$176,690	\$152,960	\$92,800
Cost Compared to Small Studio	100%	82%	71%	43%

ii. Operating costs per unit are less for small units than for studios apartments.

As a developer places more units within the same building envelope, based on our assumptions about how maintenance and operations (M&O) costs change with additional units and shared spaces, she can expect that the total costs of operating a building will rise but, most likely, per-unit costs will decrease. Estimating operating expenses for units with shared facilities, however, is particularly difficult because of the unpredictability of managing shared spaces.

There are three categories into which M&O costs fall. First, some building level costs, like accounting expenses, typically remain constant despite an increase in the density of units. When these fixed costs are spread across more units, their cost per-unit drops. In other words, economies of scale for these costs can be achieved by building denser buildings. Second, other costs, such as legal, insurance, and building maintenance costs will increase for the building as the number of units increases because the per-unit cost

remains constant as the number of apartments, and the cost per building, rises.

There is a third category of costs, however, that may rise at the per-unit level with the inclusion of small units. If a building with small units has more common space per unit than a building with larger units (as we assume it would), the per-unit cost of maintaining and managing common spaces will likely rise compared to the cost for a larger unit that necessitates less common space. Those costs are especially likely to be higher when bathrooms and/or kitchens are shared. More sharing, especially of those kinds of essential spaces, can lead to more conflict that requires intervention of building staff to resolve. It is very hard to estimate this cost; and, in our conversations with shared-housing operators, we heard substantially different points of view about how common such conflicts are and what it requires to manage them. Moreover, there are legal requirements for management of buildings with shared facilities that also may drive up costs. In addition to the cleaning and janitorial staffing requirements that apply to the typical apartment building,³³ operators of efficiency units must clean each room thoroughly prior to occupancy and ensure sleeping rooms are cleaned weekly thereafter.³⁴ Buildings with units of this type must have a manager who lives on site who is responsible for “the conduct, operation and maintenance of the dwelling,” and there must also be a registry of occupants.³⁵ Additionally, buildings with shared facilities with 11 or more occupants must have a laundry facility.³⁶

In short, it is likely that a building with shared space will require some additional staff time both to meet the legal requirements and to address conflicts that may arise in shared spaces or institute systems to reduce them. For these reasons, there will be some maintenance and operations costs that likely increase at the per-unit level in buildings with shared spaces; and these costs are likely to be higher for efficiency units with shared facilities than for micro units.

We have estimated the costs of maintaining and operating small units in Table 5, and have attempted to account for the various ways that these costs differ as units get smaller, as explained above. More detail about our assumptions can be found in Appendix A. Table 5 shows that M&O costs for smaller units could allow for per-unit operating costs between 11 and 22 percent lower than for 400 square foot small studios. The estimates for units with shared facilities, however, are less certain than those for self-contained micro units because of the risks associated with management of shared spaces.

Table 5: Estimated Annual Operating Costs by Unit Type

	Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
Total Annual Operating Costs/Building	\$631,200	\$727,400	\$842,530	\$999,690
Cost Compared to Small Studio	100%	115%	133%	158%
# Units	126	163	199	251
Total Annual Operating Costs/Unit	\$5,010	\$4,460	\$4,230	\$3,980
Cost Compared to Small Studio	100%	89%	84%	79%

³³ See N.Y. MULT. DWELL. L. §§ 80, 83; HOUSING MAINTENANCE CODE §§ 27-2012, 27-2053, 27-2054.

³⁴ N.Y. MULT. DWELL. L. § 248(13); HOUSING MAINTENANCE CODE § 27-2012.

³⁵ N.Y. MULT. DWELL. L. §§ 248(15), (17); HOUSING MAINTENANCE CODE §§ 27-2051, 27-2080.

³⁶ N.Y. MULT. DWELL. L. § 248(8)(b).

As we have shown, building small units allows many more units to fit on a particular development site. We have also shown that lower per-unit rents are needed to support the construction of small units than larger units. But, despite these efficiency benefits, there are a number of barriers (both financial and regulatory) that limit the development of small units in New York City today. We explore some of the key barriers in the section below.

III. Barriers to Developing Small Units

There are a number of factors that impede the development of small units in New York City. But, notably, there is no absolute prohibition on any of the models we explore in this report. Here we highlight three key regulatory barriers and the financial barriers that make it difficult to develop small units. In **Appendix C**, we describe other regulations governing the design and maintenance of small units that, while less restrictive than those discussed here, can also pose challenges and increase costs depending on the specific site and project. In Section IV below, we consider steps the city could take to address some of these impediments.

a. The Housing Maintenance Code limits who can build units with shared facilities.

As part of the movement in the last century to limit SROs in New York City, the city passed a law imposing strict requirements about who is eligible to create rooming units. A “rooming unit” is defined in the Housing Maintenance Code (HMC) as a private room with a shared kitchen and/or bath.³⁷ Traditional SROs were rooming units and so are the efficiency units we describe in this paper. The HMC limits the creation of rooming units to the following scenarios:

- a. No rooming unit which was not classified and recorded as such in the department prior to May fifteenth, nineteen hundred fifty-four or converted to such use prior to April thirtieth, nineteen hundred fifty-six, shall be created in any dwelling, whether such conversion is effected with or without physical alterations, except for rooming units:
 - (1) Owned or controlled and operated by a hospital for occupancy by nurses and interns on its staff; or
 - (2) Owned and operated without profit by an educational, religious or charitable institution as a residence for the aged, or for working girls or women, or for working boys or men, or for delinquent, dependent or neglected children, or for students attending a school or college; or,
 - (3) approved by the commissioner of the department and created with the substantial assistance of loans, grants or subsidies from any federal, state or local agency or instrumentality; or

³⁷ The Housing Maintenance Code defines a rooming unit as “one or more living rooms arranged to be occupied as a unit separate from all other living rooms, and which does not have both lawful sanitary facilities and lawful cooking facilities for the exclusive use of the family residing in such unit.” HOUSING MAINTENANCE CODE § 27-2004(15).

- (4) approved by the commissioner of the department and owned, operated or used by any federal, state or local agency or instrumentality or by a non-profit organization.

b. When the ownership, operation or use by an institution or public agency for any of the purposes enumerated in subdivision a ceases, the certificate of occupancy shall expire.³⁸

As a result of this law, the efficiency units we describe in this paper cannot be constructed unless they are approved by the HPD commissioner and either owned, operated, or used by a non-profit or built with “substantial assistance” from government. What “substantial assistance” includes does not appear to be defined in the law or in publicly available documents interpreting the law.

b. Density regulations limit the number of micro units permitted on a lot (but not efficiency units with shared facilities).

The most significant impediment to construction of micro units may be the Zoning Resolution rule that limits the number of dwelling units permitted on a zoning lot (referred to as the “density factor”). The Zoning Resolution’s cap for the number of dwelling units permitted on a lot is the maximum permitted residential floor area divided by a predetermined dwelling unit factor for each residential zoning district (R1 through R10).³⁹ For example, in an R7 district (typified by midrise apartment buildings), a lot with a maximum permitted floor area of 60,000 square feet would be permitted to house only 88 dwelling units.⁴⁰ A building with 88 micro units would only use approximately 26,400 of the available 60,000 square feet of permitted floor area. If we assume a building uses all the lot’s permitted floor area, this would result in an average unit size of 681 square feet, much larger than our 300 square foot micro unit. Notably, the density factor only applies to micro units (“dwelling units” under the Zoning Resolution), and not to efficiency units with shared facilities (“rooming units” under the Zoning Resolution).⁴¹

The limit on the number of dwelling units in a building discourages the inclusion of micro units because it limits design flexibility for the buildings. In Table 6, we have designed a hypothetical building with a unit mix that complies with the density factor regulation while also using close to the allowable residential floor area. It is certainly possible to design a building incorporating micro units, as Table 6 illustrates. Indeed, because efficiency units are rooming units, not dwelling units, they can also be paired with micro units and not count against the density-factor cap. But, the cap on the number of permitted dwelling units makes it more challenging to include micro units as a high share of the total number of units and still max

³⁸ HOUSING MAINTENANCE CODE § 27-2077.

³⁹ N.Y.C. ZONING RES. § 23-22.

⁴⁰ The “FACTOR FOR DETERMINING MAXIMUM NUMBER OF DWELLING UNITS” for an R7 district is 680. So, to determine the permitted number of units, the total permitted floor area is divided by 680: 10,000/680 = 14.7.

⁴¹ The Zoning Resolution’s definition of “dwelling unit” states that a “dwelling unit includes lawful cooking space and lawful sanitary facilities reserved for the occupants thereof.” Therefore, micro units are “dwelling units” according to the Zoning Resolution. The efficiencies with shared facilities are “rooming units,” not “dwelling units,” because they lack either bathrooms, cooking space, or both. *See* N.Y.C. ZONING RES. § 12-10. Rooming units are not subject to a density factor regulation since the adoption of Zoning for Quality and Affordability (ZQA) text amendment in 2016. *See* Approved ZQA Zoning Text Amendment, N.Y.C. ZONING RES. § 23-22, accessed from <https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/zqa/approved-zoning-text-032216.pdf>.

out the available square footage.

Table 6: Hypothetical Unit Mix for Mid-Rise Building Complying with Density Factor Regulation

Sq. Ft./Units	# of Units	# of Sq. Ft.	Sq. Ft. Rent/Year	Unit Rent/Year	Building Rent/Year	Monthly Rent/Unit
900	38	34,200	\$30	\$27,000	\$1,026,000	\$2,250
700	27	18,900	\$30	\$21,000	\$567,000	\$1,750
300	22	6,600	\$50	\$15,000	\$330,000	\$1,250
Total	87	59,700			\$1,923,000	

Notably, the density factor does not apply to “non-profit institutions with sleeping accommodations,” which is a community facility use type under the Zoning Resolution (Use Group 3).⁴² Supportive housing that provides services to special populations can be built under this classification and thereby avoids the density factor restriction. Additionally, the density factor does not apply to “affordable independent residences for seniors.”⁴³

c. Parking requirements, where applicable, drive up the cost of developing small units.

Parking requirements for new residential construction often drive up the cost of constructing housing.⁴⁴ These requirements are tied to the number of units in a building,⁴⁵ so may be particularly burdensome for buildings with smaller (and therefore more) units. However, residents of small units, especially low-income single adults, are probably less likely to own cars than larger households.⁴⁶

⁴² N.Y.C. ZONING RES. § 22-13 (listing “non-profit institution with sleeping facility” as a part of Use Group 3, a community facility). Simply stated, as defined by the Zoning Resolution, community facilities do not contain dwelling units, so regulation of the maximum number of dwelling units permitted on a lot is inapplicable. *See* N.Y.C. ZONING RES. § 12-10 (definitions).

⁴³ N.Y.C. ZONING RES. § 23-22. “An ‘affordable independent residence for seniors’ is a #building# or portion thereof, containing #residences#, in which at least 90 percent of the #dwelling units# allocated to #affordable independent residences for seniors# are each occupied by at least one person who is 62 years of age or over; where, except for a #super’s unit#, all of the #dwelling units# allocated to #affordable independent residences for seniors# are #income-restricted housing units# used for class A occupancy as defined in the New York State Multiple Dwelling Law.” N.Y.C. ZONING RES. § 12-10.

⁴⁴ Vicki Been, et al., *Searching for the Right Spot: Minimum Parking Requirements and Housing Affordability in New York City*, NYU FURMAN CENTER (March 2012)

http://furmancenter.org/files/publications/furman_parking_requirements_policy_brief_3_21_12_final_1.pdf.

⁴⁵ N.Y.C. ZONING RES. § 25-23.

⁴⁶ Alissa Gardenhire & M. William Sermons, *Understanding Automobile Ownership Behavior of Low-Income Households How Behavioral Differences May Influence Transportation Policy*, E-C026 TRANSPORTATION RESEARCH CIRCULAR 179–195 (2001).

Except in the Manhattan Core (Community Districts 1-8) and Long Island City, parking is generally required for new residential developments or enlargements (see Table 7). Within the Transit Zones designated by Zoning for Quality and Affordability (ZQA), parking is not required for income restricted housing units (IRHU)⁴⁷ or for affordable independent residences for seniors (AIRS).⁴⁸ Outside of the Transit Zones, parking is required for at least 10 percent of the total number of dwelling units in an AIRS (except in Bronx Community District 10); and IRHUs are also subject to reduced parking requirements (compare Table 7 and Table 8).⁴⁹

Currently, there is some confusion in the Zoning Resolution about whether parking requirements apply to rooming units. Section 25-23 (“Requirements Where Group Parking Facilities Are Provided”) outlines the amount of parking that must be provided for all new “residences.”⁵⁰ A residence is defined as a rooming unit or a dwelling unit.⁵¹ However, in a different section of the Zoning Resolution (Section 25-21, “General Provisions”), language applying the parking requirements to rooming units was removed with the Zoning for Quality and Affordability amendments made in 2016.⁵² This change suggests that the city intended to remove rooming units from the category of units subject to parking rules; but, the failure to also amend Section 25-23 may result in on-going confusion about the applicability of parking requirements to this unit type. If parking requirements were applied to rooming units, affordable rooming units would not receive the relief that affordable dwelling units (IRHUs and AIRS) receive in the Transit Zones because the definition of “income restricted housing unit” does not include rooming units.⁵³ This would have a significant financial impact on these development.

Table 7: Parking Spaces Required for Residential Developments (except IRHUs or AIRS)⁵⁴

District	Required Parking Spaces as a Percent of Residences
R1, R2, R3, R4-1 and R4A in Staten Island’s Lower Density Growth Management Areas	150 – 200*
R1, R2, R3, R4-1 and R4A in Lower Density Growth Management Areas Outside of Staten Island	150
R4 R4B R5A	100

⁴⁷ N.Y.C. ZONING RES. § 25-251.

⁴⁸ N.Y.C. ZONING RES. § 25-252.

⁴⁹ N.Y.C. ZONING RES. §§ 25-251 & 25-252. In Bronx Community District 10’s lower density growth management areas, parking spaces are required for 12.5 percent of AIRS units in R7-1 Districts and 16 percent of AIRS units in R6 Districts. *See* N.Y.C. ZONING RES. § 25-252.

⁵⁰ N.Y.C. ZONING RES. § 25-23.

⁵¹ N.Y.C. ZONING RES. § 12-10.

⁵² The approved amendments to Section 25-21 included, “In all districts, as indicated, #accessory# off-street parking spaces, open or enclosed, shall be provided for all #dwelling units# ~~or #rooming units#~~ created after December 15, 1961, in accordance with the provisions of the following Sections and the other applicable provisions of this Chapter, as a condition precedent to the #use# of such #dwelling unit# ~~or #rooming unit#~~.” Approved ZQA Zoning Text Amendment, N.Y.C. ZONING RES. § 25-21, accessed from <https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/zqa/approved-zoning-text-032216.pdf>.

⁵³ IRHUs and AIRS are defined as “dwelling units,” which must have a kitchen and bathroom in the unit. They do not encompass “rooming units,” which is the classification for a unit with a shared bath or kitchen. N.Y.C. ZONING RES. § 12-10.

⁵⁴ N.Y.C. ZONING RES. § 25-23.

R5	85
R6	70**
R5B R5D	66
R7-1	60**
R6A R6B R7-2 R7A R7B R7D R7X R8B***	50**
R8 R9 R10	40
Special Downtown Brooklyn District (except R6B) ⁵⁵	20

*Two parking spaces are required for a single-family home.

**For Quality Housing in R6 and R7 Districts, parking spaces must be provided for at least 50 percent of dwelling units.

***In Brooklyn, R8B Districts only must provide parking spaces for at least 40 percent of dwelling units.

Table 8: Parking Spaces Required for IRHUs outside of the Transit Zone⁵⁶

District	Required Parking Spaces as a Percent of Percent of Residences
R3-2 R4	50
R5 R5B	42.5
R5D	35
R6 R7B	25
R7-1 R7-2 R7A R7D R7X R8B*	15
R8 R8A R8X R9 R10	12

*In Brooklyn, R8B Districts only must provide parking spaces for at least 12 percent of income restricted housing units.

The financial modeling we use to estimate the cost of constructing small units, reported in Section II, assumes that there are no parking requirements. But, if income-restricted micro units were constructed outside of Core Manhattan, Long Island City, or Transit Zones, parking requirements would drive up costs and would make those projects less feasible.

d. Financing for small units may be difficult to obtain from either the public or private sector.

Many government programs used to finance affordable housing development have rules or guidelines that discourage or prohibit small units. In addition, there may still be some concern among private lenders about how much long-term demand there is for these unit types. We address availability of both government subsidies and private financing for small units below.

i. Many commonly used subsidies favor the creation of larger units.

⁵⁵ N.Y.C. ZONING RES. § 101-50.

⁵⁶ N.Y.C. ZONING RES. § 25-251.

In our modeling, we assume that our hypothetical development will receive a full property tax exemption. The three most commonly used property tax exemption programs in New York City are the Article XI tax exemption, the 420-c tax exemption, and the 421-a tax exemption. All three can be used to support the creation of small units, yet each also has limitations. 420-c, a tax benefit offering up to 60 years of exemption, can only be used in conjunction with LIHTC and the building must be at least partially owned by a non-profit.⁵⁷ Article XI, a tax exemption offering up to 40 years of full tax exemption, must be approved by the City Council, which introduces political risk that many developers may wish to avoid; and, only Housing Development Fund Corporations are eligible for Article XI tax exemptions.⁵⁸

The 421-a tax exemption, now termed the “Affordable New York Housing Program,”⁵⁹ could also be used to support the development of small units.⁶⁰ But, the program’s rules about unit size could discourage its use for small units: “Unless preempted by the requirements of a federal, state or local housing program, either (A) the affordable housing units in an eligible site shall have a unit mix proportional to the market units, or (B) at least fifty percent of the affordable housing units in an eligible site shall have two or more bedrooms and no more than twenty-five percent of the affordable housing units shall have less than one bedroom.”⁶¹ These requirements limit the design options for a developer looking to incorporate small units into a new development because they either limit small units to 25 percent of the building or require that a building with affordable small units also include market-rate small units, for which the demand might be less certain.

A developer might also seek subsidy in addition to a property tax benefit to further reduce costs. If the developer opts into the Inclusionary Housing Program (referred to as the “Voluntary” program) or is governed by the Mandatory Inclusionary Housing Program, laws governing these programs may make development of affordable small units challenging or impossible in some instances. The definition of an “affordable housing unit” in the New York City Zoning Resolution only includes a “dwelling unit” (which excludes units with shared baths and/or kitchens), class B “rooming unit” (which excludes permanent residences), and “supportive housing unit.”⁶² Therefore, an efficiency unit with shared facilities used for permanent occupancy would not count towards the affordable unit set-aside requirements under the city’s inclusionary zoning programs.

In addition, minimum unit size requirements in the Voluntary Inclusionary Housing program preclude development of any unit less than 400 square feet; in the mandatory program, affordable units smaller

⁵⁷ See NYC DEP’T OF HOUS. PRESERV. AND DEV., Tax Incentives: 420-c.
<http://www1.nyc.gov/site/hpd/developers/tax-incentives-420c.page>

⁵⁸ See NYC DEP’T OF HOUS. PRESERV. AND DEV., Tax Incentives: Article XI.
<http://www1.nyc.gov/site/hpd/developers/tax-incentives-article-xi.page>

⁵⁹ Rules governing the new 421-a program, called “Affordable New York Housing,” do not contain a provision found in the old version of the rules that prohibited SRO units from receiving 421-a benefits. *Compare* 28 RCNY § 51 with 28 RCNY § 6-02(c)(4).

⁶⁰ Under 421a, for the period of the benefit, a building owner pays taxes on the assessed value of the property before development; the value of the improvement on the land (the new building) is exempted from the property tax calculation for a set number of years. See Eric Stern, Mark Willis, and Josiah Madar. Nov. 2015. The Latest Legislative Reform of the 421-a Tax Exemption: A Look at Possible Outcomes. furmancenter.org/files/NYUFurmanCenter_421aOutcomesReport_9Nov2015.pdf

⁶¹ N.Y. REAL PROP. TAX L. § 421-a (16)(g)(ii) (2017).

⁶² N.Y.C. ZONING RES. §§ 12-10, 23-911.

than 400 square feet can be built as long as their average size is comparable to that of market rate units in the same building.⁶³ The Zoning Resolution also requires that the affordable housing units in both mandatory and voluntary inclusionary housing projects have a bedroom mix comparable to the mix of the market-rate units in the project or that they meet minimum bedroom-number requirements similar to those in the 421-a program.⁶⁴ HPD has the power to waive these requirements in certain circumstances.⁶⁵ As with the unit-size parity requirement in the 421-a program, requiring that market-rate and affordable units be of similar size may discourage the construction of small units in some cases if market-rate small units are seen as riskier.

Developers seeking to build affordable units with HPD or Housing Development Corporation (HDC) subsidy, city administered LIHTC,⁶⁶ or a 421-a tax exemption must also comply with HPD's design guidelines, which include provisions that affect unit size. While recently altered by HPD and HDC to permit smaller units, the rules currently require that studio units include a 200 square foot sleeping/living/dining area (reduced from 250 square feet in the 2000 new construction guidelines).⁶⁷ These standards produce studio sizes ranging from 350 to 400 square feet, to accommodate the bathroom and kitchen facilities.⁶⁸ For a number of its new construction programs, HPD also requires that a minimum of 30 percent of units are two-bedrooms or larger.⁶⁹ The New York State Housing Trust Fund has similar design guidelines for subsidy recipients specifying that a studio should be a minimum of 450 square feet.⁷⁰ Neither state nor local design guidelines (aside from those related to supportive housing) specifically address units with shared bathrooms or kitchens.

Most rental voucher subsidies that make market rents affordable to low-income New Yorkers can be used for small units of all types.⁷¹ New York State Homes and Community Renewal, however, prohibits

⁶³ N.Y.C. ZONING RES. § 23-96(d)(1). These unit-size requirements, along with others in both programs requiring that bedroom composition parity between market rate and affordable units (N.Y.C. ZONING RES. § 23-96(c)) and that affordable units be distributed on 65 percent or as many floors as possible (N.Y.C. ZONING RES. § 23-96(b); 28 RCNY § 41-21), do not apply for senior housing and can be waived by HPD under certain circumstances.

⁶⁴ N.Y.C. ZONING RES. § 23-96(c).

⁶⁵ Referring to both the unit-size and the bedroom-number requirements, the NYC Zoning Resolution sections 23-96 (c) and (d) state, “#HPD# may also waive such . . . requirements for any #new construction affordable housing# that either is participating in a Federal, State or local program where such #generating site# or #MIH site# cannot comply with both the regulations of such Federal, State or local program and those of this Section[.]”

⁶⁶ NYC DEP'T OF HOUS. PRESERV. AND DEV., QUALIFIED ALLOCATION PLAN 15 (2016).

<https://www1.nyc.gov/assets/hpd/downloads/pdf/developers/2016-qualified-allocation-plan.pdf>.

⁶⁷ NYC DEP'T OF HOUS. PRESERV. AND DEV., HPD DESIGN GUIDELINES FOR NEW CONSTRUCTION (2000)

<https://www1.nyc.gov/assets/hpd/downloads/pdf/developers/new-constr-guidelines.pdf>; NYC DEP'T OF HOUS.

PRESERV. AND DEV., HPD DESIGN GUIDELINES FOR MULTIFAMILY NEW CONSTRUCTION & SENIOR HOUSING (2016)

<https://www1.nyc.gov/assets/hpd/downloads/pdf/HPD-Design-Guidelines.pdf>.

⁶⁸ NYC DEP'T OF HOUS. PRESERV. AND DEV., HPD DESIGN GUIDELINES FOR MULTIFAMILY NEW CONSTRUCTION AND SENIOR HOUSING (2016) <https://www1.nyc.gov/assets/hpd/downloads/pdf/HPD-Design-Guidelines.pdf>; 28 RCNY § 6-08(g).

⁶⁹ NYC DEP'T OF HOUS. PRESERV. AND DEV., EXTREMELY LOW & LOW-INCOME AFFORDABILITY (ELLA) PROGRAM TERM SHEET (2017) <https://www1.nyc.gov/assets/hpd/downloads/pdf/developers/term-sheets/ELLA-Term-Sheet.pdf>; NYC DEP'T OF HOUS. PRESERV. AND DEV., MIXED INCOME PROGRAM: MIX & MATCH TERM SHEET (2017) <http://www1.nyc.gov/assets/hpd/downloads/pdf/developers/term-sheets/mixed-income-mix-match-term-sheet.pdf>.

⁷⁰ N.Y. STATE HOMES AND CMTY. RENEWAL, DESIGN HANDBOOK (2016)

<http://www.nyshcr.org/Publications/DesignHandbook/DesignHandbook2016.pdf>.

⁷¹ NYCHA and HPD's Housing Choice Voucher (HCV) and Veterans Affairs Supportive Housing (VASH)

leasing in housing types with shared facilities in its Statewide HCV Program, unless for the purpose of providing reasonable accommodation for people with disabilities.⁷² The rules for these rental assistance subsidies do not appear to have any limitations that relate to use of the subsidy for a micro unit.⁷³

In summary, while some existing subsidy programs can be used to create small units, many subsidies that support the construction of housing in New York City are largely geared either directly or indirectly towards creation of larger units.

ii. Private lenders may still be wary of financing small units.

Another factor related to the feasibility and cost of constructing new small units is the availability of traditional (not subsidized) financing. There may be less resistance in the private market to financing smaller units than there used to be,⁷⁴ but our conversations with developers and bankers revealed continuing skepticism about the model. Some traditional lenders told us that there may be particular concern about financing units with shared facilities because they are still perceived as a risky housing model given the history of SROs and the greater risks of having more people within a given amount of space. The demand for such housing is not as well tested as that for micro units, and the operational challenges and costs are hard to estimate. For instance, practitioners are unsure about how to plan for higher costs due to increased wear and tear from a higher density of people. Additionally, the norm in rental housing construction is to offer a mix of unit types—studios, one-bedrooms, and two-bedroom units—because a mix of units will enable an owner to weather fluctuations in demand for each kind of unit type more easily. With a single type of unit in a building, especially small units for which there is less of a proven market, projects are perceived as riskier. Therefore, a building that mixes unit sizes, but includes some micro units may be seen as a safer investment than a building of all small units.

IV. Recommendations

programs, along with the city's Living in Communities (LINC) Rent Program and SEPS Rent Supplement Program, permit leasing in SROs. New York City Housing Authority Housing Choice Voucher Administration Plan, Approved September 28, 2016. *See* Section XIII(B). Retrieved from <http://www1.nyc.gov/assets/nycha/downloads/pdf/nycha-2016-hcv-administrative-plan.pdf>; NYC DEP'T OF HOUS. PRESERV. AND DEV., HOUSING CHOICE VOUCHER PROGRAM ADMINISTRATIVE PLAN 11.1.1 (2017) <https://www1.nyc.gov/assets/hpd/downloads/pdf/administrative-plan.pdf>; Rules of the City of New York, Title 68, § 7-09; The SEPS Rent Supplement Program Fact Sheet, <https://www1.nyc.gov/assets/dhs/downloads/pdf/SEPS/SEPS-fact-sheet.pdf>. The payment rate standard for an SRO under the HCV program is 75 percent of the payment standard for a studio apartment. For HCVs administered by NYCHA, this equates to a payment standard of \$1095/month for an SRO unit. N.Y.C. HOUS. AUTH., VOUCHER PAYMENT STANDARDS AND UTILITY STANDARDS (2017) <https://www1.nyc.gov/site/nycha/section-8/voucher-payment-standards-vps-utility-allowance-schedule.page>.

⁷² N.Y. STATE HOMES AND CMTY. RENEWAL, STATEWIDE SECTION 8 VOUCHER PROGRAM, HOUSING CHOICE VOUCHER ADMINISTRATIVE PLAN EFFECTIVE APRIL 1, 2015 § 10.08 (2015) <http://www.nyshcr.org/Publications/Section8AdminPlan>.

⁷³ At the same time, project-based vouchers might trigger the requirements of Davis-Bacon, which might significantly increase development costs. Davis-Bacon refers to the federal law requiring the payment of local prevailing wages on certain public works supported by the federal government. *See* 42 U.S.C.A. § 1437j.

⁷⁴ *See* earlier Furman Center work documenting lender concern about the long-term viability of the model. Vicki Been, Benjamin Gross & John Infranca, NYU Furman Center, *Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units* (Working Paper, 2014), http://furmancenter.org/files/NYUFurmanCenter_RespondingtoChangingHouseholds_2014_1.pdf.

Review of the regulatory landscape governing small units reveals that these unit types can be created in the city today except in some circumstances. For-profit entities are prohibited from creating efficiency units with shared kitchens and/or baths without substantial government assistance; and there is a limit on the number of self-contained micro units that can be placed on a zoning lot. Otherwise, while the units are permissible, various regulations drive up the costs of productions. There are reforms that the city might consider involving these rules, among others, if it wants to permit or encourage the production of small units. We discuss those reforms in this final section, and summarize the barriers, recommendations, and processes involved in implementing them in Table 9 at the end of the section.

a. Recommendation #1: Eliminate the Density Factor Regulation in the Zoning Regulation in Higher-Density Areas near Transit Hubs.

As discussed above in Section III.b, the density factor in the Zoning Resolution is the largest existing impediment to creation of micro units. The density factor limits how many units can be created out of a given amount of residential floor area on a lot. As we show in Table 6, it is possible to design a building with micro units that meets the density factor regulation, but the regulation makes it hard to include micro units as a large share of a building's units and still use a most of the available floor area.

If the city were interested in permitting the construction of more micro units, it could eliminate this requirement. Currently, the city has exempted other housing types from this requirement: affordable independent residences for seniors (AIRS) and supportive housing are not subject to the density factor.⁷⁵ There are other legal protections that ensure that living spaces do not become inhumanely small.⁷⁶ Pursuant to rules that apply to all apartments, every habitable room must be at least 80 square feet, except for bathrooms and kitchens.⁷⁷ In addition, each person occupying an apartment must have a livable area of not less than 80 square feet.⁷⁸ In class A apartments, which would encompass our micro units,⁷⁹ one living room⁸⁰ must contain at least 150 square feet, if constructed after 1955.⁸¹ Rooms must also be at least 8 feet high from floor to ceiling and living rooms must have a width of at least 8 feet.⁸²

Another justification for the density factor might be concern about overcrowding the neighborhood.

⁷⁵ N.Y.C. ZONING RES. § 23-22 (“For #affordable independent residences for seniors,# there shall be no applicable #dwelling unit# factor.”). Supportive housing is built under zoning Use Group 3, to which the dwelling unit factor does not apply. *See supra* text accompanying note 42.

⁷⁶ *See* Mark Ginsberg & J. Russell Beaumont, *Small Is Beautiful: Micro-Units Can Help Make NYC Housing Affordable*, 1 URBAN POLICY FRONTIERS 13 (2017).

⁷⁷ N.Y.C. BLDG. CODE § 1208(3)(1) (2014); N.Y. MULT. DWELL. L. § 31(2)(b).

⁷⁸ HOUSING MAINTENANCE CODE § 27-2075(1).

⁷⁹ A class A dwelling is a multiple dwelling occupied for permanent residency, defined as 30 or more days. N.Y. MULT. DWELL. L. § 4(8)(a); HOUSING MAINTENANCE CODE § 27-2004(a)(8)(a). Apartments are defined to contain both sanitation and cooking facilities. N.Y. MULT. DWELL. L. § 4(15); HOUSING MAINTENANCE CODE § 27-2004(14); N.Y.C. BLDG. CODE § 310(2) (2014).

⁸⁰ Living space generally excludes kitchens, bathrooms, and hallways. *See* HOUSING MAINTENANCE CODE §§ 27-2004(a)(21) & 27-2004(a)(25); N.Y. MULT. DWELL. L. § 4(18).

⁸¹ Housing Maintenance Code § 27-2074. The Multiple Dwelling Law has a less restrictive minimum of 132 square feet for all buildings constructed after 1929. N.Y. MULT. DWELL. L. § 31(2)(a).

⁸² N.Y.C. BLDG. CODE § 1208(1); N.Y. MULT. DWELL. L. §§ 31(2)(c), 31(2)(d).

However, smaller units will not necessarily result in more people in a given space. For example, the same apartment that could house three roommates might instead be built as three individual micro units. Of course, it is hard to ensure that units will never become overcrowded in the future. Because neighborhoods may fear that these units will lead to higher density, it might make sense to relax or eliminate the density factor in areas of the city that are already relatively dense, which may be able to better absorb any resulting increase in population density. Moreover, permitting more micro units in relatively denser areas of the city may make the most sense for the people living in the units, so that they have access to transit and robust commercial corridors.

b. Recommendation #2: Amend the N.Y.C. Zoning Resolution to Facilitate Construction of Affordable Efficiency Units with Shared Facilities.

An efficiency unit with a shared bathroom and/or kitchen used as *permanent housing* (with tenancy of more than 30 days) cannot currently qualify as an “affordable housing unit” under the Zoning Resolution Section 23-911. Consequently, these units cannot count as affordable floor area for purposes of the Voluntary Inclusionary Housing Program (VIH) and the Mandatory Inclusionary Housing Program (MIH). Notably, the same housing design used for *temporary housing* (tenancy for less than 30 days) *can* be used to meet the affordable housing requirement for inclusionary housing. If the city is willing to permit short-term shared units to be created pursuant to its inclusionary housing programs, there seems little reason to prohibit the same units used as permanent housing. To remedy this problem, subsection (b) of the definition of “affordable housing unit” in Section 23-911 could be amended to reference “class A or class B occupancy” (i.e., permanent and temporary occupancy) instead of the existing “class B occupancy.”

Given that efficiency units can be built today under carefully proscribed circumstances, to limit their feasibility via this zoning provisions seems to run counter to the city’s interest in facilitating the creation of more long-term housing solutions for low-income residents.

In addition, as explained in Section III.c above, there is some inconsistent language in the Zoning Resolution about whether parking requirements apply to rooming units (units with shared kitchens and/or baths). If the city intended to remove rooming units from the housing types subject to parking requirements, as the 2016 amendment to Section 25-21 suggests, it should also amend Section 25-23 to make that clear and consistent in the law. If parking were to apply to these units, it would have a substantial effect on the financial feasibility of the model.

c. Recommendation #3: Support an Affordable Small Unit Demonstration Project.

To address concerns that the market won’t support small units or that they will be too difficult to manage well, the city should actively support two demonstration projects that house these unit types. The goal of the demonstrations would be to establish (a) how the construction cost of small units actually compares to the per unit cost of traditional studios, (b) how the operating costs compare, (c) whether there is a market for small units among households with a range of incomes, and (d) best practices for property management.

We suggest two separate demonstrations. One building would contain only efficiency units with shared bathroom and kitchen facilities and serve a range of low and moderate income households. The other building would include a mix of small units of all our types and would also serve a range of incomes.⁸³ In addition to a property tax exemption, it is likely that the city would also need to provide some additional subsidy to the projects, given the challenge that these buildings might face in obtaining traditional financing and possibly to entice developers to participate.

While we do not take a position on the percentage of units that should be affordable to low- or moderate-income households, a range of incomes should be targeted to properly assess demand from differing segments of the market and to identify whether there are different management issues that arise with single tenants of differing levels of income. Further, the city may want to consider permitting some units to be market-rate in the building in order to ascertain possible market-rate demand for small units in the same building as units serving extremely low-income and very low-income households.

If the new units with shared facilities are built within the Manhattan Core or portions of Long Island City, no parking will be required, but if the site is built in the Transit Zone (identified in the Zoning Resolution), parking will be required under existing law for units with shared bathrooms and/or kitchens (see footnote 68 above). If the units were built on government land, the city could also choose to override this zoning requirement.

d. Recommendation #4: Create a Small Unit New Construction Program.

If the demonstration project is successful, HPD should create a Small Unit New Construction Program, which would be designed to work in tandem with the 421-a, 420-c, and Article XI tax exemption programs. This program would offer capital subsidy in order to support the construction of small units for low-income tenants and would require that the owner subject herself to heightened inspection standards (from HPD or a third party) to ensure that the buildings are well maintained and operated. Capital subsidy can be set on a case-by-case basis depending on the neighborhood (and cost of site acquisition) and the desired affordability levels.

Participation in this program would likely permit both not-for-profit and for-profit developers to build efficiencies with shared facilities under the Housing Maintenance Code because such development will have been “created with the substantial assistance of loans, grants or subsidies from any federal, state or local agency or instrumentality,” even though what qualifies as “substantial assistance” is not explicitly defined. In addition, the creation of small units pursuant to an HPD program may permit HPD to waive the bedroom size and unit-size requirements of Voluntary IH, and MIH. As noted above, HPD may waive those requirements where a development project is participating in a local program that has conflicting

⁸³ The project containing micro units may need to be built on public land with a mayoral override of the density factor (like the one Carmel Place received). *Carmel Place, a development of micro units in Manhattan, receive multiple mayoral overrides of zoning, including relaxation of the density factor.* nArchitects, Carmel Place (Kips Bay Manhattan), <http://narchitects.com/work/carmel-place>. However, if the demonstration project were part of a building that also contained larger units, a zoning override might not be necessary. Incorporating larger units into the buildings may also help address the unit-size and unit-parity requirements associated with many subsidy programs, discussed above.

requirements.⁸⁴ The city should also consider solutions to the conflict with the 421-a minimum size requirements by exploring the language in that statute that states that minimum size requirements apply unless “preempted by the requirements of a . . . local housing program.”⁸⁵

As part of the program, HPD should explore how it can support strong property management for small unit housing, and how building and unit design, staffing, and management practices affect conflict among tenants in shared spaces. We have heard from operators that there is a wide range of experiences with how much conflict can arise. Design elements may either exacerbate or limit potential conflict (e.g., each tenant has a private fridge in units sharing a kitchen). Similarly, different management practices should be tested to evaluate their efficacy in preventing and managing conflict. Additionally, there may be opportunities for peer support that HPD can facilitate, as it does now when non-profits contract to assist for-profits with leasing and monitoring compliance in affordable units.

e. Recommendation #5: Consider Amending the Housing Maintenance Code to Permit the Creation of 80/20 and Market-Rate Efficiency Units.

Currently, only non-profit developers or developers using substantial assistance from the government can build new efficiency units with shared facilities (see Section III.a above). As a result, a market-rate version of this housing type with a for-profit owner is not permitted in New York City. And, depending upon how “substantial assistance” (currently undefined) might be interpreted, tax incentives or mixed-income buildings may not qualify. Given both the overwhelming demand for housing in New York City and the large number of single-person households living in the city, the city should revisit whether this restriction is necessary. If the city is concerned about private-sector management of small units, there may be mechanisms that can be put in place to adequately monitor them. For example, even now the law requires Commissioner approval for development when there is a non-profit or substantial assistance involved. A revised law could permit for-profit developers to build market-rate efficiency units only with Commissioner approval, and where a detailed plan is presented and approved for management and maintenance of the shared spaces in the building, including the capacity to address disputes that arise between tenants. The city could also conduct regular inspections of all efficiency units to ensure that they are being appropriately maintained. Of course, this would require additional code enforcement resources. At minimum, the city should clarify publicly how it defines “substantial assistance” in this context, so that developers interested in this housing type can determine what subsidies qualify them to build under that existing provision of the law.

Table 9: Summary of Small Unit Barriers & Recommendations

Barrier	Recommendation	Actor and Process
The Zoning Resolution’s density factor regulation limits the number of “dwelling units” (or micro units) that can be housed on a lot. ⁸⁶	Reduce or eliminate the density factor requirement in higher density, transit-rich areas by amending the zoning map and text.	Zoning Resolution map and text amendments require ULURP review and approvals, including approval of the City Planning Commission, City

⁸⁴ See N.Y.C. ZONING RES. § 23-96(c), (d).

⁸⁵ See N.Y. REAL PROP. TAX L. § 421-a (16)(g)(ii) (2017).

⁸⁶ N.Y.C. ZONING RES. § 23-22.

		Council, and the mayor or 2/3rds of the City Council. ⁸⁷
The Housing Maintenance Code (HMC) limits who can build new “rooming units” (or efficiency units). ⁸⁸	Amend HMC § 27-2077 to permit market-rate and mixed-income efficiency units with government oversight.	HMC amendments require New York City Council approval ⁸⁹ and approval by the mayor or 2/3rds of the Council ⁹⁰ .
In the city’s inclusionary housing programs , efficiency units with shared facilities cannot be counted towards the affordable unit requirement, while temporary housing of this sort can be.	Amend subsection (b) of the definition of “affordable housing unit” in Section 23-911 of the Zoning Resolution to reference “class A or class B occupancy” instead of only “class B occupancy.”	A Zoning Resolution text amendment requires approval of the City Planning Commission, City Council, and the mayor or 2/3rds of the City Council. ⁹¹
Some lenders are wary of lending for small units because the model is untested.	Support two demonstration projects to tests the viability of the small unit model: one with efficiency units with shared facilities, and one with a mix of small unit types. Both projects would serve a range of incomes.	HPD would facilitate and monitor the demonstration projects.
Many existing subsidy programs (e.g., 421-a and the inclusionary housing programs), HPD design guidelines , and many HPD program rules encourage creation of larger units.	Create a new capital subsidy program that establishes parameters for the creation of new small units, both with and without shared facilities. These units would be subject to a newly created set of guidelines addressing this housing type.	HPD would create and manage the program.
The Zoning Resolution is unclear about whether parking requirements apply to rooming units, despite an amendment in 2016 that appeared to remove this requirement in one relevant section.	Amend Section 25-23 of the Zoning Resolution to clarify that rooming units are not subject to parking requirements, making this section consistent with recently amended Section 25-21.	A Zoning Resolution text amendment requires approval of the City Planning Commission, City Council, and the mayor or 2/3rds of the City Council. ⁹²

Conclusion

Small units may be a promising way to provide lower cost housing for New Yorkers. Without any public subsidy apart from an exemption from property taxes, we estimate that developers can build and operate small units at rents affordable to low-income or moderate-income households, depending on land costs. And, with additional government subsidy, these units can be made affordable to lower-income households

⁸⁷ N.Y.C. CHARTER § 197-b.
⁸⁸ HOUSING MAINTENANCE CODE § 27-2077.
⁸⁹ N.Y.C. CHARTER § 28.
⁹⁰ N.Y.C. CHARTER § 37.
⁹¹ N.Y.C. CHARTER § 200.
⁹² *Id.*

and in a wider set of neighborhoods. Moreover, including small units in a building in order to house more people within a given space will help to meet the city's overall need for more housing units. At the same time, there are significant regulatory impediments to building small units, particularly the limitation on the construction of new efficiency units with shared facilities; the restriction on the number of micro units per lot; and the parking requirements that apply to efficiencies with shared facilities. The unit-size parity requirements found in some housing subsidy programs also provide a disincentive to include small units in mixed-income buildings. If the city were interested in encouraging the development of more small units, there are both regulatory changes it could implement and ways it could target its subsidy dollars to achieve this goal.

New York City took a major step toward facilitating the creation of smaller units in 2016 by eliminating the 400 square foot dwelling unit minimum in its Zoning Resolution. At the same time, regulations such as the dwelling unit factor still impede the production of smaller affordable units on a large scale. Given the demand for housing in New York City from rent-burdened single adults, adults living with roommates, and the single adult shelter population, the city should re-evaluate whether its regulations that impede the creation of small units are consistent with its objectives to increase the supply of housing available to a variety of low-income New Yorkers. At the same time, the city should proceed cautiously in supporting the creation of new small-unit housing to avoid the problems SROs had in the past. But if small units can be adequately regulated and monitored, they could result in both more units and cheaper units for single adults.

Appendix A: Modeling Assumptions

While the assumptions used in the building and financial modeling are intended to each be reasonable, we do not suggest that the figures chosen are necessarily ones that any particular developer has used or will use.

Building Size and Configuration

In this report, we seek to illustrate some potential benefits and costs of developing smaller units by using a hypothetical mid-rise rental building. We assume a project site of 15,000 square feet and a permitted floor area ratio of 4.0 due to an R7A zoning district. Our modeling assumes that developers have an effective six percent zoning density bonus by building under the “quality housing” formula available in many zoning districts in New York City, so 1,000 square feet of nominal zoning density permits 1,060 square feet of above-ground floor area.⁹³ We have an additional 3,500 square feet of mechanical space below grade. Of the 67,100 gross square feet in the building (including the below grade space), we apply a 25 percent loss factor to the building with studios apartment, a 27 percent loss factor to our micro unit building, a 28 percent loss factor to our building with efficiency units and shared kitchens, and a 30 percent loss factor to our building with efficiency units with shared kitchens and baths..

Because every dwelling unit requires a window,⁹⁴ there may be practical difficulties in creating a building of entirely small units on certain sites. While this could be a limitation in some instances, smaller units could still be one component of a building with a mix of other unit types. Additionally, the higher density of people within a building may result in the need for one or more additional elevators, which we have not modeled into the loss factor, construction costs, or operating costs of the building.

Our models allocate the following amount of space for each unit type:

⁹³ For purposes of the Quality Housing section of the New York City Zoning Resolution, “rooming units” as defined in the Housing Maintenance Code may be treated as “dwelling units” so long as a development is a philanthropic or non-profit institution with sleeping accommodations or long-term care facility. *See* N.Y.C. ZONING RES. § 28-02. Therefore, a for-profit developer of housing with shared kitchen and/or baths who does not partner with a non-profit would be unlikely to qualify for the effective Quality Housing bonus.

⁹⁴ N.Y. MULT. DWELL. L. §§ 30(2), 33(3)(c), 76(1)(j).

Unit Type	Rentable Square Feet Per Unit	Square Feet of Shared Bathroom Space Per Unit	Square Feet of Shared Kitchen Space Per Unit	Space for Manager's Unit
Mid-rise with standard mix of studios, one-bedroom units, and two-bedroom units	719 (average)	-	-	
Mid-rise with 400 sq ft unit with private bathroom and kitchen	400	-	-	
Mid-rise with 300 sq ft unit with private bathroom and kitchenette	300	-	-	
Mid-rise with 225 sq ft unit with private bathroom and shared kitchen	225	-	13.3*	800
Mid-rise with 160 sq ft unit with shared bathroom and shared kitchen	160	10.8**	13.3*	800

*Under the New York City Housing Maintenance Code, the smallest size for a kitchen (as opposed to a kitchenette) is 80 square feet.⁹⁵ We assume that each kitchen will be shared by six tenants.

**We assume there will be one bathroom for every six rooms and that each bathroom will be 65 square feet.

For a micro unit, we estimate 300 square feet of in-unit space, which includes a 65 square foot bathroom, a 75 square foot kitchenette, and a living room/sleeping area/dining area (LR/SA/DA) reduced from the 200 square foot standard (HPD Design Guidelines) to 160 square feet. We assume 160 square feet because this amount of space could sleep two people and meet the Housing Maintenance Code requirement that each person needs 80 square feet of living area.⁹⁶

We assume 800 square feet of space for a manager's apartment on-site, which is required for units with shared facilities (our two smallest unit types).

For an efficiency unit with a bathroom inside of the unit, we estimate a 225 square foot space, which includes a 65 square foot bathroom and a LR/SA/DA reduced from the 200 square foot standard (HPD Design Guidelines) to 160 square feet.

For an efficiency unit with a shared bathroom and kitchen, we estimate a 160 square foot space, which consists entirely of a 160 square foot LR/SA/DA.

⁹⁵ HOUSING MAINTENANCE CODE §27-2004 (a)(25).

⁹⁶ HOUSING MAINTENANCE CODE § 27-2075(1).

Construction Costs

We do not have exact numbers of how construction costs vary by unit type, therefore, we have estimated how each unit type might increase or decrease in cost compared to a building of standard units. We assume that construction of a mid-rise building with a standard mix of studios, one-bedroom units, and two-bedroom units would cost \$300 in hard costs per gross square foot. Discussions with industry experts made clear that hard costs per square foot would vary depending on the amount of piping and fixtures in a building tied to additional bathrooms and kitchens/kitchenettes. From one developer, we heard that a 100 percent increase in the number of bathrooms and kitchens/kitchenettes in a building could result in a 10 percent increase in hard costs. From another industry participant, we heard that a 25 percent increase in the number of bathrooms and kitchens/kitchenettes might result in as much as a 15 percent increase in hard costs. While there is no one right approach, our model assumes that a 100 percent increase in the number of bathrooms corresponds to a 15 percent increase in hard costs.

We begin by assuming that the \$300 in hard costs applies to a hypothetical mid-rise development with a standard mix of studios (25 units at 520 square feet), one-bedroom (33 units at an average of 720 square feet), and two-bedrooms (15 units at 1,050 square feet). With this standard mix, we estimate there would be piping and fixtures for 88 bathrooms among the 73 units (due to two bathrooms for each two-bedroom unit). To arrive at cost estimates for buildings with smaller units, we vary the hard costs to correspond to increases or decreases in the number of bathrooms in the building. For instance, because our hypothetical mid-rise development with shared bathroom and kitchen facilities would have 48 bathrooms (instead of the 88 in the mid-rise with a standard mix of units), we decrease the per square foot hard cost estimate by 4.5 percent.

Our model therefore uses the following hard costs depending on the unit type:

Unit Type	Hard Costs per gross square foot
Mid-rise with standard mix of studios, one-bedroom units, and two-bedroom units with average unit size of 719 sq ft	\$300
Mid-rise with 400 sq ft unit with private bathroom and kitchen	\$323
Mid -rise with 300 sq ft unit with private bathroom and kitchenette	\$344
Mid -rise with 225 sq ft unit with private bathroom and shared kitchen	\$365
Mid -rise with 160 sq ft unit with shared bathroom and kitchen	\$279

Soft costs include design and engineering costs and construction period property taxes, among other

costs. We derive the estimated soft cost per gross square foot of development by multiplying the hard costs by 25 percent.

Operating and Management Costs

For a 69-unit mid-rise building with studios, one-bedroom units, and two-bedroom units and an average unit size of 719 square feet, we assumed operating costs (excluding management fee) of \$7,000 per year per unit which translates to a building-level annual operating cost of \$483,000. While some costs are fixed per building and would not increase as a result of subdividing the same amount of floor area into more units, other costs would rise as the number of units in a building increased. The New York City Housing Development Corporation Maintenance and Operating Expense Standards⁹⁷ shows the following cost increases for a building as each new residential unit is added: \$150 for legal, \$600 for fire and liability insurance, \$650 for repairs/replacement.

The Expense Standards list just over \$1,200 per year for super and maintenance salaries. We add \$1,200 per incremental unit for the small studio building (126 minus 69 units) and the micro unit building (164 minus 69).

The cost of in-unit maintenance for efficiency units may be less than for micro units. For both of our efficiency unit types, there will be no staffing costs tied to kitchen maintenance within a unit because units do not contain kitchens. Further, efficiency units with shared bathrooms will not require staffing to handle in-unit bathroom issues. However, buildings that house efficiency units will have costs associated with maintaining shared facilities and additional common space. Plus, there is a legal requirement that the building owner arrange for efficiency units (or units used for single room occupancy) to be cleaned weekly (see Section IV of Appendix C). We, therefore, add \$900 per incremental unit for each efficiency unit with a shared kitchen (203 minus 69) and \$600 per incremental unit for each efficiency unit with a shared bathroom and kitchen (263 minus 69). We assume that kitchens and bathrooms will each be cleaned once a day for 15 minutes each and that labor costs will be \$20 per hour.

Based on the assumptions above, we arrive at the following operating costs:

	Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
# Units	126	164	203	263
Total Annual Operating Costs/Building	\$631,200	\$730,000	\$852,950	\$1,030,990
Base Building Cost	\$483,000	\$483,000	\$483,000	\$483,000
Incremental Legal, Insurance, Repair Costs	\$79,800	\$133,000	\$187,600	\$271,600
Incremental Bldg Maintenance Costs	\$68,400	\$114,000	\$120,600	\$116,400
Incremental Cost of Cleaning Shared Kitchens	\$0	\$0	\$61,750	\$80,000
Incremental Cost of Cleaning Shared Bathrooms	\$0	\$0	\$0	\$80,000
Total Annual Operating Costs/Unit	\$5,010	\$4,450	\$4,200	\$3,920

We assume management fees equal to five percent of effective gross revenue. We also assume annual capital reserve contributions of \$300 per unit, but these costs are considered capital expenses rather than operating expenses.

⁹⁷NYC DEP'T OF HOUS. PRESERV. AND DEV., NEW CONSTRUCTION—MAINTENANCE AND OPERATING EXPENSE STANDARDS (2016). <http://www.nychdc.com/content/pdf/Developers/HDC%20New%20Construction%20Expense%20Standards.pdf>.

Property Taxes

For purposes of demonstrating the potential depth of affordability, we assume in our model that each property will receive a full exemption from property taxes similar to what is available under the 420-c and the Article XI tax exemption programs. Even though the 420c program is as-of-right, the level of exemption is discretionary. Similarly, the Article XI tax exemption can be for a full exemption or for a lesser amount.

Building Revenue

In 2017, 100 percent of Area Median Income (AMI) for a single-person household in New York City was equal to \$66,800. Percentages of AMI throughout the report refer to this level. Affordable rent for a given AMI level is calculated by dividing annual income into 12 months and then multiplying the monthly income by 0.3. Rents are reflected as of year zero and are expected to increase by three percent per year in our model. Therefore, the rents used to calculate the Net Operating Income in year four would reflect an upward adjustment from the rents in year zero.

Financial Performance

Target NOI yield:

NOI yield is equal to the net operating income generated in year four divided by the total amount spent on land (for full-building models), hard and soft construction costs, and capital reserves set-aside in years three and four. We assume developers will need to earn the target NOI of between 5.25% and 6.25% depending on the market type and the unit type (i.e., dwelling unit vs. rooming units). The NOI yields we arrive at reflect an amount 125 basis points above the year-12 exit cap rate for a fully leased up rental project. Based on conversation with industry experts, we estimate that cap rates (and therefore target NOI yield) might be 50 basis points higher because of the potential uncertainty tied to the development and operation of a building of SROs (with or without shared bathrooms). After discussions with industry participants, we arrived at the following target NOI yields:

Site Acquisition Costs and Market Type	Micro Unit	Efficiency Unit with Shared Facilities
\$0 [Publicly Owned/Developer Already Owns Site]	5.75%	6.25%
\$50 [East New York and North Bronx] ⁹⁸	5.75%	6.25%
\$200/ permitted square foot [East Harlem] ⁹⁹	5.25%	5.75%
\$450 [East Village, Midtown East] ¹⁰⁰	5.25%	5.75%

Full Building NOI Yield:

We assume land is purchased at the end of year zero, construction occurs during years one, two, and three (with construction costs incurred 20% in year one; 60% in year two, and 20% in year three); and lease-up begins in year three, resulting in full occupancy (subject to a 4.5% economic vacancy rate for income-restricted units) in year four.

Land Values

In the report, we show a variety of scenarios with varying site acquisition costs (see Table 3). When we refer to a site acquisition cost, we mean the price paid for a permitted square foot of residential floor area under the New York City Zoning Resolution.

⁹⁸ From January 1, 2016 through June 26, 2017, averages were the following: Brooklyn CD 5 at \$69/buildable square foot, Bronx CD 7 at \$53/buildable square foot, Bronx CD 11 at \$49/buildable square foot, and Bronx CD 12 at \$53/buildable square foot. Ariel Property Advisors. (On file with authors.)

⁹⁹ From January 1, 2016 through June 26, 2017, averages were the following: Manhattan CD 11 at \$201/buildable square foot. Ariel Property Advisors. (On file with authors.)

¹⁰⁰ From January 1, 2016 through June 26, 2017, averages were the following: Manhattan CD 3 at \$467 / buildable square foot and Manhattan CD 6 at \$445 / buildable square foot. Ariel Property Advisors. (On file with authors.)

Appendix B: Estimated Subsidy Needed to Create Small Units for Very Low-Income Households

In Section II.b above, we report our estimates of the rent levels needed to support the construction and operation of new small units (assuming a property tax exemption) and the household income needed to afford those rents. As we show, in the lowest cost scenario (with no land costs), new construction could be supported with rents affordable to a household earning 51 percent of Area Median Income (see Table 3). In order to serve lower-income households, in addition to seeking a tax exemption, a developer could seek direct subsidy to lower the amount of equity or loan proceeds she would need to pay for site acquisition, hard costs, and soft costs of new construction.

Below, we report the required level of capital subsidy government would need to provide in order to allow a developer to obtain her target financial return based on unit type in a neighborhood with site acquisition costs of \$50 per developable square foot (e.g., East New York or the North Bronx). We use a neighborhood with weaker than average site acquisition cost for New York City as an illustration—government could offer subsidy for projects in neighborhoods with higher site acquisition costs as well. We solve for the required amount of government capital grant subsidy needed to permit a developer to earn a target return and offer rent affordable to a single-person household earning 30 percent of AMI with no other rental assistance (the equivalent of \$501/month or less in rent). This analysis shows that it is significantly less expensive for government to subsidize construction of smaller units than for larger units (\$74,220 for an efficiency with shared bath/kitchen vs \$232,550 for a small studio).

Estimated Per Unit Capital Subsidy Needed to Create Units Affordable to Single-Person Households Earning 30% of AMI, Assuming Land Costs of \$50 per Square Foot

Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
\$232,570	\$177,280	\$147,430	\$79,700

Another approach to ensure that smaller units can serve lower-income households is to provide ongoing tenant- or project-based rental assistance, which effectively functions as an operating subsidy. These operating subsidies can directly fill the gap between the rent a tenant can afford to pay and the rent needed by a developer to support a desired return on equity invested. Below, we report the monthly rent government would need to provide to enable a household with income at 30 percent of AMI to live in different types of units within a development with site acquisition costs of \$50 per developable square foot. In line with our earlier findings, the smaller the unit, the less subsidy required by government to serve a household with income at 30 percent of AMI.

Estimated Monthly Per-Unit Operating Subsidy Needed for Units Affordable to Single-Person Households Earning 30% of AMI, Assuming Land Costs of \$50 per Square Foot

Small Studio	Micro Unit	Efficiency w/ Shared Kitchen	Efficiency w/ Shared Kitchen/Bath
\$1,090	\$830	\$750	\$410

Appendix C: Key Design Regulations

In Section III above, we highlight some of the primary impediments that exist for the construction of small units in New York City. In this appendix, we highlight a second rung of regulations that may also pose challenges for construction of these units in some cases, by driving up costs and/or making it harder to build depending on the layout of the construction site.

I. Unit Size

While many other large cities adhere to the International Building Code's 220 square foot minimum unit size for "efficiency dwelling units," New York City currently has no such general minimum.¹⁰¹ Previously, New York City imposed a minimum unit size of 400 square feet (and that is likely the primary reason why there are not more micro units in the city).¹⁰² This limitation was removed, however, in 2016 in the Zoning for Quality and Affordability amendments for medium and higher density districts (i.e., R6 – R10 zoning districts).¹⁰³ Currently, in the city's high-density districts (R6-R10), there is no minimum unit size, except for senior affordable housing, for which there is a 325 square foot minimum. In lower density districts, there still are restrictions on unit size.¹⁰⁴ As discussed above, unit size can also be indirectly dictated by zoning regulations that set the maximum number of units per building.

New York City does have room size requirements. A single room used for single room occupancy (the efficiency units we model) must be at least 150 square feet; and when multiple rooms are used for single occupancy, one must be at least 150 square feet.¹⁰⁵ Room size minimum requirements applicable to all apartments would also limit how small micro units can be. Those requirements mandate that every habitable room must be at least 80 square feet, except for bathrooms and kitchens.¹⁰⁶ In addition, each person occupying an apartment must have a livable area of not less than 80 square feet.¹⁰⁷ In class A apartments, which would encompass micro units but not units with shared facilities,¹⁰⁸ one living room¹⁰⁹

¹⁰¹ For example, Washington DC, Austin, and Berkeley follow the International Building Code in setting minimum sizes. Vicki Been, Benjamin Gross & John Infranca, NYU Furman Center, *Responding to Changing Households: Regulatory Challenges for Micro-Units and Accessory Dwelling Units* (Working Paper, 2014), http://furmancenter.org/files/NYUFurmanCenter_RespondingtoChangingHouseholds_2014_1.pdf.

¹⁰² N.Y.C. DEP'T OF CITY PLANNING, ZONING FOR QUALITY AND AFFORDABILITY (2016) <https://www1.nyc.gov/site/planning/plans/zqa/zoning-for-quality-and-affordability-2.page>. In 2012, when the 400 square foot minimum still existed, the city waived this requirement during their adapt NYC Competition. As part of this competition, developers submitted proposals to build the city's first micro unit housing development. The winning submission used modular design and was developed in Kips Bay as Carmel Place. N.Y.C. DEP'T OF HOUS. PRESERV. AND DEV., ADAPT NYC REQUEST FOR PROPOSALS (2012). <http://www1.nyc.gov/site/hpd/developers/adapt-nyc-rfp.page>.

¹⁰³ N.Y.C. ZONING RES. § 23-23.

¹⁰⁴ N.Y.C. ZONING RES. § 23-22.

¹⁰⁵ N.Y.C. BLDG. CODE § 1208(3)(2)(1) (2014); HOUSING MAINTENANCE CODE § 27-2074(e)(1). Note that according to N.Y. MULT. DWELL. L. § 31(2), at least one living room in an apartment must be at least 132 square feet.

¹⁰⁶ N.Y.C. BLDG. CODE § 1208(3)(1) (2014); N.Y. MULT. DWELL. L. § 31(2)(b).

¹⁰⁷ HOUSING MAINTENANCE CODE § 27-2075(1).

¹⁰⁸ A class A dwelling is a multiple dwelling occupied for permanent residency, defined as 30 or more days. N.Y. MULT. DWELL. L. § 4(8)(a); HOUSING MAINTENANCE CODE § 27-2004(a)(8)(a). Apartments are defined to contain both sanitation and cooking facilities. N.Y. MULT. DWELL. L. § 4(15); HOUSING MAINTENANCE CODE § 27-2004(14); N.Y.C. BLDG. CODE § 310(2) (2014).

¹⁰⁹ Living space generally excludes kitchens, bathrooms, and hallways. HOUSING MAINTENANCE CODE §§ 27-2004(a)(21), 27-2004(a)(25); N.Y. MULT. DWELL. L. § 4(18); N.Y.C. BLDG. CODE 1201.1 (2014).

must contain at least 150 square feet, if constructed after 1955.¹¹⁰ Rooms must be at least 8 feet high from floor to ceiling and living rooms must have a width of at least 8 feet.¹¹¹

II. Bathrooms

In a multiple dwelling with permanent residences (class A), which is the type of buildings we are contemplating, bathrooms with more than one toilet are prohibited unless supplemental to the required facilities or in non-residential areas of the building.¹¹² While developers of efficiencies with shared baths may want to build bathrooms with multiple toilets to accommodate increased use, it appears this would not be allowed if the building is designed as permanent residence.

Building with shared facilities (SROs) also have bathroom-specific rules. There must be at least one bathroom for every six occupants, and at least one bathroom per floor.¹¹³ Like the general rule noted above, in buildings with shared facilities multiple toilets cannot be located in a single bathroom, and there is also a limitation on locating additional toilets in the same room with additional baths or showers on a single floor.¹¹⁴ For efficiency units that include individual bathrooms, as long as the bathroom is connected to the sleeping room, that bathroom is considered for the individual occupant's use only. Neither that occupant nor that bathroom is counted towards the one-bathroom-per-six-residents requirement.¹¹⁵

III. Windows and Ventilation

Requirements about the number and placement of windows and the type of ventilation may be more burdensome or harder for developers with smaller units to meet (e.g., more ventilation systems throughout the building). Every room, including kitchens and bathrooms, must have at least one window opening to the outdoors, or mechanical ventilation in certain cases such as with bathrooms or kitchenettes.¹¹⁶ In addition, in buildings erected after 1929, every living room must have at least one window that opens onto a) the street, b) a lawful courtyard, c) a partially enclosed balcony or setback, or d) a completely enclosed balcony or setback if not more than one story in height.¹¹⁷

In SRO buildings specifically, all sleeping rooms must have windows that are equal to at least 10 percent of the floor area of the room, and each window must be at least 12 feet in area with at least half of its area openable.¹¹⁸ Finally, minimum window distance rules can limit the number of units that can be built in a certain building.¹¹⁹

¹¹⁰ HOUSING MAINTENANCE CODE § 27-2074. The Multiple Dwelling Law has a less restrictive minimum of 132 square feet for all buildings constructed after 1929. N.Y. MULT. DWELL. L. § 31(2)(a).

¹¹¹ N.Y.C. BLDG. CODE § 1208(1) (2014); N.Y. MULT. DWELL. L. §§ 31(2)(c), 31(2)(d).

¹¹² HOUSING MAINTENANCE CODE § 27-2063(e); N.Y. MULT. DWELL. L. § 76(1)(m).

¹¹³ HOUSING MAINTENANCE CODE §§ 27-2067(a); 27-2079; N.Y. MULT. DWELL. L. § 76(6).

¹¹⁴ HOUSING MAINTENANCE CODE § 27-2067(c).

¹¹⁵ HOUSING MAINTENANCE CODE § 27-2067(d); N.Y. MULT. DWELL. L. § 76(6)(b).

¹¹⁶ N.Y. MULT. DWELL. L. §§ 30(2), 33(3)(c), 76(1)(j).

¹¹⁷ HOUSING MAINTENANCE CODE § 27-2058(a).

¹¹⁸ N.Y. MULT. DWELL. L. § 248(11).

¹¹⁹ N.Y.C. ZONING RES. § 23-861.

IV. Other regulations specific to units with shared facilities

There are a number of maintenance and upkeep requirements specific to units with shared facilities. A landlord of a permanent residence used for single room occupancy must clean each room thoroughly prior to occupancy and ensure sleeping rooms are cleaned weekly thereafter.¹²⁰ Buildings of this type must have a manager on site who is responsible for “the conduct, operation and maintenance of the dwelling,” and there must also be a registry of occupants.¹²¹ Additionally, buildings with shared facilities with 11 or more occupants must have a laundry facility.¹²²

¹²⁰ N.Y. MULT. DWELL. L. § 248(13).

¹²¹ N.Y. MULT. DWELL. L. §§ 248(15), (17).

¹²² N.Y. MULT. DWELL. L. § 248(8)(b).

Appendix D: Acknowledgements

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