

The background of the entire cover is a stylized, line-art map of Manhattan. The map is composed of various colored lines: pink lines for the top section, blue lines for the middle section, and light blue lines for the bottom section. The lines represent the street grid and building footprints of the city.

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# RETOOLING METROPOLIS

**How Social Media, Markets, and  
Regulatory Innovation Can Make  
America's Cities More Livable**

**MANHATTAN**  
INSTITUTE



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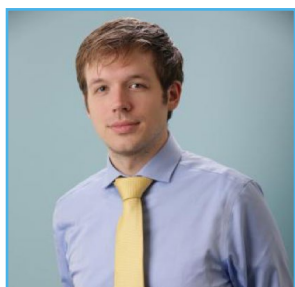
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# ABOUT THE MANHATTAN INSTITUTE

**T**he Manhattan Institute for Policy Research develops and disseminates new ideas that foster greater economic choice and individual responsibility. Since 1977, the institute has helped change the United States and its cities for the better: welfare reform, tort reform, proactive policing, and supply-side tax policies are at the heart of MI's legacy.

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Armlovich's work has appeared in a variety of publications, including the New York Daily News, New York Post, U.S. News & World Report, Washington Examiner, and City Journal (co-authored with Judith Miller). He previously worked as an intern in the offices of Senator Charles Schumer (D-NY) and the U.K. Parliament's Labour Party deputy leader. Armlovich holds a B.A. in economics and political science from the University of Rochester.



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Professor Luca teaches The Online Economy, an elective course about the strategic and operational decisions faced when designing and launching an online platform. He also teaches an elective course in which student teams develop behavioral interventions and experimental designs for government and company clients, called IFC: Behavioral Insights.

Professor Luca's current work focuses on digital data and platforms, analyzing a variety of companies including Yelp, Amazon, and Airbnb. He also works on issues related to the design of information disclosure. Focusing on the behavioral foundations of how people make decisions, Luca has done work on rankings, expert reviews, online consumer reviews, and quality disclosure laws, among other types of information provision.

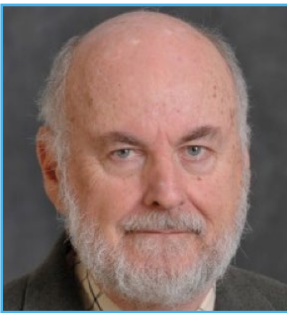
His work has been written about in a variety of media outlets including The Wall Street Journal, New York Times, Washington Post, Boston Globe, Guardian, Telegraph, Huffington Post, Harvard Business Review, Atlantic, Quartz, Vox, and Forbes.



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Renn holds a B.S. from Indiana University, where he coauthored an early social-networking platform in 1991. He has created several widely used open-source software packages, including the only program for recovering data from corrupted gzip backups. In 1998, Renn launched one of the nation's first blogs, the *Weekly Breakdown*, to cover the Chicago Transit Authority.



**Donald Shoup** is Distinguished Research Professor in the Department of Urban Planning at UCLA. His research has focused on how parking policies affect cities, the economy, and the environment. His research on employer-paid parking led to the passage of California's parking cash-out law, and to changes in the Internal Revenue Code to encourage parking cash out. In his book, *The High Cost of Free Parking*, Shoup

recommends that cities should charge fair market prices for on-street parking, use the meter revenue to finance public services in the metered neighborhoods, and remove off-street parking requirements.

Shoup is a Fellow of the American Institute of Certified Planners, an Honorary Professor at the Beijing Transportation Research Center, and the Editor of *ACCESS*. In 2015, the American Planning Association gave Shoup its highest honor, the National Excellence Award for a Planning Pioneer.





# FOREWORD

Aaron Renn

In the 1970s and 1980s, the questions of urban policy were existential—could America’s major urban centers survive at all?

Today, this question has been answered with a resounding yes in many U.S. cities, from New York to San Francisco, and Denver to Houston. Yet that very success poses new challenges to a new generation of urban leaders.

Today’s urban citizens demand effective, efficient government services. They are less tolerant of bureaucratic dysfunction. Technology is transforming the world; government is no exception. And the experiences that today’s urbanites have with technology, from the iPhone to Uber, set a high service-delivery bar that citizens expect government to meet. Meanwhile, problems of success, such as uneven economic advancement and soaring rents in many cities, pose challenges to future urban growth.

The Manhattan Institute has long been committed to staying at the forefront of urban-policy innovation. To that end, we have partnered with leading academics to commission the series of urban-innovation essays found in this volume—essays that speak directly to some of the big challenges that U.S. cities now face.

In the **first essay**, Harvard Business School’s Michael Luca discusses the innovative work that he and his team did in partnership with Yelp, a customer-review website, and the cities of San Francisco and Boston. Traditional urban-data applications have involved either making better internal use of government data or posting government data to an online portal to allow private users to take advantage of it. In Luca’s work, there is a bidirectional flow of data and more collaboration between private firms, such as Yelp, and cities.

Luca examined public-health inspection scores in San Francisco and helped get that information onto Yelp—a useful thing for the many diners who peruse it before selecting a restaurant to visit. He also discovered that reviews posted on Yelp can be used to predict which restaurants will subsequently fail health inspections. Luca worked with the city of Bos-

ton to run a contest to create an algorithm to apply that insight to Boston, which could potentially allow health inspectors to more efficiently target restaurants that are likely to have violations.

In the **second essay**, UCLA's Donald Shoup outlines better ways for cities to manage their on-street real estate. Demand for parking is growing with cities, and new technology offers new ways of managing parking. He suggests that cities should use market-based pricing for parking meters, varying the price by time of day to reflect the variation in demand for parking spaces. He outlines the concept, and then reviews the results achieved when San Francisco implemented his policy for its new *SFpark* system.

Shoup also describes how market-based pricing could be extended to residential street parking. His plan: allow neighbors to petition for a uniform price auction to allocate spaces to homeowners. The money raised would then be spent in the neighborhood itself. Rich and poor neighborhoods would both benefit through a “power-equalization system” of financial allocation.

In the **third essay**, Alex Armlovich and I address the problem of soaring housing prices in many U.S. cities. To help ease this burden, we suggest more aggressive permitting of so-called microunits—apartments that are smaller than conventional studios.

We highlight a number of the barriers to microunit construction, including minimum unit-size regulations, a lack of multiunit zoning generally, and other de facto restrictions, such as density caps. We then review the experience of microunits in Seattle and other cities, as well as the political barriers to them, including legacy opinions shaped by the history of single-room-occupancy hotels.

In the **final essay**, Jeffrey Liebman and Hanna Azemati, both at Harvard's Kennedy School, discuss ways to help cities improve their contracting. Virtually everything that cities do involves some type of contracted purchase from the private sector. In Boston alone, contract purchasing totals \$1.2 billion per year. But the contracts themselves often have not been changed in many years. Instead, they are simply rolled over as they expire. There is little high-level focus on pursuing strategic contracts, either.

Liebman and Azemati recommend that cities assign a senior member of the mayor's inner circle to be responsible for strategic management of the city's contract portfolio; and that cities explicitly define

their goals for major procurement efforts, structure the contracts correctly (such as by bundling or unbundling items) to achieve those goals, and investigate innovative types of contracting, such as problem-based procurement.

These essays address diverse topics. But they all cover themes that directly speak to the problems, as well as the opportunities, that today's city leaders face.



# RESTAURANT HYGIENE AND SOCIAL MEDIA: HOW TO IMPROVE REGULATORY DISCLOSURES IN THE DIGITAL AGE

**Michael Luca, *Harvard Business School***

## Introduction

Online review platforms have dramatically changed the way people learn about the quality of products and services. Yelp and TripAdvisor, for example, are now dominant information sources that exert considerable influence over consumer behavior. But social media has broad implications for the improvement of government regulatory policy as well. Consider that health officials now regularly assign hygiene scores to restaurants and increasingly require that the scores be publicly displayed. What role might social media play in making the results of these restaurant inspections—and other inspections—more widely known and useful? Drawing on my academic research and fieldwork, I argue that: (1) online review platforms can be useful vehicles for government regulatory disclosures; (2) the regulatory regimes that generate these disclosures can themselves be made more efficient by the user-generated content on these social media; and (3) government disclosure policies should take into consideration the information that is already readily available to customers on social media.

## I. Restaurant Hygiene: Scores on Doors

Health departments in nearly every developed country inspect restaurants to identify and reduce practices and conditions, such as storage of food at unsafe temperatures, that can lead to illness. While the worst offenders are forced to close, restaurants can fall into the “pass” category with a range of health-code violations. A central question faced by regulators is whether—and how—to inform the public about the results of their health inspections. The disclosure of such scores can help people decide where they might, and might not, eat; and it can also create incentives for restaurants to improve their food-safety practices. This mirrors the policy challenges faced in a variety of settings, ranging from food labeling to gas mileage.<sup>1</sup>

Since the late 1990s, there has been a vocal movement to require restaurants to prominently post their hygiene scores. Research by Ginger Jin and Phillip Leslie show that Los Angeles’s mandatory posting policy, passed in December 1997, led to improved hygiene scores and a 20% reduction in rates of food-borne illnesses. Based largely on their research, hygiene-score posting is frequently cited as a success, and other cities, including New York, have implemented similar requirements.<sup>2</sup>

When “scores on doors” began, there was no Facebook, Twitter, or Yelp. Today Yelp has amassed about 100 million reviews, while TripAdvisor, Chowhound, and other websites have amassed similar figures. Reviewers on these platforms don’t typically (if at all) carry clipboards or charts to eateries, but they do comment on issues that interest health inspectors. And my research indicates that consumers increasingly turn to these types of social-media platforms for guidance.<sup>3</sup>

Public reporting and inspections should draw on and interact with social media, not ignore it. Moving toward digital disclosure can potentially reduce costs and produce reports that are more in line with the way millions of people learn about products and services. Moreover, regulators and other public officials should leverage the data that already exist on social media to improve the efficiency of government operations. While this essay focuses on restaurant hygiene, the principles and methods described can be applied in a variety of settings.

## II. Regulatory Disclosure and Social Media

Although restaurant inspections differ by city, the main elements are similar. San Francisco's Retail Food Safety Program, for example, is overseen by the city's Department of Public Health (SFDPH), which administers inspections of "restaurants, markets, and all other retail food operations,"<sup>4</sup> such as bars, pushcarts, and bakeries. Unannounced inspections are used to calculate food-safety scores based on an establishment's compliance with health and safety regulations.

Each inspection results in a score from 0 to 100. Deductions from the perfect score of 100 are made for each violation, with more serious infractions receiving larger deductions. SFDPH classifies violations as high-, moderate-, or low-risk.

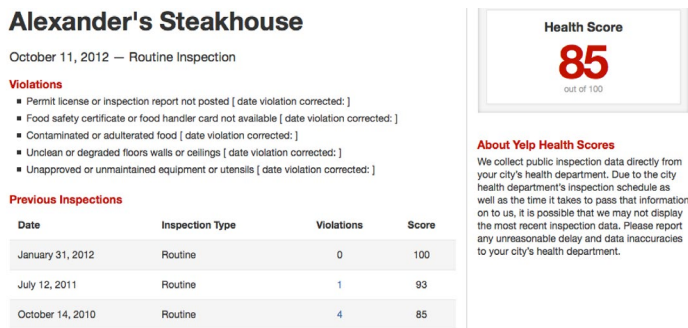
Major safety violations that endanger public health can result in a restaurant's closure, and restaurants are supposed to be inspected two or three times per year, depending on their scores. In many cities, however, lack of resources means that inspections are not as frequent. Cities could improve their inspection and disclosure policies by working with social media in three ways: as a disclosure outlet; as a means for leveraging online information; and as a tool for determining optimal disclosure practices.

### *Social media as an outlet for disclosure*

I recently collaborated on a project to incorporate the SFDPH's hygiene scores onto Yelp's website and analyze the results. For the initial posting, public-inspection results for roughly 4,000 San Francisco restaurants were matched with Yelp's records. (The results became publicly visible on March 25, 2013.) Since then, my collaborators and I have monitored and analyzed the relationship between hygiene scores and Yelp reviews. Records are now updated after each inspection and automatically posted to Yelp; after our initial matching, new restaurants are matched upon the first inspection.

When Yelp users now research a restaurant, they see reviews, ratings, and hygiene scores ("health scores"). If a user clicks on the last, she is brought to a screen, as in **Figure 1**, displaying the violations that led to the score, as well as results from previous inspections.

**Figure 1. San Francisco Department of Public Health–Provided Hygiene Scores, as Displayed on Yelp**



Source: Yelp.com. See <https://www.yelp.com/inspections/alexanders-steakhouse.-san-francisco> for the current version of its page.

The initial consumer reaction was limited, in part because scores were given little space on the main page, and a click of a button was required to see the full history. In response, we focused on San Francisco restaurants most in need of improvement (specifically, those that scored in the bottom 5%) by creating a “consumer alert” that popped up when visitors arrived at these restaurants’ Yelp pages. (For all other restaurants, no alert would appear, though the original, less prominent, hygiene-score display remained.) This modification produced roughly a 20% drop in reservations and deliveries for restaurants with the lowest scores. This suggests the importance of design for digital disclosures of government regulatory information.<sup>5</sup> Disclosure, in other words, requires more than just data dumps. Collaborations with review platforms would allow governments to make data-driven design changes to better inform the public. This can help to shift the mind-set from “Does disclosure work?” to “How should disclosure be designed?” And online platforms provide an important tool in understanding what works.

### *Leveraging online information to improve regulatory regimes*

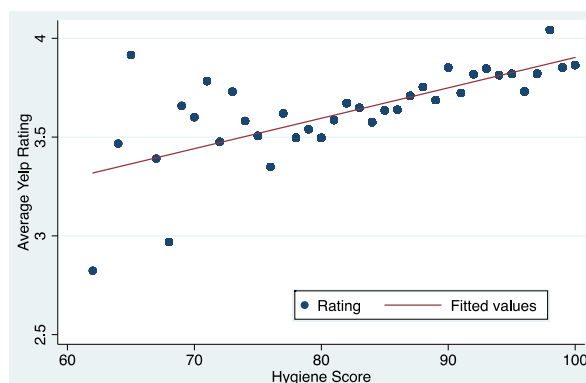
Apart from basic guidelines—such as conducting more frequent inspections at sushi restaurants (because of their raw menu offerings) than, say, burger joints—health officials typically assign inspectors in a fairly random manner. But social media can help health inspections become more efficient.



Suppose you were looking for restaurants that were causing food poisoning. What if you were to search Yelp for terms like “sick” or “dirty”? You would probably find a few culprits. But the entire history of Yelp reviews and ratings can be merged with the history of hygiene violations to create an algorithm that identifies the likelihood of finding a hygiene violation. The algorithm would “learn” from the history of past reviews and predict the likelihood of finding violations on the basis of recent reviews. Inspectors could then be reallocated to the restaurants most likely to have violations. Similar methods could be applied to inspections of other kinds of facilities, such as parks, hospitals, dentists, and so on.

A 2013 research study (which I coauthored) explored the feasibility of using natural language processing to predict hygiene violations using Yelp reviews.<sup>6</sup> **Figure 2** makes clear that Yelp scores can help predict hygiene scores. Indeed, after applying our algorithm, we were able to accurately predict—using only Yelp reviews and ratings—more than 80% of hygiene scores for San Francisco restaurants that scored in the bottom half. A 2014 study implemented a similar analysis for New York City, based on searches for terms such as “sick” and “vomit.”<sup>7</sup> These findings suggest that cities can use private, user-generated data to develop algorithms to better target inspections, reduce administrative costs, predict potential problems, and provide immediate quality-improvement efforts.

**Figure 2. Yelp Ratings Predict Hygiene Scores**



Source: Edward Glaeser et al., “Big Data and Big Cities: The Promises and Limitations of Improved Measures of Urban Life,” *Economic Inquiry* (forthcoming).

Cities have been slow to incorporate algorithms and predictive analytics into their operations, and one problem may be that their staffs lack the technical skills to do so. One solution might be to turn to consulting companies. Another might be to have cities run prediction tournaments on platforms such as Kaggle, Topcoder, or DrivenData that host data-science contests. These tournaments might allow cities to acquire the technical skills necessary to create city-specific algorithms; they might also increase the diffusion of new methods and insights.<sup>8</sup>

Last year, I and my collaborators Ed Glaeser, Andrew Hillis, and Scott Kominers partnered with Yelp, Boston (which does employ data scientists), and DrivenData to run a contest to create a city-specific algorithm. The tournament attracted more than 500 contestants, with 55 submitting at least one set of predictions. The winning algorithm positioned Boston to cut the number of restaurant inspections by 40% while identifying the same number of hygiene violations by switching to a targeted inspection process. We worked with Boston on an experiment to explore the value of using this type of algorithm for targeting health inspections. Our research found that an algorithm outperformed not only random inspections but also a list of restaurant targets created by inspectors, who have some degree of discretion about which restaurants to prioritize. Boston is now implementing an algorithm using Yelp reviews to figure out which restaurants to prioritize.

The assignment of restaurant inspections includes predicting, on the basis of past history and other factors, where health problems might occur. Effective policing involves predicting—and preventing—crime. Successful forecasting and planning involve predicting economic conditions. Fostering a thriving school district involves predicting which teachers will add the most value to a classroom. All of these are *prediction* problems. And all of these can be improved through better predictive analytics in conjunction with a more deliberate approach to data collection.

### *Using online information to determine optimal disclosure policies*

Policymakers should consider whether to increase, decrease, or maintain overall investment in public reporting. The answer relates to classic research on designing incentives in settings with multiple quality dimensions, and depends on whether the quality dimensions are substitutes or complements.<sup>9</sup>

To understand the difference, consider a public-health department that is focusing on two problems: rodents in the dining room and in the kitchen. Yelp creates an incentive for restaurants to remove rodents from the former. A restaurant might, hypothetically, respond by laying traps in the dining room, which would encourage rodents to live in the kitchen instead. In this case, the two problems are substitutes, and the increased social reporting on dining-room rodents might lead to more problems in the kitchen.

But if the rodents leave the restaurant because of dining-room traps, Yelp reporting that led to more dining-room traps would help with both problems; it would be a complement. When quality dimensions are substitutes—and there are numerous dimensions that customers cannot see or report on social media—policymakers should increase disclosure and enforcement efforts. Where quality dimensions are complements, and most areas of interest are readily observable to customers, policymakers could reduce disclosure and enforcement efforts.

## Conclusion

The principles that inform how social media may improve government regulatory regimes are not limited to restaurant inspections. They may be applicable to hospital and physician ratings, plumber and electrician licensing, landlord audits, and elsewhere. Overall, government disclosures, certifications, and inspection processes need to be updated to better reflect—and leverage—the complicated, information-rich, social media ecosystem.

## Endnotes

1. See Alan Mathios, "The Impact of Mandatory Disclosure Laws on Product Choices: An Analysis of the Salad Dressing Market," *Journal of Law and Economics* 43, no. 2 (2000): 651–77; and David Dranove and Ginger Jin, "Quality Disclosure and Certification: Theory and Practice," *Journal of Economic Literature* 48, no. 4 (2010): 935–63.
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3. See Michael Luca, "Reviews, Reputation, and Revenue: The Case of Yelp.com," Working Paper, 2011.
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5. See Weijia Dai and Michael Luca, "Digitizing Disclosure: The Case of Restaurant Hygiene Scores," Working Paper, 2016.
6. See Jun Seok Kang et al., "Where Not to Eat? Improving Public Policy by Predicting Hygiene Inspections Using Online Reviews," *Proceedings of the Conference on Empirical Methods in Natural Language Processing*, 2013.
7. Cassandra Harrison et al., "Using Online Reviews by Restaurant Patrons to Identify Unreported Cases of Foodborne Illness—New York City, 2012–2013," Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report* 63, no. 20 (May 23, 2014).
8. See Edward Glaeser et al., "Crowdsourcing City Government: Using Tournaments to Improve Inspection Accuracy," *American Economic Review* 106, no. 5 (2016): 114–18.
9. See Bengt Holmström and Paul Milgrom, "Multitask Principal-Agent Analyses: Incentives Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics and Organization* 7 (1991): 24–52; and George Baker, "Incentive Contracts and Performance Measurement," *Journal of Political Economy* 100, no. 3 (1992): 598–614.

# THE RIGHT PRICE FOR CURB PARKING

**Donald Shoup, *University of California, Los Angeles***

## Introduction

Everybody wants to park free, including me, but the only thing worse than paying for parking is having no parking at all. If curb parking is free, it is often crowded, and new arrivals have no place to park. Cities can install parking meters to avoid overcrowding, but what is the right price to charge? I will argue that the right price for curb parking is the lowest price that can produce one or two vacant parking spaces on each block. If many spaces are vacant, the price is too high. If no spaces are vacant, the price is too low. But if one or two spaces are vacant, the price is just right, and everybody will have great parking karma. Call it the Goldilocks principle.

Prices that produce one or two open curb spaces on every block will improve the city in three ways. First, and most obviously, curb parking will improve because the spaces will be well used yet readily available. Second, drivers won't have to cruise to find an open space, which means less congestion, wasted fuel, and air pollution. Third, the economy will improve because customers will park, buy something, and leave promptly—freeing up spaces for other customers.

Cruising is an especially big problem. In 2006, researchers who interviewed drivers stopped at traffic lights on Prince Street in Manhattan found that 28% were hunting for curb parking.<sup>1</sup> In a study in 2007, researchers found that cruising for underpriced parking on 15 blocks on the Upper West Side of Manhattan created about 366,000 excess vehicle miles traveled per year.<sup>2</sup>

Although the demand for curb parking can vary throughout the day, parking meters in most cities charge the same price all day. Primitive technology once made it difficult to charge prices that vary throughout the day in response to changes in demand. Parking was, for decades, the most stagnant industry outside North Korea, but it is now taking advantage of everything that Silicon Valley has to offer. The new parking technology makes better parking policies possible, and the new parking policies increase the demand for the new technology.

The real barrier to implementing the Goldilocks principle for parking is not technology but politics. I will explain how cities have all the technology necessary to charge market prices for curb parking, using San Francisco as an example. Then I will explore how cities can make market prices for curb parking politically popular.

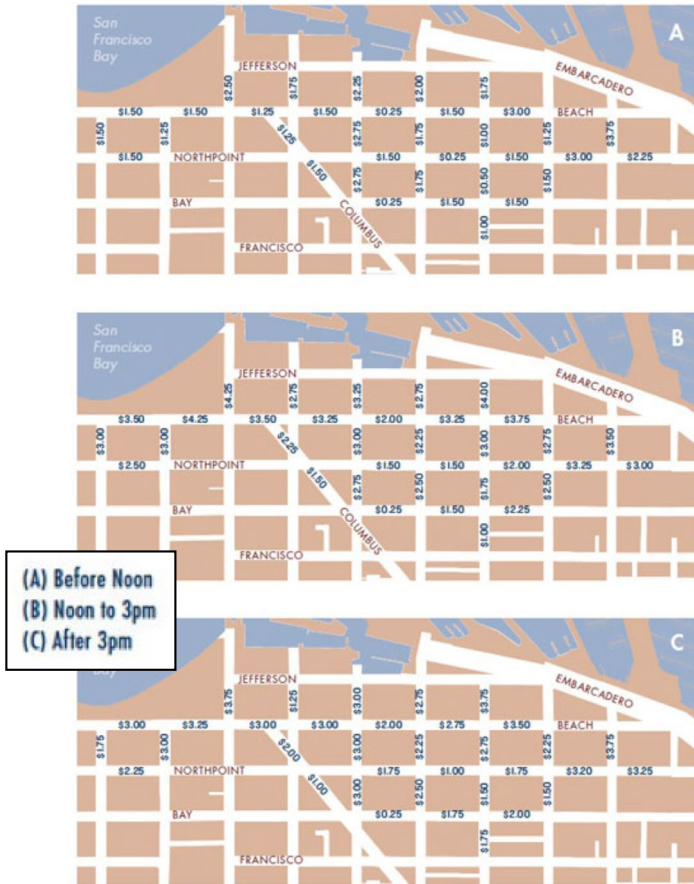
## I. The Right Prices for Curb Parking in San Francisco

In 2011, San Francisco adopted the biggest price reform for on-street parking since the invention of the parking meter in 1935: it varied the price of curb parking by both location and time of day. *SFpark* aims to solve the problems created by charging too much or too little. If the price is too high and many curb spaces remain vacant, nearby stores lose customers, employees lose jobs, and governments lose tax revenue. If the price is too low and no spaces are vacant, drivers who cruise to find an open space waste time and fuel, congest traffic, and pollute the air.

In seven pilot zones across the city—with a total of 7,000 curb parking spaces—San Francisco installed sensors that report the occupancy of each curb space on every block and parking meters that charge variable prices according to location and time of day. The city adjusts prices every two months or so in response to occupancy rates, increasing prices if occupancy is too high and reducing prices if occupancy is too low.

Consider the resulting prices of curb parking on a weekday at Fisherman's Wharf, a popular tourist and retail destination (**Figure 1**):

**Figure 1. Weekday Parking Prices at Fisherman's Wharf, May 2012**



Source: Gregory Pierce and Donald Shoup, "SFpark: Pricing Parking by Demand," *ACCESS* 43 (Fall 2013): 20–28.

Before SFpark began in August 2011, the price for a space was \$3 an hour at all times. Now each block has different prices during three periods of the day—before noon, from noon to 3 p.m., and after 3 p.m. By May 2012, most prices had decreased in the morning hours. While some prices increased between noon and 3 p.m.—the busiest time of the day—most prices after 3 p.m. were lower than in midday though higher

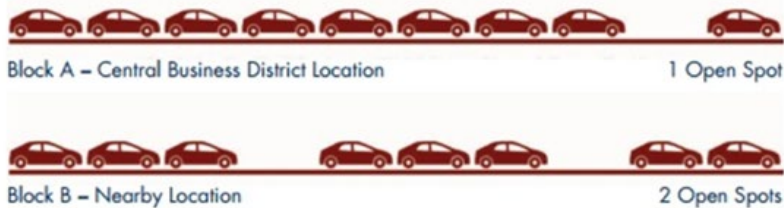
than in the morning. Prices changed every six weeks, never by more than 25 cents per hour. *SFpark* based these price adjustments purely on observed occupancy. City planners cannot reliably predict the right price for parking on every block at every time of day, but they *can* use a simple trial-and-error process to adjust prices in response to past occupancy rates. San Francisco charges the lowest prices possible without creating a parking shortage. This process of adjusting prices based on occupancy is sometimes called “performance pricing.” **Figure 2** illustrates how nudging prices up on Block A, a crowded block, and down on under-occupied Block B can shift a single car to improve the performance of both blocks.

**Figure 2. Performance Prices Balance Occupancy on Every Block**

**Before SFpark**



**After SFpark**



Source: Pierce and Shoup, “*SFpark*.”

Beyond managing the on-street supply, *SFpark* helps to depoliticize parking. Transparent, data-based pricing rules can bypass the usual politics of parking. Because demand dictates the prices, politicians cannot simply raise them to gain more revenue.

While it is clear that demand-based parking prices are efficient, are they fair? In San Francisco, 30% of households do not own a car,



so they don't pay anything for curb parking. San Francisco uses all its parking-meter revenue to subsidize public transit, so automobile owners subsidize transit riders. *SFpark* further aids bus riders, cyclists, and pedestrians by reducing the traffic caused by cruising for underpriced and overcrowded curb parking.

*SFpark's* goal is to optimize occupancy, not to maximize revenue, and prices go down as well as up. Because the prices at most meters had been too high in the mornings, the average price of curb parking fell by 4% during *SFpark's* first two years.

Varying the prices for curb parking by location and time of day aroused almost no political opposition, especially because the prices changed slowly and more prices went down than up. Most drivers didn't even seem to notice that prices were changing. Opposition did erupt, however, whenever the city proposed new parking meters on blocks that had previously been free. So I will turn next to policies that cities can adopt to make parking meters politically popular.

## II. Parking Benefit Districts

If all the parking-meter revenue disappears into a city's general fund—as it now does in most cities—few businesses or residents will want to support charging for on-street parking. But if meter revenue is dedicated to specific, additional public services in the metered neighborhood, residents will be much more inclined to support performance pricing.

As a way to appeal to local stakeholders, some cities have created Parking Benefit Districts that spend the meter revenue only in the metered areas. Everyone who lives, works, visits, or owns property in the district can readily see the benefits paid for by the parking meters.

Old Pasadena, a historic business district in Pasadena, California, illustrates the potential of Parking Benefit Districts. Old Pasadena began to improve dramatically when the city installed parking meters in 1992 and began spending revenue of more than \$1 million a year to rebuild the sidewalks, plant street trees, add historic street furniture, and increase police patrols. Parking revenue helped to convert what had been a commercial skid row into a popular destination.<sup>3</sup> Following the example of Pasadena, several other cities, including Austin, Houston, Mexico City, San Diego, and Washington, D.C., have com-

mitted parking revenue to finance public services on the metered streets.<sup>4</sup> Thus far, Parking Benefit Districts have been adopted almost entirely in commercial areas. A key question is whether they can also work in residential neighborhoods where everyone is accustomed to free parking on the street.

Currently, most cities issue residential parking permits either free (as in Boston) or at a low price (such as \$34 a year in Los Angeles) for all the cars registered at each address. Although cities create permit districts only in neighborhoods where parking is scarce, they can be freewheeling about the number of permits they issue. For example, a political storm erupted in San Francisco in 2002 when journalists discovered that romance novelist Danielle Steel had 26 residential parking permits for her house in Pacific Heights.

What would it look like to institute a Parking Benefit District in a residential zone? First, drivers pay market prices for the permits. Second, the number of permits is limited to the number of curb spaces. Third, the permit revenue pays for neighborhood public services on the permit blocks.

Conventional residential permits are usually priced far below the market price because car owners resist paying to park in front of their own homes. The political incentives change drastically, however, when the majority of residents park off-street or don't own a car and the parking revenue pays for neighborhood public services. The residents' desire for public services can outweigh the motorists' desire to park free on the streets.

Can charging market prices for on-street parking permits produce enough revenue to pay for public services in residential neighborhoods? I believe that they can. In the next section, I will outline the best way to price parking permits.

### *Uniform-price auctions*

If a residential neighborhood wants to implement a Parking Benefit District, the simplest way to discover the market price is through a uniform-price auction. Here is an example of how it would work: each resident on a block with 20 parking spaces is allowed to submit a bid for one permit. The bids are ranked in descending order, and the highest 20 bidders receive permits. All the winning bidders then pay the same price: the lowest accepted bid. All but the lowest winning bidder thus pay less than what they actually bid. (Some universities use uniform-price auctions to sell campus parking permits.)

The auction price for street parking is the lowest price that will not create a shortage of parking and the price that will presumably compete with the market price of nearby off-street parking. For example, if residents can rent parking in a nearby garage, that price should put a ceiling on what residents are willing to bid for a permit to park on the street. If the monthly rent in the nearest garage is \$100 a month, for example, this seems a reasonable estimate for the auction value of a permitted parking space on the street.

Although \$100 a month (\$3.30 a day) may seem a lot to pay for a permit to park on the street, drivers receive guaranteed parking spaces—a valuable asset in a neighborhood where street parking had previously been a gamble. Furthermore, because the revenue from parking permits pays for public services, the combination of guaranteed parking *and* the new public services may persuade even car owners to support a Parking Benefit District. A few spaces on each block could have conventional parking meters to accommodate visitors.

If the auction price is \$100 a month, 20 permits will yield total annual revenue of about \$24,000 to pay for public services on the block. Each block will require a separate auction because the demand for and supply of on-street parking varies by location. The auctions can be repeated every year, and the permits can be transferrable. Cities that are not equipped to manage the permit auctions can contract with e-commerce companies such as eBay that specialize in online auctions.

### *An alternative to alternate-side-of-the-street parking regulations*

In addition to providing guaranteed curb spaces, a Parking Benefit District can eliminate the frustrating requirement that residents move their cars from one side of the street to the other on street-cleaning days. As Calvin Trillin showed in his brilliant novel *Tepper Isn't Going Out*, alternate-side parking creates a nightmare for residents who park on the street. If cities use parking revenue to pay for vacuum equipment to clean around and under parked cars, streets can be swept without requiring drivers to move their cars.

To be sure, vacuum cleaning will require hiring more personnel and replacing conventional street-sweeping vehicles with new equipment. But ending the requirement to move cars back and forth may increase the auction value of parking permits by more than the cost of the vacuuming. If so, there will be revenue to pay for additional public services.

*Discounts for shorter and cleaner cars*

How many cars can park on a block in a Parking Benefit District? That depends on the length of the block and the size of the cars. To encourage drivers to economize on curb space, the city can give discounts on the permit prices for smaller cars. In addition to taking up less space, smaller cars tend to be more fuel-efficient, so discounts for smaller cars will reduce fuel consumption and CO<sub>2</sub> emissions.

**Figure 3** illustrates parking discounts based on car lengths. Column 1 shows a selection of cars, and Column 2 shows their lengths, ranging from 20 feet for a Rolls Royce down to 8.8 feet for a Smart car. Column 3 illustrates the discount for each car based on its length. Because the Rolls Royce is 20 feet long, it pays the full price, while the 10-foot Scion receives a 50% discount. Two Scions pay the same as one Rolls Royce, so the payment per foot of curb space is the same for both cars.

Column 4 shows each car’s fuel efficiency, ranging from 14 miles per gallon for the Rolls Royce up to 37 miles per gallon for the Scion. Finally, Column 5 shows each car’s CO<sub>2</sub> emissions. For example, the Ford emits less than half as much CO<sub>2</sub> as the Rolls Royce.

**Figure 3. Permit Price Discounts Based on Car Length**

Make and Model (in 2014)	Length (feet)	Discount (percent)	Fuel Efficiency (miles/gallon)	Co <sub>2</sub> Emissions (grams/mile)
1	2	3	4	5
Rolls Royce Phantom	20.0	0%	14	637
Lincoln MKS	17.2	14%	22	400
Buick Regal	15.8	21%	24	371
Ford Fiesta	14.5	28%	29	301
Chevrolet Spark	12.1	40%	34	258
Scion iQ	10.0	50%	37	238
Smart	8.8	56%	36	243

Source: Donald Shoup, “Making Parking Meters Popular,” *ACCESS* 45 (Fall 2014): 35–37.

Cities with serious air pollution can also consider giving parking discounts for cars with low hydrocarbon or nitrogen oxide emissions. Parking meters in Madrid, Spain, for example, charge 20% less for clean cars and 20% more for dirty cars. Prices are the most reliable way for cities to send signals about the behavior that they want to encourage. If cities give discounts on permit prices for smaller and cleaner cars, more people will drive them.

### *Political prospects of Parking Benefit Districts*

To examine the political prospects of charging for street parking to finance public services, we need to look at the demographics in a city that would benefit from this policy. Consider Manhattan, where 78% of households do not own a car (**Figure 4**). The carless majority will receive better public services without paying anything, and they outnumber car owners by more than three to one. In some especially dense neighborhoods, such as Chinatown, carless residents outnumber car owners by more than 10 to one. And even among car owners, many park in expensive lots and garages rather than on the street. Where a large majority prefers better public services to free curb parking, a Parking Benefit District may be politically feasible.

**Figure 4. Automobile Ownership in New York City**

	New York City	Manhattan
Households	3,063,393	738,131
Households with cars	1,363,417	160,164
Households without cars	1,699,976	577,967
Share of households with cars	45%	22%
Share of households without cars	55%	78%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample, 2008–12.

The motoring minority are also wealthier than the carless majority (**Figure 5**). Because car-owning households have much higher incomes than carless households, charging for parking to pay for public services seems fair.

Figure 5. Average Annual Income per Household in New York City

	New York City	Manhattan
All households	\$77,060	\$120,091
Households with a car	\$96,472	\$191,389
Households without a car	\$61,836	\$101,554
Income ratio of owners/nonowners	156%	188%

Source: American Community Survey, Public Use Microdata Sample, 2008–12.

Charging fair market prices for on-street parking can raise money to repair broken sidewalks, plant street trees, install security cameras, or remove the grime from subway stations. In dense neighborhoods, few will pay for on-street parking, but everyone will benefit from the public services.

Most existing parking-meter revenue has already been spoken for, often in complex ways. Because most cities now receive no revenue from on-street parking in residential neighborhoods, Parking Benefit Districts have the advantage of providing an entirely new source of public revenue.

*Power equalization*

Parking Benefit Districts allow each neighborhood to decide whether to charge for curb parking and how to spend the resulting revenue. Such a pointillist style of public finance can lead to more rational decisions about parking policies as well as public services.

Still, if more affluent neighborhoods have a higher demand for curb parking, they will earn more revenue than poorer neighborhoods, which seems unfair. Suppose, for example, rich neighborhoods earn an average revenue per curb space of \$5,000 a year (\$14 a day) while poor neighborhoods earn only \$500 a year (\$1.40 a day). In this case, rich neighborhoods would receive 10 times more than poor neighborhoods. How can a city avoid this inequality and still provide local incentives to charge for curb parking?

One option is to employ what in public finance is called “power equalization.” Suppose the average revenue per curb space is \$2,000 a year. In this case, the city can spend \$1,000 a year per space for added public services in each Parking Benefit District and spend the other \$1,000 for citywide public services. All neighborhoods that charge mar-

ket prices for their curb parking thus receive the same revenue per space; equal effort will produce equal results everywhere. Even neighborhoods that do not charge for curb parking can benefit from the citywide public expenditures.

Power equalization can transfer money from more affluent to less affluent neighborhoods and yet maintain the incentive for every neighborhood to charge for curb parking. To further increase the political appeal of the policy, the city can dedicate the citywide share of parking revenue to pay for highly visible public services, such as cleaning subway stations or installing bus shelters.

Giving money to Parking Benefit Districts according to the number of parking spaces might lead residents to oppose using the curb lanes for anything *except* parking, such as to make room for a bus lane or bike lane. To avoid this problem: where the city prohibits curb parking, it can give the districts an equivalent amount of money per foot of curb space.

## Conclusion: Turning Problems into Opportunities

Decisions about parking are political, and the prospects for parking reform depend on what the political context allows. Parking Benefit Districts can appeal to people across the political spectrum. Liberals will see that a Parking Benefit District increases public spending. Conservatives will see that it relies on markets to allocate scarce land. Libertarians will see that it relies on individual choices rather than regulations. Drivers of all political stripes will see that it ensures guaranteed curb parking and removes the requirement to move their cars for street cleaning. Residents will see that it pays for public services. Environmentalists will appreciate that it reduces energy consumption, air pollution, and carbon emissions. Neighborhood activists will celebrate the fact that it allows key public decisions to be made at the local level. Local elected officials will see that it depoliticizes parking, reduces traffic congestion, and pays for public services without raising taxes.

Yet people also want to park free. They may not have an ideological or a professional interest in free parking, but they do have a personal interest in it. Nevertheless, strategic use of the parking revenue can create a countervailing personal interest in charging for curb parking. Cities can

create the necessary political support for priced parking by dedicating the resulting revenue to pay for public services on the metered streets.

Any city can offer a pilot program to charge for on-street parking and use the revenue to finance public services. If residents don't like the results, the city can cancel the program and little will be lost. If residents do like the results, however, the city can offer this self-financing program in other neighborhoods. Because neighborhoods will have money to spend and decisions to make, residents will gain a new voice in governing their communities.

This simple parking reform may be the cheapest, fastest, and simplest way to improve cities and create a more just society, one parking space at a time.

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# MICROUNITS: A TOOL TO PROMOTE AFFORDABLE HOUSING

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## Introduction

“Tiny living”—living in very small spaces by late-20th-century U.S. standards—is a hot topic in American urban policy, as the revival of demand for urban living has collided with mid-20th-century rules and regulations on urban growth, sending rents soaring in many U.S. cities.

Tiny-living arrangements include “microunits” (apartments smaller than traditional studios), “microsuites” (individually rented and lockable bedrooms that share kitchens and common areas), modernized boardinghouses, and tiny houses (detached cottages much smaller than traditional homes). Tiny-living accommodations are often illegal or so heavily regulated that there is little (legal) supply of them.

Today, the highest-productivity U.S. cities face a housing-supply crunch. Tight land-use regulations have weakened the traditional link between high metropolitan-area incomes and new housing permits.<sup>1</sup> Before 1980, metro areas with higher incomes generally saw faster population growth, as people moved to such places for better opportunities.<sup>2</sup>

This is no longer true—largely because restrictions on building in some markets make it harder to build more housing to keep up with demand.

Instead of more population growth, higher incomes in regions with restrictive building rules are increasingly capitalized into higher rents and property prices. This reduces the incentive for all but the highest-skilled workers to relocate to such areas.<sup>3</sup> As a result, regional convergence in median household income has begun to reverse after a long period of convergence up to 1980.<sup>4</sup>

Additionally, in some cities there is a mismatch between household sizes and apartment sizes. The growth in demand for single-person urban households—especially among seniors and young people—in recent decades has not been matched by the growth in the supply of small, single-housing units.<sup>5</sup>

There are 1.9 million one- and two-person households in New York City, for example—but only 1.25 million studio and one-bedroom apartments. Seniors often find themselves unable to downsize and still remain in their home city at a reasonable price, while young singles find themselves sharing space (sometimes illegally) with unrelated roommates in apartments intended for families.

House prices have risen far above the marginal cost of construction in many cities,<sup>6</sup> creating unearned windfall gains, formally known as “economic rents,” for landowners<sup>7</sup>—at the expense of productivity and income growth for the economy as a whole. As Harvard’s Edward Glaeser notes in *City Journal*, “When Americans move from New York to Houston [because of high house prices in the former], the national economy simply becomes less productive.”<sup>8</sup>

Across America, there is a huge need to increase the supply of housing to ameliorate rising rents. There are two basic ways to legalize more housing supply: allow bigger buildings; or allow people to live in smaller units within buildings of a given size. Various strategies can be used to boost housing supply, including “upzoning” (such as allowing multiunit buildings where currently only single-family homes are allowed), relaxing caps on height and floor area ratio, and legalizing “accessory-dwelling” units (such as basement apartments).

Broader permitting of microunits and microsuites would be one useful strategy. Both allow more housing units to be created inside the physical floor area of what is currently allowed. Both also work in con-

junction with other strategies, such as increasing maximum floor area ratios (which would allow more building on a given amount of land).

Microunits are not a panacea for high housing costs. Nor should they be seen as an effort to compel people to live in smaller units. Rather, the microunit is one tool among many that can add supply to a segment of the housing market that is underserved.

## I. Why Microunits Are Good for High-Rent Cities

Microunits can help stabilize per-capita housing costs in high-rent cities. In neighborhoods where microunits are economically viable, they will not only provide relief for adult roommates who would prefer privacy at the right price; they will also help release three- and four-bedroom apartments currently occupied by unrelated millennials for use by actual families.

New construction in NYC is typically unaffordable for middle-income singles. The rent affordable<sup>9</sup> for an individual earning 100% of area median income (AMI) is roughly \$1,500 per month in 2015, while a prime 400-square-foot Manhattan studio built in the last 10 years is difficult to find for under \$2,600 per month.

New York University's Furman Center estimated in 2015 that rental buildings constructed in Manhattan south of 96th Street over the last 10 years require average annual residential rents of \$80/sq. ft. Rental listings for recently built luxury studios are consistent with this estimate. For example, Avalon's Clinton building on 52nd Street, built in 2007, currently offers studios for about \$84/sq. ft. and one-bedrooms for about \$62/sq. ft.

At these rents, brand-new 300-sq.-ft. microunits would likely be viable for \$1,900–\$2,200/month. As microunits age, they would become relatively cheaper, too—just as studios with kitchens and finishes from the 1980s today can be found for less than \$2,600/month in core Manhattan.

In the outer boroughs (i.e., outside Manhattan), where land prices and construction costs are lower, microunits would be economically viable at much lower rents. According to Furman Center figures,<sup>10</sup> microunits would be viable at \$1,100–\$1,500/month in Astoria (Queens) and Williamsburg (Brooklyn), for example.

This shows the potential for microunits to create housing supply at more affordable prices. (Across the U.S., microunits tend to rent for, on average, 20%–30% less than comparably located conventional units, according to the Urban Land Institute.)<sup>11</sup>

Despite lower total rents, microunits typically command higher rents *per square foot* than larger apartments. Why? This is simply an extension of the same premium per square foot that normal studios command over one-bedrooms, that one-bedrooms command over two-bedrooms, and so on.

This is not true everywhere, however. In parts of Manhattan, for example, buyers will pay more per square foot the larger an apartment is, reflecting the space desires of high-end buyers.<sup>12</sup> In these areas, microunits would likely not be built even if they were allowed. But outside these super-affluent districts, developers would have an incentive to construct microunits if permitted because microunits would command premium rents on a per-square-foot basis, even while being cheaper on a per-apartment basis.

“Ground-up” (i.e., new) construction of microunits and microsuites would provide the opportunity to raise construction quality to mitigate any quality-of-life sacrifice traditionally required by tiny living. Chris Bledsoe, cofounder of Ollie, a microunit and microsuite start-up, says that his design specifications for a development partner on one ground-up project in the NY/NJ/CT area initially evoked surprise:<sup>13</sup> Bledsoe requested sound-dampening double-insulated walls between bedrooms—not just between apartments, as usual—in addition to better elevator performance.

Thicker walls, Bledsoe points out, help mitigate the privacy loss associated with moving to small apartments. This makes the microsuite format more desirable—both for co-living adults and for families in need of affordable shared space—by reducing the likelihood of “audible indignities.”

In short, microunits could provide a valuable source of new affordable housing supply for singles (or even couples) in cities that badly need it, while providing better construction quality than current impromptu apartment subdivisions (which are frequently illegal and sometimes unsafe)<sup>14</sup> provide.

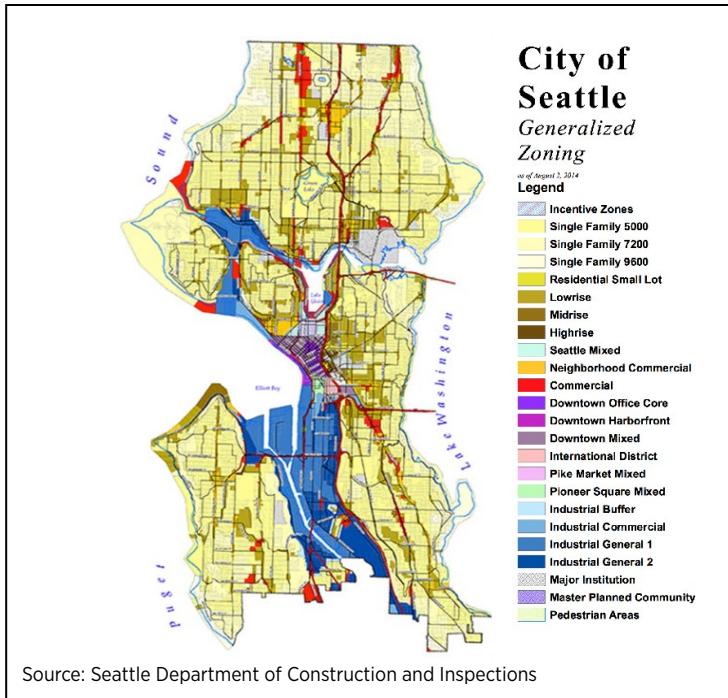
## II. Legal Barriers to Microunit Development

Microunits are either illegal or heavily restricted in many U.S. cities. Barriers come in three principal forms: direct bans on microunits, such as by minimum-unit sizes; zoning maps that geographically restrict where microunits can be built; and other de facto restrictions, such as overall-density limits or bans on shared facilities, such as kitchens.

Several cities, including Boston, Chicago, New York, San Francisco, and Seattle, have taken steps toward permitting microunit housing (see **Appendix**). San Francisco and Seattle now permit apartments as small as 220 square feet. New York now allows apartments as small as 300 square feet.

In practice, various rules continue to limit the quantity of microunits that can be built in these cities. For example, New York has an overall density cap that restricts the number of microunits that can be put into a building. The vast majority of Seattle is zoned exclusively for single-family homes (**Figure 1**) with traditional apartments banned.

**Figure 1. Seattle Zoning Map, 2014**



The experiences of NYC and Seattle suggest that even technically legalizing microunits may produce only a limited impact on housing supply if a city's zoning map heavily restricts where microunits can be built. Consider Seattle, which had a boom in microunit construction following the subprime-mortgage crisis.

The late entrepreneur Jim Potter discovered that Seattle's zoning code counted dwelling units by the kitchen, without a limit on the number of bedrooms attached to said kitchen. The code allowed these "as-of-right," without the design and environmental reviews usually required for big multifamily projects. This meant that a Seattle townhouse that "on first sight appears to have eight apartments might actually contain 64 units."<sup>15</sup>

Says one prominent anti-density activist in Seattle cited by POLITICO, "I just don't think [boardinghouses] belong in a low-rise zone where someone has invested half a million in a townhouse and then 56 people move in next door."<sup>16</sup> This particular 56-person dwelling was built in a low-rise zone in Seattle's Central District, within walking distance of downtown.

In Seattle, the resulting blowback from such developments resulted in tight restrictions on so-called congregate housing (housing like Potter's 64-unit development, in which people live in private rooms but share facilities), including a ban on shared kitchens, although 220-square-foot microunit studios are still allowed in (somewhat) broader zones. Similarly, NYC discourages tiny living by requiring all microsuite residents to share a single lease, which reduces much of the flexibility and, thus, the attraction of such accommodation.

This is not to say that there are no valid public-policy purposes for these restrictions. But it means that even where tiny-living development is permitted in theory, other restrictions often make it infeasible in practice.

### III. Common Objections to Microunits

The current debate over legalizing small apartments may appear surprising. After all, historically, the boardinghouse, a type of microunit building, has been an iconic American model of economical living for artists, intellectuals, immigrants, and others of modest means seeking the opportunities of urban life—from Ben Franklin's first independent dwelling as a Boston teenager in 1720, to the home of the eponymous protagon-



onist from the popular 1990s cartoon “Hey Arnold!”<sup>17</sup>

Best practice in regulatory theory also restricts intervention only to areas where there is a measurable market failure that outweighs the risk of government failure from intervention. As an economic matter, there are no obvious market failures particular to small units.

Multifamily buildings typically generate varying positive and negative externalities, depending, among others, on whether the residents of such buildings are transit- or car-oriented (if the latter, negative externalities could include more air pollution and greater street and parking congestion). In general, though, there is no additional increment of external benefit or cost for allowing smaller units beyond what exists for multifamily buildings in general.

### *Will Microunits Attract the Mentally Ill?*

America’s experience with deinstitutionalization of the mentally ill helped poison the well of public sentiment against tiny living. During the peak of deinstitutionalization (1960s–1970s), single-room-occupancy (SRO) hotel housing (a type of tiny living) was the first stop for those who were well enough to stay off the streets.

The loss of mental institutions as the bottom rung of the housing ladder turned SROs into the new bottom rung: 7,000 mentally ill men were moved into Chicago’s Uptown neighborhood SROs in one year alone.<sup>18</sup> During 1955–85, 125,000 mentally ill people were released into NYC, even as the city lost some 100,000 SRO units during the same period after a ban on new SROs and regulatory pressure to remove existing ones.<sup>19</sup>

In theory, most people would like to help the homeless. But few homeowners want the homeless—and the threat of disruptive behavior that such people often bring—living next to their own homes (typically a person’s largest financial asset). Unfortunately, America’s political backlash against this influx of mentally ill people went further: the new restrictions on tiny living wiped out housing for working-class singles.

Today, most discussion of microunits revolves around housing for educated young adults; but this background stigma still affects how many people think about microunits. Indeed, subsidized SRO-style tiny living may encourage the present-day homeless and mentally ill, among others, to pursue such housing. The similarity between subsidized SRO-style

supportive housing and microunits/microsuites that target middle-class residents thus creates political and policy challenges to the broad legalization of tiny living.

Yet careful analysis of land prices and construction costs can circumnavigate these hurdles by permitting studio-style microunits only in neighborhoods where projected market-rate rents exceed what's affordable to individuals earning, say, 30% of AMI or more.<sup>20</sup> This kind of targeted geographic legalization of working- and middle-class tiny living should be coupled with sufficient supportive-housing tiny living for the mentally ill in politically acceptable areas.

### *Will Microunits Attract College Students, Vagrants, and Other Sketchy People?*

In community meetings where new microunits are under review, residents often express concern. Consider the testimony in Manhattan's Community Board 6, regarding the approval of New York's experimental all-microunit building, as reported in the *Wall Street Journal*:

"No matter what anyone says, we're worried that these are going to be SROs that are run as hotels," said Toni Carlina, the community board's district manager. According to Ms. Carlina, the community board is also concerned about an eating-and-drinking establishment being allowed in the building, since she said the public plaza that it will be facing has had a problem with vagrancy in the past, and residents worry that if there is a bar or restaurant open late into the night, vagrancy will once again be an issue.<sup>21</sup>

There was more at DNAinfo.com:

"You're putting people into places where they're not going to take ownership of their homes. We're going to be stuck with the fallout from this [said a neighborhood resident]... I know that's not what you're [*sic*] intentions are going to be, but that's how it's going to be," Thompson [a real-estate agent] said. "Management is not going to be able to keep up with who's coming and going, and it's going to be a free-for-all."<sup>22</sup>

Such comments reflect a distaste for college students, who have an often deserved reputation for rowdy, drunken behavior at late hours. The comments also reveal a fear of vagrancy. Because the building in question was built on city-owned land, 40% of the microunits were required to rent below market rate, starting at \$914/month (although \$914/month would likely outprice real “vagrants”).

Similar concerns were shared in Seattle regarding microunit townhouses, where totally unsubsidized market-rate microunits were proposed to start at \$500/month in Seattle’s prime Capitol Hill neighborhood:

“I think this is going to be a magnet for very sketchy people.” ... [A neighbor] was bracing for 46 low-income renters in the space where he’d been expecting six new homeowners instead.... “Anyone who can scrape up enough money to live month-to-month can live there,” he said, worried that low-income interlopers would jeopardize his chances to sell his own house. “I don’t think most people want to live next to a boarding house with itinerant people living in it.”<sup>23</sup>

A challenge posed by naturally affordable housing emerging in expensive, underbuilt neighborhoods is that many existing wealthy residents bought into their properties expecting poor people, or transients, to be unable to live nearby. From the perspective of incumbent homeowners, affordable unsubsidized housing is not a solution; it is a problem.

Even progressive-minded Seattle, with its socialist city councilors and its \$15 minimum wage, passed new minimum-unit-size rules in 2014, as well as tight restrictions on congregate housing near single-family-home neighborhoods. This puts much of the land near the city’s high-priced core off-limits to microunits.<sup>24</sup>

Not all areas are so unfriendly to microunits. Many commercial/industrial areas in low-density “inner suburbs” would permit low-income, affordable, high-density construction without affecting existing residential areas.<sup>25</sup> Meanwhile, high-density, cosmopolitan inner-city areas<sup>26</sup>—where socioeconomic diversity isn’t a perceived social or political threat—provide ripe opportunities for legalizing microunits, too.

## IV. Targeted Rezoning: A Reasonable Compromise

America's late-20th-century implicit housing bargain holds that we either restrict new market-rate construction in the best neighborhoods to push out (or keep out) the disorderly poor and generate land rents for homeowners, while allowing the poor to live elsewhere, in a predictable, politically controlled fashion; or, in jurisdictions that subsidize mixed-income "inclusionary" developments, we limit the number of low-income people to a certain population share while still leaving the new-supply restrictions (and high prices) in place.

In suburban communities, this is achieved through minimum lot-size restrictions for detached houses instead of minimum-unit-size restrictions for multifamily buildings. And to the extent that microunits reduce this class stratification, they will tend to generate political opposition.

Public concerns about microunits could be addressed in various ways. As noted, residents' concerns about the income of future neighbors could be allayed by targeting specific areas for rezoning. This could be done implicitly, by extending microunit legalization only to the highest-rent neighborhoods; or explicitly, with designated AMI thresholds.

Feasible legislation will depend on local context. Plausible reform proposals must acknowledge that the political dynamics that produced today's rules cannot be expected to simply disappear. We do not necessarily endorse the sort of social engineering inherent in targeted rezoning; we merely note that existing land-use rules are already a form of community-driven social engineering.

In short, targeted rezoning is not ideal; but it is a reasonable strategy for obtaining political acceptance of incremental improvements. In cities and neighborhoods skeptical of affordable market-rate microunits, targeted rezoning could help rehabilitate the latter's image, thereby making microunits gradually acceptable to a broader spectrum of neighborhoods.

## Conclusion

Legalizing microunits presents an opportunity to add affordable, safe density to expensive urban cores and inner-ring suburbs. Combined with looser restrictions on height and floor area near underutilized tran-

sit corridors, microunits could help stabilize per-capita housing costs in expensive urban areas (with the side benefit of boosting ridership on public transportation, raising public-transit revenue, and cutting carbon emissions).

Even in Sun Belt cities with plenty of available land, downtown amenity-rich microunit buildings could represent an attractive lifestyle choice for young singles looking to replicate the social and urban benefits of their former college-town shared apartments. As the enthusiasm for new microunit buildings, such as Carmel Place in NYC,<sup>27</sup> demonstrates, many young people would eagerly trade square footage for in-building cleaning services, a game room, a gym, and a dynamic, centrally located neighborhood with an easy commute.

For the elderly, the ability to stretch their retirement incomes further by downsizing to stay in the cities in which they worked is a compelling value proposition. For the middle-aged, microunits offer an intriguing alternative to newly free empty-nesters curious to live in trendy, youth-oriented neighborhoods, such as Williamsburg, Brooklyn;<sup>28</sup> or to the recently divorced (perhaps with alimony-slimmed pocketbooks) looking to reenter urban areas, where dating markets are thicker. In other words, the potential market for microunits is vast.

In addition, purpose-built microunits with specialized “supportive housing” services for the homeless or other marginalized individuals would potentially reduce the burden on taxpayers without sacrificing—and indeed, likely improving—living conditions for such people.

In the absence of legal microunits—which would be required to meet fire codes and local building rules, such as mandating that every apartment has a window—the market demand for smaller, more affordable living spaces in high-cost areas means that landlords and tenants will continue to subdivide their apartments anyway, often in illegal and unsafe ways. Instead, developers should be allowed to provide safe, legal, and attractively priced alternatives.

In transit-oriented neighborhoods, for instance, we need to legalize denser living in ways that allow incredibly expensive and valuable public-infrastructure investments to be put to their fullest use. The alternative: stuff the land rents created by said infrastructure into the pockets of the lucky few low-rise building owners, as trains and buses rumble past underbuilt transit corridors.

Microunit residents, like everyone else, should be socially and legally expected to respect their neighbors' right to live in peaceful conditions. Yet in a country that still values individual autonomy and self-determination, Americans should also be able to economize and live in as little space as they desire, so long as requirements for minimum-unit quality and safety are followed. Microunits that satisfy these basic requirements should be allowed to flourish.

## Appendix. What's Lawful in Select Cities

### Chicago<sup>29</sup>

- Units are designated as "dwelling units" (one or more bedrooms), "efficiency units" (studios), and SROs
- No formal minimum-unit size
- 500 sq. ft. average-unit size
- Restrictions on the number of efficiency units in a building, varying by zone
- Minimum lot area per unit, varying by zone
- 0.5 to 1 parking space per unit, varying by zone
- New SROs technically legal; but they must be licensed and face significant restrictions in most zones

### Seattle<sup>30</sup>

- Small Efficiency Dwelling Units:
  - 220 sq. ft. minimum-unit size
  - 150 sq. ft. sleeping area
  - Unit must include kitchen
  - Design review required
- Congregate Units:
  - 70 sq. ft. minimum-unit size
  - Common kitchens allowed
  - Only lawful in high-density neighborhoods
  - Design review required

### Boston

- 450 sq. ft., varying by zone; 350 sq. ft. possible in Seaport Innovation District
  - "Lodging House"/SRO rooming units must be licensed and are increasingly rare<sup>31</sup>
  - Varying minimum-unit sizes and restrictions on multifamily building in general

### San Francisco

- 220 sq. ft. minimum-unit size

### New York City

- As of April 2016: 300–325 sq. ft. minimum-unit size
- Unit quantity maximum varying by zone
- No parking requirement for affordable or senior housing near rail transit
  - Market-rate parking requirements vary by zone

## Endnotes

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# HOW CITIES CAN IMPROVE THEIR PROCUREMENT OF GOODS AND SERVICES

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## Introduction

Nearly everything important that city governments do combines the efforts of city government employees with goods and services acquired from the private sector. This is true of building and maintaining roads. It's true of transporting children to school. It's true of collecting and recycling trash. It's true of sheltering the homeless and providing job training to the unemployed. Even inherently governmental activities, such as licensing and inspections, require information technology systems purchased from the private sector.

Yet most cities treat procurement and contract management as back-office functions rather than as key strategic activities. Even simple procurements get tied up in red tape and can take months to accomplish. Many contracts are renewed at the last minute, without consideration of past performance. Contract management consists largely of processing invoices and change orders, with little attention paid to monitoring quality. Vendors are rarely challenged to improve outcomes.

Since 2011, the Harvard Kennedy School Government Performance Lab has been providing pro bono technical assistance to state and

local governments in an effort to understand how governments can improve their contracting and procurement. As part of Bloomberg Philanthropies' What Works Cities initiative, we are helping 20 cities across the country implement "results-driven contracting" strategies.

While our research is ongoing, we are now starting to identify common patterns across many cities in the most significant procurement challenges they are facing and in the solutions that are enabling them to improve results for their residents.

In the following pages, we describe the significant progress that can be made when cities treat procurement as a strategic priority, take advantage of information technology to track performance and manage vendor relationships in real time, and pursue a flexible approach to acquisition.

## I. What a City Buys

There are two approaches we have taken to identify the most important and challenging procurements that cities manage.

Our first approach has been to analyze comprehensive data on everything that cities buy. Thanks to the open data movement, several cities now make procurement data on individual contracts available on the web. This follows the lead of the federal government, which makes information on every federal contract available at [usaspending.gov](http://usaspending.gov). Analyzing these data allows us to identify the largest contracts in dollar value and to generate hypotheses about which other contracts appear to be the most mission-critical for city agencies.

Since our work as part of What Works Cities has focused on mid-size cities (those with populations between 100,000 and 1 million), our analysis to date has focused on the publicly available procurement data from Baltimore, Boston, and Fort Worth. Because the Boston data are the most complete, we present some findings from our Boston analysis below.

Our second approach has been to interview officials from dozens of cities about the procurement challenges they are facing and the solutions they have developed. Essentially, we ask them two questions: Which procurements are you losing sleep over?<sup>1</sup> And what are some innovative strategies you have developed to address specific procurement challenges?

At a given point in time, the City of Boston has approximately 1,500 active contracts, with a total annual value of \$1.2 billion. This represents just under 50% of annual city expenditures.

**Table 1** shows that Boston's largest categories of purchases include school transportation, trash disposal, health insurance for city employees, construction materials and services, and special-education services.<sup>2</sup>

**Table 1. Boston's Top Purchases of Goods and Services, 2012**

Goods and Services	No. of Contracts	Contract Value (in millions)
School-Related Transportation	2	\$616
Trash Disposal	11	\$344
Health Insurance	5	\$286
Construction Materials and Services	36	\$134
Special Education	26	\$110
Lease Purchases	7	\$93
Energy and Utilities	5	\$82
Software and Applications	10	\$62
Hardware and Infrastructure	10	\$52
Building Repair and Maintenance	11	\$44

Source: Authors' analysis of City of Boston Currently Active Contracts database

**Table 2** further disaggregates these data by city department for the five city departments that purchase the most goods and services. The business services unit of the Boston Public Schools purchases school transportation, special education, and school meals. The public works department purchases trash disposal, road and bridge maintenance, and vehicle parts and maintenance. The neighborhood development department purchases construction materials and services and loan-provision services and pays policy consultants. The property and construction management department purchases construction-management and property-management services; professional services from architecture, engineering, and land-management firms; and construction materials and services.

**Table 2. Top Goods and Services Purchased by Boston Departments That Spend the Most on Contracts**

Department	Top Goods/ Services Purchased (in millions)			Total Contract Value (in millions)	Annual Contract Value (in millions)
Boston Public Schools Business Services	School-Related Transportation (\$616)	Special Education (\$110)	School Meals (\$32)	<b>\$943</b>	<b>\$269</b>
Public Works	Trash Disposal (\$344)	Repair of Roads, Bridges, etc. (\$31)	Vehicle Parts and Maintenance (\$21)	<b>\$488</b>	<b>\$107</b>
Health & Benefits Administration	Health Insurance (\$286)	N/A	N/A	<b>\$288</b>	<b>\$288</b>
Neighborhood Development	Construction Materials and Services (\$81)	Loan Provision (\$22)	Policy Consultants (\$22)	<b>\$208</b>	<b>\$74</b>
Property & Construction Management	Construction/ Property Man- agement (\$20)	Architecture/ Engineering/ Land Consultants (\$10)	Construction Materials and Services (\$8)	<b>\$197</b>	<b>\$68</b>

Source: See Table 1.

Two important categories of city purchases—technology spending and human-services spending—are largely absent from Table 2 because they are spread across multiple agencies. As of the end of 2012, Boston held 118 technology contracts, with a total (in some cases, multi-year) value of \$167 million. Forty-three percent of this spending was for hardware and infrastructure, 35% was for software and applications, and 19% was for IT support and maintenance. In 2012, Boston held 261 human-services contracts, totaling more than \$226 million. These included special-education services, homelessness services, and services for seniors and at-risk youth.

While these data are from a single city, we have found similar patterns in spending when we have looked at data from other cities. For example, Boston's annual contract spending is 48% of total city expenditures. In Fort Worth, contract spending is 49% of total expenditures.

And Boston, Philadelphia, and New York City all spend approximately one-third of contracted dollars on social services.

## II. The Most Critical Procurement Challenges That Cities Face

Based on our data analysis, but even more so on our interviews with city officials, we have identified a Top 10 list of procurement challenges that most cities are currently facing:

1. *Strategic management of the overall portfolio of key procurements.* We have not identified a single city that develops a list of the most important procurements that are coming up for renewal over the next couple of years and uses that list to prioritize which procurements should receive the most attention to improve the value that they deliver. In fact, most policy and program staff perceive the procurement process not as an opportunity to take advantage of but as an obstacle that needs to be overcome.
2. *Optimizing basic procurement processes.* Many cities have requested our assistance with basic systems reengineering, including the development of common procurement templates across departments and guidance on optimal procurement processes. These efforts are aimed at ensuring the integrity of the vendor selection process; streamlining the procurement process to reduce transaction cost for potential vendors, thereby attracting more bids and boosting competition; and speeding up the procurement review process. Cities are also eager to institute report cards at the end of each contract so that they can use data on past performance to inform future contracting decisions across the city. Finally, city officials are interested in learning about model procurements and adopting best practices from other jurisdictions.
3. *Improving vendor diversity.* Many of the cities we work with have expressed interest in improving the racial and gender diversity of vendors to ensure that contracted dollars also support their equity goals. For example, Boston mayor Marty Walsh signed an executive order in February 2016 setting spending targets for minority- and women-owned businesses (MWBs) competing for construction, architecture, engineering, and professional-services contracts. These diversity efforts heavily overlap with the goal of having city residents win a greater fraction of the city's procurements. To improve vendor diversity, cities can begin by in-

creasing outreach, starting with direct, one-on-one engagement with vendors through e-mails, text messages, and phone calls.

Cities should also hold events in communities where MWBEs are based, to ensure that MWBEs are aware of new contracting opportunities and are able to easily request additional information and technical assistance as they develop their bid responses. Facilitating connections between potential prime and subcontractors so that they can respond to bids as joint ventures can also help. Finally, cities should find ways to streamline their procurement processes and reduce unnecessary requirements, which will decrease costs for vendors and encourage a great number to submit bids.

Still, such efforts may only marginally improve outcomes if there are few qualified, diverse vendors to begin with. To expand the pool of MWBE vendors, cities also need to build vendor capacity and implement strategies to help such vendors overcome structural barriers, including lack of access to assets and capital and limited networks and connections. These are deeply rooted problems that can be addressed only by procurement staff who have the time and resources to focus on such efforts.

4. *Achieving better outcomes from human-services contracts.* Cities have a difficult time seeing the connection between spending on social services and progress in addressing major social problems. Take homelessness. Cities often find that they are spending more and more on services, yet there seems to be an increasing number of people sleeping on the streets. One problem is that there are often multiple funding sources tackling a given social problem, with little coordination to ensure that overall funds are efficiently allocated and that no needy person falls through the cracks. A second problem is that cities often fail to track the results of the services with meaningful metrics. At best, cities monitor processes, such as how many beds were occupied at an emergency homeless shelter. It is rare for cities to track outcomes, such as how many individuals were placed in stable housing. As a result, cities are unable to determine if their services are ultimately mitigating social problems. Furthermore—partly because of the lack of real-time data on program performance—cities are not monitoring whether service providers are delivering effective services, or collaborating with them to improve performance during the course of their contracts.

5. *Managing routine construction and maintenance contracts.* Cities are frustrated that these crucial contracts, particularly those for road construction, repeatedly run over budget and behind schedule. These contracts can require close coordination with other entities to ensure, for instance, that a utility company doesn't dig up a road to repair a pipe the day after that very road was repaved. Unpredictable environmental conditions, such as soil and weather, can further complicate managing the performance of these types of contracts. Finally, there is little attention paid to minimizing the burden on citizens, who have to deal with noise and rerouted traffic.
6. *Contract negotiation for large construction projects.* Cities also report frustrations with procuring and managing large multiyear construction projects, such as building new bridges or expanding subway systems. While independent authorities or other levels of government are often in charge of these projects, cities usually have a seat at the table. The problem is that stakeholders often lack information about the cost and scope of work necessary to complete a project at the time when they are procuring the vendor and negotiating the contract. The tendency during contract negotiations is to transfer as much risk as possible to the other party without considering which party is actually best positioned to detect and manage the particular risk. The result is budget overruns and missed deadlines.
7. *Lack of competition in very large contracts.* For big contracts, such as for school transportation and trash disposal, cities struggle with both performance and pricing. They find it challenging to write contracts that incorporate good performance incentives, and they find that they have little leverage over vendors because there are often only one or two local vendors qualified to provide the service.
8. *Contracts for new technology products and services.* Cities are rapidly developing new websites, new web-based service platforms, and new smartphone apps. But choosing the right procurement strategies and the right vendors for these innovative services is often a challenge. For new technologies, cities cannot simply conduct market research on existing solutions, since the solution may not yet exist. Standard procurement processes require specificity in the procurement and contract and don't permit flexibility. This is a particular challenge in a rapidly changing industry where technical specifications can quickly become outdated. Standard procure-

## Case study: Boston's problem-focused, agile website-redesign procurement

**B**oston's redesign of the Boston.gov website is an example of how restructuring the procurement process to focus on the ultimate goal of the procurement—in this case, building an ever-evolving product that prioritizes user-friendliness—can yield improved results. A review of the more than 20,000 pages of the existing website demonstrated that the city's website was difficult to navigate and that key information was hard to find. The city wanted a new site that would be “beautifully designed, delightful to use, and thoroughly useful.”

To find the most qualified vendor for each aspect of the project, the city decoupled the responsibilities for the back-end content management from the user-facing design and issued a separate request for proposal (RFP) for each. Bidders for both aspects of the project were asked to propose strategies for working with the city's staff to understand user needs and to conduct user tests. The city partnered with winning bidders to review website analytics and get input from end users during the initial discovery phase. Furthermore, in order to appeal to designers who might have balked at responding to a typical, uninspiring government procurement, the city deviated from its regular approach and issued the RFP as a slide deck with pictures and jargon-free language.

The city received 22 initial responses, which is much higher than the norm and included responses from firms that do not typically bid on government procurements. From these initial proposals, the city identified eight potential partners, who were then invited to organize design workshops. These workshops allowed the city to work alongside potential partners to ensure that they would put users at the center of their process. Ultimately, in September 2015, IDEO, a global design firm, and Acquia, a local technology provider, were selected to redesign the website. In January 2016, the city released a pilot version of its new website, which can adapt to all screen sizes and organizes content through “guides” (such as moving and starting a business) rather than by departments. The city then requested feedback from the public on the pilot version of the website to inform the development of the fully updated Boston.gov site, which launched in July 2016 but will continue to be improved. The RFP, as well as updates on the procurement process, is available on the blog [next.boston.gov](http://next.boston.gov).



ment processes also do not allow customers and developers to collaborate closely in creating the specifications for the product, even though this is often crucial for ensuring that the product addresses the needs of the end users.

9. *Managing procurements for large IT systems, such as Enterprise Resource Planning (ERP) systems and human-resource management systems.* When it comes to large IT systems, cities are, by and large, purchasing these products from big national companies. They frequently run into challenges, such as being locked into ongoing customization, implementation, and maintenance contracts. Because of the technical barriers and high costs associated with shifting to a new vendor, cities feel locked in, and the vendors thus enjoy the advantages of a monopoly. Finally, when negotiating with national companies, governments are hindered by an asymmetry in available information: while the contractors can point to concessions made by other governments to build their case for favorable contract terms, cities do not have effective ways to share information with one another.
10. *Lack of competition for professional-services contracts.* Procurements for professional services—financial, accounting, advertising, legal, personnel, and research services—can be challenging. Procurements for such services are often structured in a way that limits the number of bidders and takes a highly specialized approach. As a result, vendors often assume that they are not qualified to bid on procurements issued by departments other than the ones they typically work with—and that leads cities to miss opportunities to achieve volume-pricing discounts by combining common professional-service purchases across departments.

### III. The Results-Driven Contracting Solution

What can be done to address the 10 key challenges listed above? Through our work with the 10 cities (**Table 3**), as well as our work with states and counties, we have developed a framework for improving acquisition practices that we call “results-driven contracting.” Some of the components are standard and can be found in any procurement curriculum. Others are more novel:

*Appoint someone in city hall who would be in charge of managing the city’s overall portfolio of critical procurements.* An official in the mayor’s

inner circle needs to be responsible for identifying the 15–20 most important procurements that will be issued or renewed over the next two to three years and putting in place a results-driven contracting process for each of them.

**Table 3. List of Government Performance Lab’s Engagements With Cities**

City	Focus of Engagement
Baltimore	Feasibility analysis of social services for potential pay-for-success projects
Boston	Applying results-driven contracting strategies to transportation and public-works contracts; improving vendor diversity
Chicago	Pay-for-success project expanding pre-K to 2,620 additional children
Denver	Pay-for-success project providing supportive housing to 250 chronically homeless individuals
D.C. (Water Authority)	Green infrastructure project to reduce stormwater runoff
Little Rock	Improving citywide procurement templates and processes as well as instituting a vendor-evaluation system
Louisville	Pay-for-success project to treat substance abuse among individuals being released from jail
San Francisco	Improving alignment of workforce-development contracts across three departments
Seattle	Applying results-driven contracting strategies for homelessness services
St. Paul	Applying results-driven contracting strategies to road-construction procurements

Source: See Table 1.

While most cities have a chief procurement officer (CPO), that individual is rarely in the mayor’s inner circle and is often more focused on compliance than on performance. In some cases, the existing CPO can take on this new strategic function. In other cases, it will make

more sense to maintain the current CPO in the existing role and assign a different staff person in the mayor's office with the responsibility for strategic management of the procurement portfolio and for convening working groups made up of both programmatic and procurement staff for each key procurement.

*Develop a mission statement for each key procurement.* Cities need to carefully consider what they seek to accomplish with the good or service they are procuring. Program and procurement staff should collaborate to define these goals. Together, they should review past performance to identify shortcomings and areas for improvement. If applicable, end users should be consulted as well.

*Conduct market research.* Cities need to understand the landscape of possible vendors, the goods and services they offer, and their cost structures. It's also crucial that a city learns from outside experience: How have other jurisdictions achieved similar objectives? At this stage, the city should confirm that contracting is preferable to building internal capacity to provide the good or service directly. Key factors in this decision are whether the good or service is inherently governmental, whether the city can maintain sufficient oversight over the contractor, and whether purchasing is more likely to produce the desired outcomes in a cost-effective manner. Before the procurement process has officially kicked off, the city should discuss its goals with potential vendors and ask for their input. It can also be helpful to survey potential vendors about barriers that could prevent them from participating in the procurement. This research can be done through informal interviews or through an RFI (request for information). This can be an informal process—Boston, for example, encourages the use of Google forms to get input from potential vendors prior to issuing an RFP (request for proposal).

*Structure the procurement process and select the contract type.* In accordance with the market research findings, the city should structure the procurement process and select the contract type in order to establish the appropriate incentives for the contractor. The following options and decision points should be considered at this stage:

**Separating or bundling contracts:** Is the good or service that a city needs best procured separately or jointly? When components are deeply intertwined, it is useful to hold one vendor accountable for the

overall deliverable through a single contract. For example, with large and complex construction contracts, such as building bridges, many cities couple the architectural/engineering design and construction services into a single “design build” contract. The contractor is selected based on qualifications, experience, and price. This reduces the need for change orders, which saves time and money.

For example, Minnesota replaced a portion of the I-35W Saint Anthony Falls Bridge that had collapsed in 2007 using this approach. The project was completed within 14 months—a full three months ahead of schedule—and at a cost of \$251 million, which was significantly below the initial estimates of \$300–\$350 million. Early completion resulted in an estimated \$400,000 per day of economic benefits, thanks to the avoided costs of detouring traffic.<sup>3</sup>

But bundling limits a city to working with large firms that can offer the full range of services. Sometimes separating out each component of a project means that the city gets more competitively priced bids and higher-quality outcomes because the city is able to select the most qualified vendor for each job and structure each contract to best align incentives.

Building internal capacity for managing the vendors and ensuring that the combined product achieves the procurement’s goals are critical to this approach. For example, in re-procuring its new Child Welfare System technology, California decided to break down what would have been a monolithic, thousand-page RFP into a series of smaller RFPs, with support from Code for America and the General Services Administration’s 18F digital services office. Instead of having to rely on a single large firm that can take the entire project, the state plans to select the best vendor for each specific aspect of the project and build management capacity at the state to ensure that the various modules sum up to a product that meets the users’ needs.

**Avoiding “cost type” contracts:** Cost-reimbursement contracts, time-and-materials contracts, and labor-hour contracts allow governments to purchase goods and services in situations in which it is hard to determine how much work or material will be necessary. While these types of contracts can be appropriate in certain scenarios, including emergencies and R&D efforts, they pose a significant risk that government will overspend resources. They should be transitioned to fixed-

price or performance-based contracts as soon as there is greater clarity about the resources needed to accomplish the task.

**Problem-based procurement:** One relatively new approach that governments are using when they are unclear about the optimal solution to a problem is to provide a description of the problem and to seek ideas for solving that problem through what's called a problem-based procurement. This approach is in stark contrast to the traditional practice of specifying requirements in as much detail as is possible, which can trap governments into old ways of doing things. This problem-based approach is particularly appropriate when the key challenge is to discover the right idea—as is often the case with technology or design. San Francisco, for example, created the Startup in Residence (STIR) program, in which government agencies identified challenges related to housing, transportation, the environment, and public safety. Competitively selected start-ups were then embedded in agencies for 16 weeks to create a new product or service, usually involving a software solution or a mobile app that solved a particular challenge posed by the agency. Start-ups then have the possibility of entering into a paid contract with the agency. Since its initial launch in 2014, STIR has been expanded to include Oakland, San Leandro, and West Sacramento. Current projects include improving the process of recruiting foster parents using a mobile app with the San Francisco Human Services Agency; enabling city engineers and inspectors to record building-safety assessments after an earthquake with the San Francisco Public Works Department; and helping West Sacramento police officers connect homeless individuals to resources and social services, including vouchers for transportation, food, or shelter, using a mobile app.

**Pay for success (PFS):** PFS contracts make a portion of payment contingent on outcomes. Governments like PFS contracts for three primary reasons: they can help reorient their budgets toward preventive services and away from remedial costs; they diminish the chance that ineffective programs will continue to receive funding; and they can provide a framework for multiyear collaboration with service providers to reengineer systems to improve results. In the most rigorous PFS contracts, there is often a multiyear delay between when services are delivered and when outcomes can be assessed and payments made. In these cases, private investors provide the operating capital for the service

provider in exchange for the rights to the future success payments—a structure known as a “social impact bond.” To date, two of the cities we have helped have launched PFS contracts backed by social impact bonds. In Denver, this approach is being employed to provide supportive housing to 250 chronically homeless individuals (see case study). In Chicago, a PFS contract is being used to expand high-quality preschool education. We are currently working on PFS projects with four additional cities in policy areas ranging from addiction treatment to green

### Case study: Denver’s homelessness pay-for-success contract

Governments often find it challenging to invest in preventive services even when they know that doing so will save money down the road. Several cities around the country are experimenting with PFS contracts that allow them to reorient their spending toward prevention while also gathering rigorous evidence about the effectiveness of these preventive investments. In Denver, for example, chronically homeless individuals are costing taxpayers more than \$29,000 per person on average in jail days, police encounters, court costs, and in detox, ER, and other medical expenses. The city launched an initiative in February 2016 to provide 250 new housing units for chronically homeless individuals, plus supportive services, including intensive case management, crisis intervention, substance-use counseling, and mental-health treatment. These services would be paid for with the savings that result from stabilizing the individuals’ lives.

The housing and services are being financed using a combination of \$15 million of federal dollars and \$8.7 million from private investors. The private investors will be repaid by the city to the extent the program is successful. If the program reaches its targets—a 35% reduction in jail days and 83% housing stability (that is, participants spend at least one year in housing), the investors would be repaid approximately \$9.5 million. Payments would be reduced if these outcome targets are not achieved.

Across the country, the PFS approach is being applied to a wide range of policy areas, including prisoner reentry, prenatal care, workforce development, early education, and child welfare. By bringing together government agencies, service providers, and other community groups in a multiyear outcomes-focused effort to improve results, the PFS model creates a framework for sustained collaboration that is hard to achieve with more typical approaches to contracting for social services.

infrastructure. While some cities have successfully made use of the PFS/social-impact bond approach, others have found it challenging. In particular, some projects that cities have explored would have primarily generated budgetary savings for the state or county government, and it has been hard to persuade other levels of government to collaborate with cities in these PFS efforts. For this reason, we mostly focus our PFS work on projects initiated by state governments. Our state government partners have launched five PFS projects to date, with another five likely to launch this year.

**Agile procurement:** For technology procurements, in particular, deliverables often need to be developed through an iterative product-development phase with input from various stakeholders, including the end users. Agile procurement allows for close collaboration and provides the vendor with the opportunity to test prototypes on users throughout the development process in order to get critical, ongoing feedback. While the agile approach is especially useful for software development, key parts of this model—specifically, iteration and user testing—can improve outcomes of other types of procurements as well.

**Use past performance to help select future vendors and to inform the decision to renew or extend contracts:** Connecting past performance to future contracting decisions, including contract renewals and opportunities for multiyear contracts, is essential to incentivize vendors and will help cities allocate limited resources to the most effective contractors.

**Piloting:** When appropriate and feasible, a pilot phase can be built in to the procurement to test the good or service for viability and cost and to provide the contractor the opportunity to refine the product or service in collaboration with the relevant city officials and end users before scaling. The pilot phase can even include multiple vendors, with the best to be selected at the end of the pilot for a full contract.

*Track progress of contractors in achieving goals.* Cities need to measure their progress in achieving their goals during the course of contracts. Ideally, these measurements would use objective administrative data, though cities will sometimes need to rely on data provided by the contractors as well. The city may also establish a current performance baseline to focus attention on achieving improvements relative to the baseline. Where multiple contractors are working toward similar goals,

the government can develop an evaluation system that facilitates comparison of outcomes across contractors to determine which contractors are most effective. (Such a system, of course, would need to account for differences in the populations served and other factors that can influence the observed outcomes.)

*Employing active contract management.* Once the city has established a system for tracking performance, it needs to use the data as a management tool. The program or procurement staff should regularly monitor key outcomes and implementation data sourced from the city and the contractor to detect in real time if there are problems, as well as opportunities for improved performance. In social service contracting, we recommend an active contract-management approach that involves four steps:

1. Identify the entire target population and measure and track outcomes for the population on a regular basis. For example, the target population might be all chronically homeless individuals in the city, or all youth who failed to complete high school. The outcome might be defined as the fraction of the target population that is stably housed within six months or the percentage who are employed.
2. Make strategic decisions about which individuals to match to which services, and set up a system to make the connections happen. Rather than simply funding service providers to provide slots in their programs, assign them specific individuals to recruit to their program and serve.
3. Hold high-frequency (typically, weekly or monthly) meetings between the city official responsible for managing the contract and the service provider to review data on whether the referral process is working and on how individuals are progressing through the program. Use these meetings to troubleshoot, to reengineer processes to improve results, and to ensure that individuals are not falling through the cracks.
4. On an annual basis, assess whether the program models are working by examining whether population outcomes are improving and whether individuals referred to services are experiencing better results than equivalent individuals who were not referred to services, and by comparing results across service providers.

We have been working with several cities, including Seattle (see case study), to set up this approach to managing social services. To date,



## Case study: Managing Seattle's homeless-services contracts to drive down homelessness

In November 2015, Seattle mayor Ed Murray declared a state of emergency because of the homelessness crisis facing his city. Even though Seattle had increased its spending on homeless services from \$38 million in 2011 (in 2016 dollars) to \$50 million in 2016, the number of unsheltered individuals has continued to rise in Seattle, growing by an estimated 13% per year during the same period, as measured by the Seattle/ King County Coalition on Homelessness One-Night Count.

The city's current spending is allocated across more than 60 service providers, many of which have multiple contracts with the city (the total number of contracts is 180). Due to the large volume of contracts, contract managers with the city and the providers are occupied full-time with perfunctory transactions, such as invoicing, modifications, renewals, and preparing for audits. This leaves little time for tracking performance and intervening to improve results. Moreover, lack of reliable data on the homeless population and the performance of programs limits the city's ability to develop policies that are effective in tackling the problem. While these may appear to be low-level, administrative issues, they can result in real problems on the ground as service providers are focused on conforming to requirements rather than being responsive to the needs of the homeless population.

As part of a pilot project to reform its contracts with five homeless-services providers, Seattle is consolidating contracts to free up staff time to focus on improving outcomes and to increase flexibility for service providers to shift funding between programs based on need without requiring amendments. The city will also make these contracts more performance-focused. In collaboration with providers, the city is implementing a new set of key outcomes and process metrics. For example, instead of measuring how many showers are provided at a day center or how many beds are filled at an emergency shelter, the city and providers will track the number of individuals who are placed into stable housing. To help interpret the performance of programs and capture homelessness trends, characteristics of individuals served by each program are recorded as well. The city has also designed strategies to improve the quality of data. By streamlining reporting requirements, the city is reducing the burden on providers and allowing them to focus on providing high-quality data for the most critical metrics.

Finally, the city's contract managers will be using data to collaborate more effectively with providers. During monthly check-ins with providers, they will review key outcome and process metrics and then come up with plans to improve outcomes. In addition, quarterly meetings between the city and service providers focused on a given target population (e.g., single adults in need of emergency shelter) will provide a forum for discussing the systemwide progress in improving outcomes for specific target populations.

the best example of this approach is from a PFS project we helped New York State launch in 2013. This program connected individuals being released from state prison with job readiness and placement services delivered by the Center for Employment Opportunities (CEO). The state is using predictive analytics to identify the individuals with the highest probability of reoffending and then referring those individuals to CEO. The percentage of referred individuals who show up for job training is tracked at a high frequency, and weekly meetings between the state agency and CEO are used to figure out how to improve enrollment rates. On the back end, the city is assessing the effectiveness of services using a randomized controlled trial.

## IV. Elevating the Status of Procurement Work

Successful acquisition of goods and services from the private sector is essential to almost everything that a city government does. As a result, procurement and contract management are among the most important roles performed in city agencies—and governments need to treat these tasks as the high-value activities that they are.<sup>4</sup>


We have already emphasized our view that there should be a high-level official in city hall with the responsibility for identifying and managing the most critical procurements. But other steps need to be taken as well. Technology can greatly reduce the administrative burden of paying invoices and processing change orders, freeing up time for contract managers to do active performance-based contract management. As expectations increase for what procurement staff members should be doing, the skill set of employees in these positions needs to be

upgraded through training and recruitment. Most importantly, when procurement-related responsibilities are viewed as high-status, the most talented individuals entering city government want to work in this area.

There are some initial signs that this is starting to happen. Last year, a top graduating student from the Harvard Kennedy School accepted a job offer from us to work at the Government Performance Lab. A few days later, she came back and asked if she could back out to take a job in charge of IT procurement in a city government. We were thrilled. If we all start losing talented individuals to city hall procurement teams, we will know that we have achieved our mission.

## Endnotes

1. We learned how effective the “Which procurements are you losing sleep over” question can be from shadowing Beth Blauer (who leads the Center for Government Excellence at Johns Hopkins University) on What Work Cities initial site visits.
2. The categories of purchases described in Tables 1 and 2 are based on analysis of Boston’s 200 largest contracts, which constitute 76% of total contracts awarded. For technology and human-services contracts, however, all of the city’s contracts were analyzed, even those outside the 200 largest.
3. “The Role of Design-Build Procurement,” NYU Rudin Center for Transportation Policy and Management, June 2015.
4. Our thinking on this has been heavily influenced by Steven Kelman, “Strategic Contracting Management,” in *Market-Based Governance: Supply Side, Demand Side, Upside, and Downside*, eds. John D. Donahue and Joseph S. Nye, Jr. (Washington, D.C.: Brookings Institution, 2002).



"Today's urban citizens demand effective, efficient government services. They are less tolerant of bureaucratic dysfunction. Technology is transforming the world; government is no exception. And the experiences that today's urbanites have with technology, from the iPhone to Uber, set a high service-delivery bar that citizens expect government to meet. Meanwhile, problems of success, such as uneven economic advancement and soaring rents in many cities, pose challenges to future urban growth."

*Aaron Renn*