

The Street View of Property

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Parking on public streets is scarce. The current allocation system for parking spots based on the rule of capture coupled with low parking fees creates a tragedy of the commons scenario. The misallocation of parking has consequences for commerce, for access to public spaces, and for pollution and congestion. Municipalities have not widely adopted the solution that economists propose to solve this scarcity problem: increase the price. Politics aside, the reluctance of municipalities to do so may be explained by the unique nature of public property as reflected in well-rooted legal and societal constraints. This unique nature helps explain, for example, municipalities' ban on software applications (apps) allowing occupants of curbside parking to "sell" their spots to would-be occupants in Boston or San Francisco. While the ban may be justified, the unique nature of public property is not incompatible with some well-designed, efficiency-oriented policies, as this Article will put forward.

This Article distills the legal constraints on curbside parking and any other public property management by drawing on case law regarding parking meters and public resources managed in trust for the public, and decisions by municipalities regarding parking apps and privatization of parking meters. These constraints include, among others, that public property shall not be used to raise revenue, although placing a price on it may pursue other regulatory aims consistent with public use, or that municipalities shall not lose control of the public spaces dedicated to curbside parking. At a normative level, the above constraints provide a framework for assessing policies regarding curbside parking and, by extension the management of any other public property resources. At a positive level, the Article proposes ways to make efficiency compatible with the principles guiding the management of public property. It analyzes whether, and to what extent, the efficiency-oriented policies that would translate into a price increase—variable pricing, tradable property rights, and privatization—clash with those principles constraining the monetization of public property. In addition, the Article concludes by pointing to other situations where its analytical framework could be extended, such as other uses of public streets (for instance, use of public bus stops by shuttle-buses of private companies) or existing practices in connection to public resources (for instance, semi-privatization of beaches).

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INTRODUCTION

Parking on the street is an everyday struggle for many Americans. During business hours, quests for elusive and much coveted spots take place in downtowns and other commercial areas. After the evening commute, this battle moves to densely populated residential neighborhoods. Sometimes a vacant spot is found right away, but often precious time is lost. According to some estimates, city dwellers spend as many as four years of their lives looking for parking.¹ In a vicious circle, the resulting extra driving increases congestion and pollution, two of the greatest maladies of urban living. Parking woes are a familiar illustration of scarcity: a mismatch between overwhelming demand and insufficient supply.

For governments, managing parking is no small challenge.² A parking space is itself public property, and is instrumental in promoting the use of other public property, such as parks. Indeed, by providing residents access to public spaces, parking facilitates a city's democratic community.³ Parking is also instrumental to everyday activities, like getting a license from the city council, picking up a prescription at the drugstore, or going to work.⁴ And, of course, parking policy has an impact on traffic congestion. Extra driving to find parking generates congestion and, thus, costs time and causes unnecessary pollution. Municipalities face a delicate juggling act in balancing demands on parking from advocates for commerce, politics, the environment, and basic fairness.⁵ These competing demands reflect in turn the unique nature of public streets. Far from simply being property owned by a public entity, streets are public property in a different and much more fundamental sense. Streets are held by municipalities on behalf of the public for the pursuit of public good; a characterization that is not inconsequential.⁶

1. Wim Elfrink, *The Smart-City Solution*, MCKINSEY & CO. 2 (Oct. 2012), <https://www.mckinsey.com/industries/public-sector/our-insights/the-smart-city-solution>. More moderate estimates show that a city dweller in the U.K. spends 106 days of her life looking for parking. *Motorists Spend 106 Days Looking for Parking Spots*, TELEGRAPH (May 27, 2013, 9:25 AM), <http://www.telegraph.co.uk/motoring/news/10082461/Motorists-spend-106-days-looking-for-parking-spots.html>.

2. See *Aparkalypse Now: The Perilous Politics of Parking*, ECONOMIST (Apr. 6, 2017), <http://www.economist.com/news/leaders/21720281-average-car-moves-just-5-time-improve-cities-focus-other-95-perilous>.

3. SARAH MARUSEK, POLITICS OF PARKING: RIGHTS, IDENTITY, AND PROPERTY 6 (2012).

4. See, e.g., Jeremy Dalmas, *San Francisco Program Aims to Make Fines More Fair for the Poor*, NPR (Apr. 13, 2017, 4:33 PM), <http://www.npr.org/2017/04/13/523269628/san-francisco-program-aims-to-make-smaller-fines-more-fair-for-poor>. This is the story of Echo, a low-income worker who needed her truck to get to different jobs, but whose truck was impounded after she accumulated parking fines for expired meters. *Id.*

5. See, e.g., Gregory Pierce & Donald Shoup, *SFPark: Pricing Parking by Demand*, ACCESS, Fall 2013, at 20, 23. Pierce and Shoup describe the variable pricing for parking program in San Francisco, which aims to reduce congestion by ensuring that there are vacant spots at all times. *Id.* at 25. This aim, they point out, conflicts with the parking policy goal of increasing turnover to ensure commerce. *Id.* at 27.

6. The nature of public property is complex. Carol Rose calls it a "conundrum." Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 711 (1986).

Pricing out demand by least-valuing users, a standard economic response to scarcity, has not been widely adopted by municipalities, the public entities entrusted with the daunting task of regulating parking.⁷ Sharing-economy initiatives have failed to gain the trust of municipalities as illustrated by the Boston and San Francisco bans of software applications (“apps”) allowing occupants of curbside parking to “sell” their spots (or, more precisely, their rights to use the spot) to would-be occupants.⁸ Attempts to improve management by means of privatization have also fallen short of initial expectations as illustrated by the privatization of parking meter management in Chicago.⁹ Public choice explanations aside, municipalities may be shunning these management tools—pricing, trade in parking spots, and privatization—to mitigate parking scarcity because of legal constraints.

As Part III describes, five recurring legal principles constrain the management of curbside parking:¹⁰ (1) the price of curbside parking shall never exceed the cost of providing it; (2) pricing shall not be used to raise revenue, although it may pursue a regulatory aim consistent with other principles; (3) any revenue obtained shall be earmarked for use in connection with curbside parking or related needs; (4) municipalities shall not lose control of the public spaces dedicated to curbside parking; and (5) alienation of curbside parking by the municipality is not admissible unless partial and accompanied by either provision of substitutes or proof of enhancement of the goals being served. These legal constraints also reflect social attitudes. The public shows mistrust of monetization of public property by either the municipality or private actors. These legal constraints offer a framework to guide and evaluate the management of any public property.

When considering the above legal constraints, municipalities often prefer to err on the side of access and fairness rather than on the side of efficiency. As long as everyone is able to afford parking on Main Street in a public space

7. Donald C. Shoup, *Buying Time at the Curb*, in *THE HALF-LIFE OF POLICY RATIONALES: HOW NEW TECHNOLOGY AFFECTS OLD POLICY ISSUES* 60, 65 (Fred E. Foldvary & Daniel B. Klein eds., 2003).

8. David Streitfeld, *Parking Apps Face Obstacles at Every Turn*, N.Y. TIMES (June 10, 2015, 6:29 PM), <http://bits.blogs.nytimes.com/2015/06/10/parking-apps-face-obstacles-at-every-turn/>.

9. Max Fisher, *Why Does Abu Dhabi Own All of Chicago's Parking Meters?*, ATLANTIC (Oct. 19, 2010), <https://www.theatlantic.com/business/archive/2010/10/why-does-abu-dhabi-own-all-of-chicago-s-parking-meters/339805/>; Fran Spielman, *Parking Meter Deal Keeps Getting Worse for City as Meter Revenues Rise*, CHI. SUN TIMES (May 14, 2018, 7:53 PM), <https://chicago.suntimes.com/politics/parking-meter-deal-keeps-getting-worse-for-city-as-meter-revenues-rise/>; see also *infra* Subpart III.A.

10. Regarding parking, see *City of Birmingham v. Hood-McPherson Realty Co.*, 172 So. 114 (Ala. 1937); *In re Op. of the Justices*, 8 N.E.2d 179 (Mass. 1937); *Ex parte Duncan*, 65 P.2d 1015 (Okla. 1937); and *William Laubach & Sons v. City of Easton*, 32 A.2d 881 (Pa. 1943). In relation to the public trust doctrine, see *Ill. Cent. R.R. Co. v. Illinois*, 146 U.S. 387 (1892); *Lake Mich. Fed'n v. U.S. Army Corps of Eng'rs*, 742 F. Supp. 441, 445 (N.D. Ill. 1990); *Nat'l Audubon Soc'y v. Superior Court*, 658 P.2d 709 (Cal. 1983); and *Kootenai Envtl. All., Inc. v. Panhandle Yacht Club, Inc.*, 671 P.2d 1085 (Idaho 1983). Other decisions analyzed are *In re Avella v. City of New York*, 80 N.E.3d 982 (N.Y. 2017); *Friends of Van Cortlandt Park v. City of New York*, 750 N.E.2d 1050 (N.Y. 2001); and *Union Square Park Coal., Inc. v. N.Y.C. Dep't of Parks & Recreation*, No. 102734-12, 2013 WL 308912 (N.Y. Sup. Ct. Jan. 25, 2013), *order rev'd*, 966 N.Y.S.2d 669 (N.Y. App. Div. 2013).

ultimately managed by a public entity, wasted time as well as other indicia of inefficiency are lesser evils. This Article argues that the management of public property requires attention to goals and limitations that standard economic-efficiency accounts do not capture. However, a solution to curbside parking scarcity is also needed. To identify that solution, the Article analyzes whether these constraints are intrinsically incompatible with certain responses to scarcity of curbside parking based on efficiency, namely variable pricing, tradable property rights, and privatization.

Each of these economics-oriented responses would result in a price increase of curbside parking (currently free or subject to payment of a small per hour fee).¹¹ Consequently, fewer drivers will be willing to park and the less affluent may find themselves priced out of curbside parking. Variable pricing programs, such as the ones already implemented in certain areas of San Francisco and Boston, hinge on parking fees fluctuating upwards when demand peaks. Prices of tradable property rights, such as rights to use a parking spot offered for sale via apps, were generally higher than parking fees.¹² In addition, parking fees still need to be paid on top of the app price if the right to use refers to a metered spot. Last, if privatization brings onboard a for-profit corporation, profit maximization and the initial pressure to break even are certain to lead to an increase in parking fees, as illustrated by the outsourced management of parking meters in Chicago in 2008.

The better and cheaper public transportation is, the lesser impact increases in parking fees have in terms of access and fairness. With few exceptions, public transportation networks in most American cities do not meet the bar. Jobs and homes are further and further away from each other¹³ and not necessarily connected with public transportation. But these concerns for access and fairness should not make us dismiss the economic tools to deal with scarcity. Both can be compatible. If parking revenue increases translate into better funding for public transportation, the impact on fairness could be largely offset.

But not all economic recipes to deal with parking scarcity can be compatible with the constraints that managing curbside parking is subject to because of its nature as public property. The best public transportation would not be enough to make privatization or peer-to-peer trading of parking spots

11. In Boston, for instance, the fare for curbside parking did not increase for twenty years prior to 2011. Bob Shaffer, *Boston to Test Higher Parking Meter Prices as Part of Pilot Program*, WBUR NEWS (Dec. 1, 2016), <http://www.wbur.org/news/2016/12/01/boston-dynamic-pricing-parking-meter-pilot-program>.

12. Brian Ng, *These Apps Are Trying to Reinvent Parking*, BUSINESS INSIDER (Sept. 5, 2014, 2:07 PM), <https://www.businessinsider.com/apps-are-trying-to-reinvent-parking-2014-9>.

13. ELIZABETH KNEEBONE & NATALIE HOLMES, BROOKINGS, *THE GROWING DISTANCE BETWEEN PEOPLE AND JOBS IN METROPOLITAN AMERICA* 10 (2015), https://www.brookings.edu/wp-content/uploads/2016/07/Srvy_JobsProximity.pdf. Living farther away from the workplace is a trend that only seems to increase in cities like San Francisco, Philadelphia, or Bakersfield. See Elizabeth Kneebone & Natalie Holmes, *The Growing Distance Between People and Jobs in Metropolitan America*, BROOKINGS (Mar. 24, 2015), <https://www.brookings.edu/research/the-growing-distance-between-people-and-jobs-in-metropolitan-america/> (scroll to the interactive map and use the “Search for a metropolitan area to map” feature to locate information for cities such as San Francisco, Philadelphia, and Bakersfield).

compatible with legal and societal constraints. First, privatization of parking meters in Chicago amounts to a handover of curbside control to private entities. Second, prices for the exchanges using parking apps are not linked to, let alone capped by, the cost of providing parking. The app prices were based on the individuals' opportunity costs, not on the societal costs.

Conversely, variable pricing may be compatible with legal and societal constraints if an adequate public transportation network is in place and the following requisites are met: (1) fees are calculated so as to target the occupancy rate that is expected to achieve goals beneficial for the public, such as reducing congestion, reducing pollution, and increasing the turnover frequency; (2) fees are based on the social costs of parking—among others, meters, enforcement, or congestion; (3) part of the revenue is channeled into improving public transportation to and from the areas where variable pricing is implemented. San Francisco offers a good example of proper variable pricing framework.

This Article proceeds as follows. Subpart I.A analyzes the central role of parking in urban America. Subpart I.B examines current allocation of curbside parking based on a first-in-time rule coupled with low fees and time-limits. Subpart I.C describes the costs and externalities resulting from such an allocation system. Part II surveys case law on parking meters as well as on other publicly-owned resources and identifies the principles guiding the management of public property. Part III analyzes whether the solutions an economist would propose to solve parking scarcity and the ensuing congestion could be made compatible with the principles distilled in Part II. Part III does so by closely examining the privatization of parking meter management in Chicago, the bans of curbside parking apps in San Francisco and Boston, and the variable pricing in place also in San Francisco and Boston. The Article concludes by suggesting new avenues for research on the legal principles constraining the management and monetization of public property in other contentious cases, such as the use of San Francisco's public bus stops by Silicon Valley companies' buses and the semi-privatization of beaches by surfers.

I. PARKING: A CITY'S NIGHTMARE

A. A DIFFICULT BALANCE TO STRIKE: FAIRNESS VS. ECONOMIC DEVELOPMENT

When managing curbside parking, a municipality needs to balance several, often conflicting goals.¹⁴ Curbside parking is instrumental for commerce, getting to work, getting services, and even for democratic participation.

Municipalities may resolve to implement a free but time-limited curbside parking area to please businesses by enhancing commerce by increasing the

14. Even private developers dealing with parking have to balance different goals when deciding whether to charge for parking and how to account for the positive effects that parking may have for the commercial retailers in an area. Harold Demsetz, *The Exchange and Enforcement of Property Rights*, 7 J.L. & ECON. 11, 14–15 (1964).

number of people visiting the downtown area. Enhancing commerce has a clear economic dimension, but commerce is also part of our socialization experience.¹⁵ But beyond enhancing commerce, the municipality must take into account that curbside parking is instrumental to participation in the life of a municipality.¹⁶ Parking has been described as a “site of law in the everyday in which democracy flourishes.”¹⁷

The relevance of curbside parking comes from its significance for mobility, which in turn is central to personal fulfillment in modern society.¹⁸ With few notable exceptions (for example, New York City and, albeit to a lesser extent, San Francisco), living in many American cities and towns without a car seriously limits the possibilities for personal enrichment and social interaction. In most cities, you need a car and a place to park it. Even in those cities with public transportation networks, gentrification may push those who work low-paying jobs further away from their places of employment, making cars even more central.

Further elaborating on the importance of cars, only 8% of households in the nation do not have a vehicle.¹⁹ Not surprisingly, this figure is not uniformly spread across the population. Households with “an annual income of less than \$25,000 are almost nine times as likely to be a zero-vehicle household than those with incomes greater than \$25,000.”²⁰ The percentage of households without a car is higher in certain cities. In San Francisco, 31.24 % of the households do not own a car.²¹ Given these figures which illustrate that the poorest do not need a parking spot, cheap curbside parking has been criticized given the congestion and pollution it causes. First, other instrumental things for driving, such as gas, are not subsidized for the poor.²² Second, cheap publicly-provided parking implies that everyone, car owner or not, has to subsidize drivers because tax-

15. See Rose, *supra* note 6, at 723 (“[C]ustomary doctrines suggest that commerce might be thought a ‘comedy of the commons’ not only because it may infinitely expand our wealth, but also, at least in part, because it has been thought to enhance the sociability of the members of an otherwise atomized society.”).

16. For scholarship on public spaces such as parks or town squares enhancing participation in the local political life, see generally Sarah Schindler, *The “Publicization” of Private Space*, 103 IOWA L. REV. 1093 (2018).

17. MARUSEK, *supra* note 3, at 5.

18. Setting aside Parking Day (a global event that began in 2005 during which metered parking lots are transformed into, for instance, locations for art exhibits or health clinics), while participation in the community life does not physically happen within the parking spot, it cannot happen without access to it. In fact, Marusek recognizes our dependence upon cars and the idea of parking as an extension of ourselves. *Id.* at 25. For an account of Parking Day, see Michael Kimmelman, *Paved, but Still Alive*, N.Y. TIMES (Jan. 6, 2012), <http://www.nytimes.com/2012/01/08/arts/design/taking-parking-lots-seriously-as-public-spaces.html>.

19. U.S. DEP’T OF TRANSP., BUREAU OF TRANSP. STATISTICS, NHTS: HIGHLIGHTS OF THE 2001 NATIONAL HOUSEHOLD TRAVEL SURVEY 6–9 (2001), https://www.bts.gov/sites/bts.dot.gov/files/legacy/publications/highlights_of_the_2001_national_household_travel_survey/pdf/entire.pdf.

20. *Id.*

21. *Vehicle Ownership in U.S. Cities Data and Map*, GOVERNING STS. & LOCALITIES, <http://www.governing.com/gov-data/car-ownership-numbers-of-vehicles-by-city-map.html> (last visited Jan. 19, 2019).

22. See DONALD C. SHOUP, *THE HIGH COST OF FREE PARKING* 530 (2017).

payers foot the bill. Hence, low income individuals, who are less likely to have a car, are paying the costs of medium and high-income drivers.²³ Finally, more expensive fees for publicly-provided parking will generate revenue that could actually benefit low income individuals.²⁴

At first glance, the figures on car ownership can be read as mitigating the concerns about fairness in the allocation of parking.²⁵ However, as many residential neighborhoods close to downtowns become gentrified, low and middle-income residents are pushed further away and cars become more important to them. While more than 30% of households in San Francisco do not own cars, the figure is far lower for the wider Bay Area, at 10% or less.²⁶ Those living further away are forced to either quit their jobs or embark on strenuous commutes²⁷ that sometimes end with an agonizing search for curbside parking (off-street parking being unaffordable on a daily basis). Stories abound of the growing distance between jobs and residences and time of commutes. Silicon Valley restaurateurs struggle to find waiters and waitresses because housing is too expensive in the area and their commutes—often with no public transportation available—are too long.²⁸ In San Francisco, Echo Rowe, an employee in a low-paying job was forced to move her truck from one spot to another during breaks, only to accumulate \$2,000 in parking fines anyway, in addition to the truck being towed.²⁹ The towing company sold the truck because the owner could not pay to get it out of the impoundment lot, but she still owed the municipality \$1,600, an amount she could not possibly pay without transportation, even while working three jobs (with no benefits).³⁰

If the only goal behind curbside parking polices were to increase vehicle turnover, therefore ensuring that businesses get as many clients as possible, a higher price per hour for parking and a tight time-limit may be what is needed. But the fairness dimensions—such as the payment ability of those who need parking for work—may counsel against it. Furthermore, political economy may

23. See *id.* at 532 (“[F]ree curb parking is *not* an effective way to help the poor, especially because many of the poorest people cannot afford cars.”).

24. See *id.* at 534 (discussing how money gleaned from higher parking rates can be used to finance major public improvements).

25. For a critique of access justice regulations, see generally Omri Ben-Shahar, *The Paradox of Access Justice, and Its Application to Mandatory Arbitration*, 83 U. CHI. L. REV. 1755 (2016).

26. U.S. CENSUS BUREAU, *2015 ACS 1-Year Estimates*, <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2015/1-year.html> (last updated Nov. 17, 2016).

27. See KNEEBONE & HOLMES, *supra* note 13.

28. Nicole Perloth, *How Tech Companies Disrupted Silicon Valley's Restaurant Scene*, N.Y. TIMES (Sept. 18, 2016), <https://www.nytimes.com/2016/09/19/technology/how-tech-companies-disrupted-silicon-valleys-restaurant-scene.html>. For an account of the challenges of commuting via public transportation in the Bay Area, see Conor Dougherty & Andrew Burton, *A 2:15 Alarm, 2 Trains and a Bus Get Her to Work by 7 A.M.*, N.Y. TIMES (Aug. 17, 2017), <https://www.nytimes.com/2017/08/17/business/economy/san-francisco-commute.html>.

29. Dalmas, *supra* note 4.

30. *Id.*

counsel against it as people have often rallied against any surge in parking prices.³¹

B. CURBSIDE PARKING ALLOCATION: THE FIRST-IN-TIME RULE AS APPLIED TO CURBSIDE PARKING

Curbside parking allocation is a great contemporary example of the rule of capture for wild animals. Curbside parking is normally open to everyone but, for obvious reasons, cannot be used by everyone at the same time.³² As a result, allocation rules are necessary. In general, the first to get into a vacant parking spot gets it.³³ The need to occupy the parking spot also approximates the first-in-time rule as applied to curbside parking to the rule of capture illustrated by Judge Tompkin's opinion in the well-known case *Pierson v. Post*.³⁴ After all, the first to drive into a vacant spot gets it even if a second driver had been driving in circles for a longer time or has a more pressing need for parking. There is no legal remedy available to the second driver, much as there was none for Post, who had been chasing the fox with hounds.³⁵

However, there are qualifications to the rule of capture when it comes to curbside parking. For instance, once a car is backing into a parking spot, social norms dictate that another car will not enter head on to prevent the car backing from getting the spot.³⁶ Also, the driver of a car idling double-parked in wait of the first vacant spot, is generally given preference by fellow drivers. This particular social norm rewards the patience of the driver in the idling car even if the waiting may create congestion. Note that a car idling is easily observable by other drivers, as opposed to one driving in circles, and this allows for a smooth enforcement of the rule. To some extent, the qualifications explained in this

31. Don Behm, *Proposed Parking Fees in Milwaukee County Parks Draws Protests*, J. SENTINEL (Milwaukee) (Feb. 7, 2018, 1:41 PM), <https://www.jsonline.com/story/news/local/milwaukee/2018/02/06/proposed-parking-fees-milwaukee-county-parks-draw-protesters-meeting/308437002/>; Nick Wilson, *Cal Poly Employees Protest Increased Parking Fees*, TRIBUNE (San Luis Obispo) (July 31, 2014, 5:55 PM), <http://www.sanluisobispo.com/news/local/education/article39492741.html>.

32. Elinor Ostrom described parking as a common pool resource where the resource units appropriated are the parking spots. ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* 32 (1990).

33. This applies to curbside parking. Allocations of other forms of parking follow different rules or norms. For example, you may only let your friends park in your driveway or, in residents-only parking areas, the first-in-time principle may apply, but only those who possess a residential parking permit can be first. Parking—in its broadest sense encompassing all forms of parking, public or private, in-street or off-street—could be labeled as a semi-commons, albeit a markedly complex one. The term semi-commons is used to refer to a resource managed combining both private property and communal property. Henry Smith's ultimate example of semi-commons is the medieval open field in Northern Europe, where grazing arrangements were reached within a system of land ownership combining private lands with communal ones. Henry E. Smith, *Semicommon Property Rights and Scattering in the Open Fields*, 29 J. LEGAL STUD. 131, 132 (2000). In parking, the commons would be represented by curbside parking, while private property would consist of property rights over home garages or in public garages. Very different regimes govern each of these forms of parking.

34. 3 Cai. 175 (N.Y. Sup. Ct. 1805).

35. *Id.* at 177.

36. Richard A. Epstein, *The Allocation of the Commons: Parking on Public Roads*, 31 J. LEGAL STUD. S515, S524 (2002).

paragraph reflect concerns Judge Livingston articulated in his dissenting opinion in *Pierson v. Post*. According to Judge Livingston, after investing in the pursuit and coming close to the capture, a hunter has a right to the prey and anyone interfering should be considered a wrongdoer.³⁷

The ease of administering the first-in-time principle comes at a cost, failing to take into account the differential value to particular drivers of particular parking spots. It rewards those who can wait to find a parking spot.³⁸ It also fails to account for the amount of business those particular drivers may bring to the neighborhood. These considerations become more salient as parking becomes scarcer. Additionally, the first-in-time rule unaccompanied by any other regulation makes parking a commons and contributes to scarcity. If parking is free, demand will be higher than supply. In fact, Hardin in the celebrated article *The Tragedy of the Commons*, uses a curbside parking example.³⁹ During the Christmas shopping season, the municipality of Leominster (Massachusetts) let everyone park for free. They announced the decision by covering the plastic meters with a bag and a note that read: “Do not open until after Christmas. Free parking courtesy of the mayor and city council.”⁴⁰ Notwithstanding the ingenuity of the idea and even its political sharpness,⁴¹ making a scarce resource free results in overexploitation. While Hardin does not spell out what happened,

37. *Pierson*, 3 Cai. at 180–81 (Livingston, J., dissenting).

38. Parking difficulties similarly explain the existence of valets. Regulations are in place to prevent valets from parking on the curbside, further exacerbating the scarcity. Joel Grover & Matthew Glasser, *Nowhere to Park: Valets Caught Swiping Spots from Drivers*, NBC LOS ANGELES (May 24, 2016, 12:25 AM), <https://www.nbclosangeles.com/news/local/Los-Angeles-Valet-Service-Parking-Meters-LAPD-380533111.html> (“A City of Los Angeles Ordinance prohibits valets from parking customers’ cars in the ‘public right of way,’ which includes parking meters and on side streets. The ordinance says valet companies must prove to the city that they have space in parking lots for their customers’ cars.”); see also L.A., CAL., MUN. CODE ch. X, art. III, §§ 103.203, 103.203.1 (2018). The next step in the valet world were apps like Luxe or Zirx. Their business models consisted of picking up cars at the drivers’ destinations, parking the cars in the outskirts or wherever cheaper parking was available, and delivering the cars back to the drivers as requested. Consider, for example, Luxe, an app-based valet company from San Francisco. LUXE, <http://luxe.com/about> (last visited Jan. 19, 2019). Its hourly rates varied by city and depended on the price of street parking. Farhad Manjoo, *Luxe Valet App Eliminates the Headache of Finding a Parking Spot*, N.Y. TIMES (Nov. 17, 2014, 1:00 PM), <https://bits.blogs.nytimes.com/2014/11/17/valet-parking-apps-eliminate-the-headache-of-finding-a-spot/>. Luxe’s valet service was discontinued in early 2017, and Volvo acquired the startup. Greg Kumparak, *Luxe to End Door-to-Door Valet Service, Will Launch ‘New Service’ This Summer*, TECHCRUNCH (Apr. 26, 2017), <https://techcrunch.com/2017/04/26/luxe-to-end-door-to-door-valet-service-in-san-francisco-at-the-end-of-may/>; Ingrid Lunden, *Volvo Acquires Car Valet Startup Luxe to Boost Its Digital Services Business*, TECHCRUNCH (Sept. 8, 2017), <https://techcrunch.com/2017/09/08/volvo-acquires-car-valet-startup-luxe-to-boost-its-digital-services-business/>. For information on Zirx, see Kia Kokalitcheva, *Why This Valet Parking Startup Gave Up on Its Uber-Like Service*, FORTUNE (Apr. 11, 2016), <http://fortune.com/2016/04/11/why-zirx-ditched-consumer-facing-parking-service/>. Zirx now focuses on business to business services, such as moving, fueling, or washing cars for businesses like rental car companies. Megan Rose Dickey, *Mobility Services Platform Stratim, Formerly Known as Zirx, Sells to KAR*, TECHCRUNCH, <https://techcrunch.com/2018/02/07/mobility-services-platform-stratim-formerly-known-as-zirx-sells-to-kar/> (last visited Jan. 19, 2019).

39. Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1245 (1968).

40. *Id.*

41. *Id.*

it is likely that the measure translated into a lower turnover rate of patrons that damaged the businesses.

In cities where parking is undersupplied, the first-in-time principle needs to be modified. The most common way of allocating parking has been to add either a time-limit, a price, or both, on top of the first-in-time principle. The driver who finds a parking spot gets it, but she normally needs to be willing to pay some hourly price and/or be willing to move the car after the time limit has expired (for example, after two hours). The driver may still decide to overstay in the spot, but then the price ramps up because she may receive a fine if a parking control officer catches the overstay. Parking control officers in some municipalities marked the tires with chalk to fight against those gaming the system and not abiding by the time-limit by simply re-feeding the parking meter to re-start the time-limit.⁴² The driver who pays for four hours is not necessarily impacting municipal revenue, but the time-limit exists to ensure turnover. Beyond the interest of these anecdotes, the rigor with which municipalities enforce parking rules matters. If it is strictly enforced, one should forget about curbside parking for medical or dental appointments (the duration of which is as unpredictable as the copayment due) or for certain home services (such as the ones provided by plumbers or electricians). Strict enforcement has been made easier with recent technological innovations that allow for municipalities to enforce the limits easily using sensors.⁴³

The hourly price tends to be artificially cheap according to economists. If the price was based on the market, rather than the municipality-set price, prices would be much higher.⁴⁴ Today in many municipalities, the price to park is a nominal fee of one or two dollars per hour, which is far cheaper than the public garages nearby.⁴⁵ In congested New York City, of the more than four million parking spots, a mere 81,875 are metered parking.⁴⁶ In Fort Worth (Texas), the curbside hourly fee for parking on Houston St. (in downtown) is \$1.25.⁴⁷ In Boston, the city did not increase parking hour-fees for decades,⁴⁸ even though the number of automobiles and demand for parking obviously rose.

42. Gary Richards, *Roadshow: Chalk Sticks, Cameras and Other Ways to Enforce Parking Time Limits*, MERCURY NEWS (Oct. 25, 2013, 5:59 AM), <http://www.mercurynews.com/2013/10/25/roadshow-chalk-sticks-cameras-and-other-ways-to-enforce-parking-time-limits/>.

43. Rafael Avitabile & Gaby Rodriguez, *City Testing Validation Sensors on Hillcrest Parking Meters*, NBC SAN DIEGO (Mar. 25, 2017, 9:41 AM), <http://www.nbcsandiego.com/news/local/City-Testing-Validation-Sensors-on-Hillcrest-Parking-Meters-417088983.html>.

44. Gretchen Gavett et al., *Why It's Fair to Save a Parking Spot—for a Price*, HARV. BUS. REV. (July 28, 2014), <https://hbr.org/2014/07/why-its-fair-to-save-a-parking-spot-for-a-price>.

45. See Gregory Pierce et al., *Optimizing the Use of Public Garages: Pricing Parking by Demand*, 44 TRANSPORT POL'Y 89, 91 (2015).

46. Noah Kazis, *New York Has 81,875 Metered Parking Spots, and Millions of Free Ones*, NYC STREETS BLOG (Mar. 22, 2011), <https://nyc.streetsblog.org/2011/03/22/new-york-has-81875-metered-parking-spaces-and-millions-of-free-ones>.

47. *Parking Meters*, CITY OF FORT WORTH, <http://fortworthtexas.gov/parking/meters/> (last visited Jan. 19, 2019).

48. Patrick Doyle, *Why Parking in Boston Should Be More Expensive*, BOS. MAG. (Oct. 30, 2012, 4:11 AM), <http://www.bostonmagazine.com/2012/10/the-take-parking-in-boston/>.

Cheap curbside parking means that the cost of finding a parking spot involves both time and money. Only those that can afford to spend time circling may access a parking spot. Time may be a poor proxy for value. Those who cannot spend time searching for a spot, would have to find a spot in a public garage, use a valet service to do that for them, or take a taxi or ride-sharing service. Valets are normally required to park in places other than the curbside;⁴⁹ so a service that parks your car on the curbside by driving it around until one spot opens—like those who pay someone to stand for them in the Supreme Court line waiting to attend a hearing⁵⁰—is not lawful.

C. EXTERNALITIES FROM CURRENT ALLOCATION: CONGESTION AND POLLUTION

Searching for a parking spot not only costs time and money to the driver, but also to the rest of us. Where parking is cheap, drivers may park for a longer period than if it were more expensive, while others who have more pressing business and would be willing to pay more for parking cannot park and cannot spend the extra time waiting for a spot. This may translate into less commerce. But parking allocation has further effects on congestion where it is scarce and underpriced.

While in some areas oversupply of parking is the problem,⁵¹ in crowded downtowns, congestion as a result of parking scarcity and low prices presents a different challenge. Congestion is an externality that cities need to address. The extra congestion added by those searching for parking implies that those wanting to park are spending time but also that fellow drivers are stuck in traffic longer. While it may be efficient for the person searching for parking to spend time looking for a cheap spot from his individual viewpoint, the extra road time other drivers must spend as a result generates opportunity costs, such as lost business for the shops downtown.

Research shows that a city dweller may spend up to four years of their life looking for parking.⁵² In San Francisco, it was estimated that the total search

49. See, e.g., L.A., CAL., MUN. CODE ch. X, art. III, div. 8, §§ 103.203, 103.203.1 (2018).

50. Nina Totenberg, *Supreme Court to Lawyers: Hold Your Own Place in Line*, NPR (Oct. 6, 2015, 2:50 PM), <https://www.npr.org/sections/itsallpolitics/2015/10/06/446359539/supreme-court-to-lawyers-hold-your-own-place-in-line>.

51. Oversupply is a common problem for store parking lots in shopping malls. These lots are sized to accommodate a Thanksgiving-size volume of shoppers and, as a result, vast areas of land are asphalted, although most days only a small fraction of the space is used. Sarah Kobos, *So Many Shoppers, So Much Unused Parking*, STRONG TOWNS (Dec. 2, 2015), <https://www.strongtowns.org/journal/2015/12/1/so-many-shoppers-so-much-unused-parking>.

52. See Elfrink, *supra* note 1.

time for a parking spot per driver was 6.5 minutes.⁵³ Shoup found that people cruising in search of parking explains up to 30% of the traffic near UCLA.⁵⁴

Every extra car on the road slows traffic. The amount of additional driving—and the resulting additional congestion—is difficult to overstate: In one study of a fifteen-block stretch of New York City’s Upper West Side, motorists were estimated to “cruise” a total of 366,000 miles a year searching for street parking—farther, the study noted, than a one-way trip to the moon.⁵⁵

In addition, congestion means extra driving and extra driving means more vehicle emissions.⁵⁶ Transportation emissions are a serious threat.⁵⁷ They include, among others, greenhouse gases, volatile organic compounds, and particulate matter. Whether a city wants to be at the forefront of climate change policy or solve a local smog problem, it will need to tackle vehicle congestion. While cities have dealt with congestion through initiatives such as congestion pricing in the city centers,⁵⁸ or allowing only odd or even plate-numbered cars on certain days,⁵⁹ managing parking appropriately is also a good candidate to help with congestion.

A more expensive parking fee would reduce externalities but it will also result in affordability problems for those with less disposable income who, for example, may need to park to go to the doctor. Managing parking implies juggling the competing demands of commerce, political participation, fairness, and the population who is used to cheap parking. The conflict of managing parking runs even deeper when the municipality tries to tackle congestion as well as pollution.⁶⁰ For any economist, a high price is a natural candidate to address scarcity and its associated costs. However, the economist’s recipes to solving parking issues must take into account the principles that underlie public

53. SHOUP, *supra* note 22, at 288 (quoting Steve Rubinstein, *Auto Alternative / Car-sharing Program Can Free S.F. Drivers from Parking Hassles*, S.F. GATE (Mar. 9, 2001, 4:00 AM), <https://www.sfgate.com/news/article/Auto-Alternative-Car-sharing-program-can-free-2944037.php> (“You spend half of your life driving around looking for parking in this town, which is bad for your marriage.” (internal quotation marks omitted)); Donald C. Shoup, *Cruising for Parking*, 13 TRANSPORT POL’Y 479, 480 (2006).

54. Donald Shoup, *Cruising for Parking*, ACCESS, Spring 2007, at 16, 17.

55. Streitfeld, *supra* note 8.

56. The Environmental Impact Review of a parking structure at the University of California-Los Angeles concludes that each new parking spot imposes \$117 in external costs. SHOUP, *supra* note 22, at 195–97 (attributing \$73 to congestion costs and \$44 to emission costs).

57. *Motor Vehicle Pollution*, MINN. POLLUTION CONTROL AGENCY, <https://www.pca.state.mn.us/air/motor-vehicle-pollution> (last visited Jan. 19, 2019); *Vehicles, Air Pollution, and Human Health*, UNION CONCERNED SCIENTISTS, <https://www.ucsusa.org/clean-vehicles/vehicles-air-pollution-and-human-health#.W5wGSy2ZNo4> (last visited Jan. 19, 2019).

58. Neal Baker, *Wheels of Fortune: What Time Does the London Congestion Charge Start and End, What Are the Bank Holiday and Weekend Rules and What’s the T-Charge?*, SUN (Mar. 20, 2018, 10:53 PM), <https://www.thesun.co.uk/motors/3251046/london-congestion-charge-timings-bank-holiday-t-charge/>.

59. David Chazan, *How Paris Is Stepping Up Its Drive Against the Car*, BBC NEWS (May 2, 2016), <http://www.bbc.com/news/magazine-36169815>; *Mexico City Mobility Challenge*, DEVPOST, <https://mexicocity-mobility.devpost.com/details/resources> (last visited Jan. 19, 2019).

60. Pierce and Shoup describe the variable pricing for parking program in San Francisco, which aims at reducing congestion by ensuring that there are some vacant spots at all times. This aim, they point out, conflicts with the parking policy goal of increasing turnover to ensure commerce. Pierce & Shoup, *supra* note 5, at 23.

property. The next Part will present those principles and Part III will analyze how the economist recipes for parking fare against those principles.

II. CURBSIDE PARKING AS A NON-FULLY COMMODIFIABLE GOOD

A. THE LEGAL DIMENSION OF CURBSIDE PARKING: THE PARKING-METER CASES AND THE DUTY OF THE MUNICIPALITY TO MANAGE PUBLIC STREETS IN TRUST FOR THE PUBLIC AND FOR THE PUBLIC INTEREST

Sharing-economy initiatives regarding curbside parking do not operate in the same regulatory void that ride-sharing or home-sharing did at their inceptions. While other sharing-economy initiatives required the development of a new regulatory framework,⁶¹ curbside parking sharing had to, at the very least, respect the existing ordinances and the principles set forth for parking meters, as well as those in connection with any other form of monetization or privatization of curbside parking.

In 1935, Oklahoma City installed the world's first parking meter, Park-O-Meter No. 1, invented by Carl Magee, on the southeast corner of what was then First Street and Robinson Avenue.⁶² This and other early parking meters in Oklahoma City cost a nickel an hour, and were placed at twenty-foot intervals along the curb matching the spaces painted on the pavement.⁶³

The installation of the first parking meters marked the start of the use of prices to regulate curbside parking. Since then, parking-meters have been the object of anger for many city dwellers and visitors. Early on, for instance, some labeled these meters "Un-American."⁶⁴ And, more importantly for current purposes, the parking-meter controversy reached the judicial system shortly after parking-meters started to pop up in cities across the nation. In 1937, Alabama,⁶⁵ Massachusetts,⁶⁶ and Oklahoma⁶⁷ all rendered decisions on this issue. A fourth important decision, this time from Pennsylvania, came in 1943.⁶⁸

The judicial decisions on the parking-meter cases hinged on a central principle: public roads (or streets) must be managed in trust for the public. Hence, this principle limits any use affecting curbside parking. This holds true for any form of monetization (including variable pricing) or privatization (including the decentralized appropriation of parking spaces via apps). Parking-

61. See generally Eric T. Schneiderman, N.Y. Att'y. Gen., Remarks Prepared for the Sharing City, Sharing Economy: Urban Law and New Economy Conference, A New Regulatory Paradigm for the Sharing Economy (Apr. 24, 2015), https://ag.ny.gov/pdfs/A_New_Regulatory_Paradigm_for_the_Sharing_Economy_4_24_15.pdf.

62. Shoup, *supra* note 7, at 65–66.

63. *Id.*; *This Day in History: July 16, 1935, World's First Parking Meter Installed*, HIST. (Jan. 27, 2010), <http://www.history.com/this-day-in-history/worlds-first-parking-meter-installed>.

64. Cynthia Crossen, *When Parallel Parking Was New and Meters Seemed Un-American*, WALL ST. J. (July 30, 2007, 12:01 AM), <https://www.wsj.com/articles/SB118574808780081653>.

65. See *City of Birmingham v. Hood-McPherson Realty Co.*, 172 So. 114, 123 (Ala. 1937).

66. See *In re Op. of the Justices*, 8 N.E.2d 179, 182 (Mass. 1937).

67. See *Ex parte Duncan*, 65 P.2d 1015, 1018 (Okla. 1937).

68. See *William Laubach & Sons v. City of Easton*, 32 A.2d 881, 884 (Pa. 1943).

meter cases offer very broad formulations of the limits to parking management decisions in dicta. Where the parking-meter cases are insufficient to provide responses for the current challenges of parking, one must take into consideration the valuable insights that the judicial decisions dealing with the trust concept as applied to public resources different from curbside parking provide.

1. *The Massachusetts Parking-Meter Case: In re Opinion of the Justices*

In 1937, the Massachusetts legislature requested the Massachusetts Supreme Court to issue an opinion on the lawfulness of the bill to enact a long-titled act: Act Authorizing the Purchase, Installation, Operation and Maintenance of Devices Known as Parking Meters by Cities and Towns for the Purpose of Enforcing Ordinances, By-Laws, Orders, Rules and Regulations Relative to the Parking of Vehicles on Public Ways, and the Establishing of and Charging a Fee for the Privilege of Parking Vehicles on Certain Public Ways.⁶⁹ The court held in its decision in *In re Opinion of the Justices* that parking meters were lawful but that:

A municipality cannot be authorized to turn this plan of using parking meters into a business for profit over and above the expenses involved in proper regulation of the public use. It cannot establish a commercial enterprise on the public easement.⁷⁰

The first part of the last sentence of the quotation (“[i]t cannot establish a commercial enterprise”) clearly states that the municipalities cannot seek a profitable business out of curbside parking, neither for themselves nor for a contractor.⁷¹ The second part (“on the public easement”) needs some explanation to further grasp its meaning. To begin with, the reference to public easement is linking the regulation of curbside parking to that of travel on public roads, which are encumbered by an easement held by the public.⁷² In other words, parking is incidental to the purpose of the travel easement.⁷³ This is not just a technicality, for travel to be possible, access needs to be granted to the public road and because parking is linked to travel, access to parking needs to also be granted.⁷⁴ Much as the owner of a servient estate must respect the right of way of the owner of a landlocked dominant estate, the municipality must grant the public access

69. H.R. 745, 1937 Gen. Court (Mass. 1937).

70. *In re Op. of the Justices*, 8 N.E.2d at 182.

71. *Id.*

72. *Id.* at 181 (“The easement of travel is coextensive with the limits of the highway, and includes every reasonable means of passage and transportation for persons and commodities and of transmission of intelligence.”).

73. *Id.* at 182 (“Doubtless temporary and reasonable stops of automobiles on highways are lawful as an incident to travel.”).

74. *Id.*

to the public roads (or streets); this duty extends to curbside parking, not just the section of the road used by moving vehicles.⁷⁵

The court further established that the use of parking meters was limited by the rights of the abutters.⁷⁶ In this regard, parking meters are no different from water pipes or power poles.⁷⁷ The municipality does not own the fee of the streets, but an easement to run pipes, install poles, or operate meters without infringing the rights of the abutters, including the right of access.⁷⁸

Considering all of the above, the court emphasized some outer limits that municipal ordinances implementing the Act had to respect. In particular, it considered that parking meters' payments could only meet the cost of the installation, operation, maintenance, and supervision of the system.⁷⁹ Profit-making was considered alien to the public purpose that would justify the exercise of eminent domain.⁸⁰ In a similar vein, the court analogized exacting compensation for curbside parking with tolls, which are justified as paying for the special service rendered, and not considered to infringe on the rights of individuals in public ways.⁸¹ Lastly, and while not central to the case, the court pointed out that outsourcing parking to a private company might run against the principles governing public roads.⁸² But some of the court's statements open the possibility of covering more than just costs with the fees. The decision states: "A municipality cannot be authorized to turn this plan of using parking meters into a business for profit over and above the expenses involved in proper regulation of the public use."⁸³ Accordingly, with an expansive interpretation, pollution and congestion could be included in expenses related to the proper regulation of public use.

75. *Id.* at 181 ("Abutting owners ordinarily hold the title to the fee to the center of the public way, subject only to the easement of travellers [sic] to pass and repass. This easement of travel has been interpreted in a broad sense. . . . [and] [w]hatever is done within the limits of the highway by the public or by members of it *not* justifiable as incidental to travel is a violation of the rights of the abutting owner." (emphasis added)).

76. *Id.* at 182 ("An ordinance which allowed such parking as would interfere with reasonable access to his premises from the public way by the abutter would be invalid. Even where the abutter does not own the fee of the public way he is entitled to reasonable access to the way from his land and to his land from the way.").

77. *Id.* at 181.

78. *Id.*

79. *Id.* at 182.

80. *Id.*

81. *Id.* at 182–83.

82. *Id.* at 183 ("There is ground for argument that the proposed statute in section 1 [of 1937 Massachusetts House Bill No. 745] authorizes a municipality to farm out to strangers the running of the system, but we are inclined to think that that would not be its proper construction."). Section 1 of the 1937 proposed House Bill allowed for

the installation, operation and maintenance . . . of . . . parking meters . . . for the control and regulation of traffic on ways within [the city's] control. Such a contract may provide for payments by such cities and towns over a period not exceeding five years, and any obligation of such cities and towns created by such a contract shall not be deemed a liability

H.B. 745, 1937 Gen. Court (Mass. 1937).

83. *In re Op. of the Justices*, 8 N.E.2d at 182.

2. *The Alabama Curbside-Parking Case: City of Birmingham v. Hood-McPherson Realty Co.*

The main claim of the plaintiffs in *City of Birmingham v. Hood-McPherson Realty Co.*⁸⁴ was that the local ordinance establishing parking meters interfered with private landowners' right to access their properties.⁸⁵ The plaintiff in the case was a real estate company, which had already been granted an injunction against the City of Birmingham's ordinance authorizing the installation of parking meters. According to the Ordinance:

The five cent coins required to be deposited as provided herein are levied under the police power of the City of Birmingham to regulate and control traffic upon the public streets, and to cover the costs of such regulation and control, and the same shall be used for no other purpose.⁸⁶

The plaintiff alleged that the ordinance constituted a taking of property and that the parking meters on the street were an obstruction or nuisance. The plaintiff further considered itself to have been deprived of the right to go in and out of its commercial establishment and to park vehicles alongside their property.⁸⁷

The Alabama Supreme Court paid little attention to the taking and nuisance arguments. Instead, the court chose to focus on the discussion of the scope of the municipalities' regulatory powers when it came to curbside parking. Was it for the municipality to do anything other than, as the plaintiff would prefer, just paint the lines of the parking spaces? What if, as the plaintiff argued, the Ordinance was a "plan or scheme . . . to obtain revenue for the city?"⁸⁸ Was this within the regulating powers of the municipality? And, most importantly, how should the original deed of the City be read when conveying "streets, avenues and alleys . . . for the benefit and use of the public?"⁸⁹

According to the court, the municipality was a mere trustee and, as such, was under a duty to pursue the clearly stated purpose of making the streets for the benefit and use of the public. The public was the beneficiary and, according to the court, was to be interpreted broadly to include more than just the people of the city.⁹⁰ The trust narrative used by the court goes beyond the understanding

84. 172 So. 114, 118 (Ala. 1937).

85. *Id.*

86. *Id.* at 117 (internal quotation marks omitted).

87. This factual pattern is actually what the Massachusetts court had in mind when it considered whether an ordinance that would affect the right to access one's property would be valid.

An ordinance which allowed such parking as would interfere with reasonable access to his premises from the public way by the abutter would be invalid. Even where the abutter does not own the fee of the public way he is entitled to reasonable access to the way from his land and to his land from the way.

In re Op. of the Justices, 8 N.E.2d at 182.

88. *Hood-McPherson Realty Co.*, 172 So. at 116 (emphasis omitted).

89. *Id.* at 118 (internal quotation marks omitted) (quoting the City's deed to the property at issue in the case).

90. *Id.* at 120.

of public property as just private property owned by the government—be it municipal, state, or federal.

The court held that the Ordinance violated the City's deed because parking would obstruct public use.⁹¹ Moreover, the court concluded that the Ordinance exceeded the powers of the municipality even though Birmingham had broader police powers than smaller municipalities. Police power over curbside parking allowed taxation with a regulatory aim. Taxation via parking fees, according to the court, could only extend to the amount necessary to cover regulatory and enforcement costs.⁹² To an extent, the definition of the court suggests that a municipality should regulate parking as a traditional utility, where the customer gets charged for the cost of service.⁹³ The Ordinance, however, had gone beyond these boundaries.

3. *The Pennsylvania Parking-Meter Case: William Laubach & Sons v. City of Easton*

In 1943, in *William Laubach & Sons v. City of Easton*,⁹⁴ the Pennsylvania Supreme Court considered if it was a reasonable regulation to time-limit parking and to charge a small fee with the aim, not to raise revenue, but to defray the costs of special services.⁹⁵ This case was initiated by two abutting property owners and a tax-payer challenging an ordinance of the City of Easton regarding curbside parking. The court acknowledged the change in conditions resulting from the rise of the automobile.⁹⁶ It was in contemplation of those changes that the court justified cities having the power to regulate parking, in order to enhance

91. *Id.* at 122.

92. *Id.*

93. Erin A. Scharff, *Green Fees: The Challenge of Pricing Externalities Under State Law*, 97 NEB. L. REV. 168, 176, 207 (2018). The cost of service regulation in investor-owned electric utilities is based on the idea that the utility is a public service firm. While historically rate-setting standards required "just and reasonable" rates, more recently these have translated into calculations of the total revenue requirement. See KARL McDERMOTT, COST OF SERVICE REGULATION IN THE INVESTOR-OWNED ELECTRIC UTILITY INDUSTRY: A HISTORY OF ADAPTATION vii, 8 (2012), <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=916E3E00CA202E964CE6E694997549A6?doi=10.1.1.476.2757&rep=rep1&type=pdf>. The formula to calculate the latter includes return on investment. *Id.* at 8. Rates account, thus, for the appropriate profit that stakeholders would receive in a market. *Id.* at 14. When regulators oversee utility rates and services, they take into account both the fairness and the efficiency of outcomes. *Id.* at 12.

94. 32 A.2d 881 (Pa. 1943).

95. The court stated:

In the broad sense every ordinance which requires the payment of money is a revenue producing measure, but the *primary purpose of ordinances* such as this under consideration *is the reimbursement of the city* for providing special services to the licensees. . . . Though we may suppose the ordinance was imposed to increase the revenue, this does not invalidate it as a licensing ordinance if it clearly appears the city is seeking to compel the persons who cause expense to pay for it.

Id. at 884 (internal quotation marks omitted) (citing *Am. Baseball Club v. Philadelphia*, 167 A. 891, 892 (Pa. 1933)).

96. *Id.* at 883.

travel by the public.⁹⁷ Far from seeing the ordinance as an attempt to raise revenue under the guise of police regulation, the court held that the ordinance was a valid exercise of the police power which the state had delegated to the municipality.⁹⁸

4. *The Oklahoma Parking-Meter Case: Ex parte Duncan*

In *Ex parte Duncan*,⁹⁹ the Oklahoma Supreme Court held that Oklahoma City's parking ordinance was compatible with the right to free use of public highways. The case arose from a writ of habeas corpus. The petitioner had been jailed for violating the parking ordinance. According to the court, the use of public highways was an absolute right, but parking on the street was a privilege that could be subject to a fee.¹⁰⁰ The power to regulate curbside parking, in the court's view, derived from the duty of the municipality to guarantee the free use of public highways.¹⁰¹

5. *Curbside Parking as Rose's Inherently Public Property*

The parking-meter cases have some similarities with the ones reviewed by Carol Rose in her celebrated article *The Comedy of the Commons*.¹⁰² In the article, Rose explores the concept of inherently public property by looking at, among other resources, roadways and waterways, the highways for commerce.

Inherently public property is not owned by either a private party or the state; it is owned by the public. As defined by Rose herself, it is "property collectively 'owned' and 'managed' by society at large, with claims independent and indeed superior to the claims of any purported governmental manager."¹⁰³ Rose's approach echoes the easements and trust concepts portrayed in the aforementioned parking decisions.¹⁰⁴ The reference to the public as beneficiaries

97. The court reasoned:

As Lord Ellenborough said in an early case, *Rex v. Cross*, 3 Camp. 224, 227: "No one can make a stable-yard of the King's highway." To paraphrase that statement as applied to the present day: "No one may make a public garage of a public highway." That, however, is not the situation here, for today temporary and reasonable stops of motor cars are lawful incidents of travel. It would unduly interfere with convenient travel by motor car if one could not stop for a short interval for the accomplishment of the purpose or purposes of the trip.

Id. at 883. This is also argued in the case of *Frost & Frost Trucking Co. v. R.R. Comm'n of Cal.*, 271 U.S. 583 (1926). In that case, "Mr. Justice McReynolds observed that: 'The states are now struggling with new and enormously difficult problems incident to the growth of automotive traffic, and we should carefully refrain from interference unless and until there is some real, direct and material infraction of rights guaranteed by the federal Constitution.'" *Ex parte Duncan*, 65 P.2d 1015, 1018 (Okla. 1937) (citing *Frost & Frost*, 271 U.S. at 603 (McReynolds, J., dissenting)).

98. *William Laubach & Sons*, 32 A.2d at 884.

99. 65 P.2d 1015.

100. *Id.* at 1017.

101. *Id.*

102. Rose, *supra* note 6.

103. Rose, *supra* note 6, at 720 (emphasis added).

104. See cases cited *supra* notes 65–68.

and to the duty of the municipalities to guarantee access to the public is evidence enough.

Rose sees inherently public property as instrumental for commerce, and thus for socialization. According to her, this determines inherently public property's legal regime: while government may own or manage that type of property, there are some lines it cannot cross.¹⁰⁵ Similarly, the judicial decisions reviewed above see the status of curbside parking as only partially commodifiable goods that must be managed to enhance the public use of the roads, thus limiting a municipality's parking management tools.¹⁰⁶

The principles summarized above and articulated in the cases constitute those limits. In their formulation, these principles are reminiscent of the state public trust doctrine.¹⁰⁷ These principles should apply across any property held in trust by a public agency (but not state lands given to the states to raise revenue to fund schools and other services), including curbside parking held by municipalities.

6. *Lessons Beyond the Streets*

While the principles originating in the parking-meter cases are important, they alone do not provide enough guidance to fully analyze each tool in the economist's portfolio for solving parking scarcity. Looking beyond parking to case-law and legislation regarding other public properties helps to illuminate and operationalize those principles.

a. *The Public Trust Doctrine: Illinois Central Railroad and Its Progeny*

The Public Trust Doctrine implies that certain resources are managed by government in trust for the general public and it has to preserve them for public use. The classic public trust doctrine case is *Illinois Central Railroad v. Illinois*.¹⁰⁸ The facts of this old case are well-known. The state legislature of Illinois conferred on the Illinois Central Railroad Corporation the right to enter, possess, and use 1000 acres of submerged lands on Lake Michigan.¹⁰⁹ In turn, Illinois Central Railroad Corporation agreed to pay to the state in perpetuity 7% of the earnings from the submerged land.¹¹⁰ After some time, however, the state legislature revoked the right,¹¹¹ but Illinois Central Railroad continued acting as an owner.¹¹² A lawsuit was then filed by the State Attorney General and the case eventually reached the United States Supreme Court, which sided with the State

105. Rose, *supra* note 6, at 721.

106. See cases cited *supra* notes 70–88.

107. See *infra* Subpart II.A.6.i.

108. 146 U.S. 387 (1892).

109. *Id.* at 454.

110. *Id.* at 448.

111. *Id.* at 449.

112. *Id.* at 438.

of Illinois.¹¹³ In confirming that the grant of the right was revocable, the Court reasoned that the harbor and the submerged lands were held in trust for the public and, consequently, the State could not relinquish control over them.¹¹⁴ The Court differentiated lands held in trust for the public from lands held by the state to increase revenue and stated that the former are “being held by the whole people for the purposes in which the whole people are interested.”¹¹⁵

The Court also held that lands subject to the public trust could be alienated, in part, only if: (1) the alienation furthered the purpose of the public trust, for instance, by enhancing commerce;¹¹⁶ and (2) it did not impair the use of the remaining lands subject to the trust.¹¹⁷

More than ninety years after *Illinois Central Railroad*, two other public trust doctrine cases were decided by the California Supreme Court and the Idaho Supreme Court, respectively.

In *National Audubon Society v. Superior Court* (better known as *Mono Lake*), the Supreme Court of California held that allocation of the Mono Lake water had to take into account both the human and environmental uses of the lake.¹¹⁸ These uses were protected under the public trust doctrine and the state had to reconsider water allocations in order to protect them. In its reasoning, the court also declared water rights to be usufructuary rights,¹¹⁹ a conceptualization that may prove helpful to address allocation of curbside parking. Curbside parking rights are also usufructuary rights that can be limited when preserving the interest of the public in the underlying resource requires it.

In *Kootenai Environmental Alliance, Inc. v. Panhandle Yacht Club, Inc.*, the main issue before the Idaho Supreme Court was whether an assignment of private rights over resources held in trust for the public should be allowed.¹²⁰ In this case, the Idaho Department of Lands had entered into a renewable lease with the Panhandle Yacht Club for the construction and use of a docking facility in a navigable lake.¹²¹ The State of Idaho later challenged the lease. The court held that the lease did not violate the terms of the trust.¹²² The Idaho Supreme Court reached this conclusion after applying a two-part test. First, it inquired whether the grant to a private party was in aid of commerce or another trust purpose.¹²³

113. *Id.* at 452–54.

114. *Id.* at 453–54; *see also* Lake Mich. Fed’n v. U.S. Army Corps of Eng’rs, 742 F. Supp. 441, 445 (N.D. Ill. 1990) (“[C]ourts should be critical of attempts by the state to surrender valuable public resources to a private entity.”).

115. *Ill. Cent. R.R.*, 146 U.S. at 456.

116. *Id.* at 452–55.

117. *Id.* at 452 (stating that grants that “do not substantially impair the public interest in the lands and waters remaining” are the ones that are upheld and considered a valid exercise of legislative power that is consistent with the public trust doctrine).

118. 658 P.2d 709, 732 (Cal. 1983).

119. *Id.* at 724 (citing *Eddy v. Simpson*, 3 Cal. 249, 252 (Cal. 1853)).

120. 671 P.2d 1085, 1087 (Idaho 1983).

121. *Id.* at 1087.

122. *Id.* at 1096.

123. *Id.* at 1089.

Second, it asked whether the grant substantially affected the public interest in the lands and water remaining.¹²⁴ This two-part test could inform the assessment of curbside parking measures taken by the local governments in order to help commerce, reduce congestion, or to achieve any other admissible trust purpose, by raising access concerns.

b. In Trust for the Public: New York City Parks

In the State of New York, parkland is statutorily impressed with a public trust, and any alienation or dedication to purposes other than as parkland requires legislative approval.¹²⁵ In addition, if alienation (outright conversion of parkland to private use)¹²⁶ occurs, land elsewhere has to be acquired to serve park purposes.¹²⁷ With some modifications, this solution is transferable to curbside parking so that limitations on access to curbside parking—by making parking fees prohibitively expensive—must be offset by providing an alternative to those affected.

Alienation is not the only statutorily-curbed action when it comes to New York parks. Even leases are off-limits, with only revocable licenses to third parties being allowed, provided they are for uses consistent with park trust purposes. The rationale behind such limitations is that, given that parks are held in trust, municipalities must retain full control.¹²⁸ Cases involving restaurants run by private individuals and entities in New York City parks are illustrative of the specific implementation of the strict limitations resulting from the municipality holding such parks in trust.

Privately-run restaurants are considered to serve a park purpose.¹²⁹ Such categorization is attuned to the services restaurants supply: providing beverages, food, or a place to rest. These services help the people make the most out of their time in the park.

But what about an expensive restaurant affordable only to some? At least one lower court has found that such a restaurant would not serve park purposes

124. *Id.*

125. *See* Friends of Van Cortlandt Park v. City of New York, 750 N.E.2d 1050, 1055 (N.Y. 2001) (“[O]ur law is well settled: dedicated park areas in New York are impressed with a public trust for the benefit of the people of the State. . . . That proposition is reflected both in our case law and in our statutes.” (citations omitted)).

126. Jefferson Siegel, *Union Square Rehab on Hold After Opponents File Lawsuit*, VILLAGER (Apr. 29, 2008), http://thevillager.com/villager_260/unionsquarerehab.html.

127. N.Y. STATE OFFICE OF PARKS, RECREATION & HISTORIC PRES., HANDBOOK ON THE ALIENATION AND CONVERSION OF MUNICIPAL PARKLAND IN NEW YORK 4, 13 (Sept. 1, 2017), <https://parks.ny.gov/publications/documents/AlienationHandbook2017.pdf> (“State Parks supports a ‘no net loss of parkland’ policy and strongly encourages municipalities to include provisions for substitute parkland in all alienation bills.”). In cases where municipalities have received state grants, those municipalities must provide for substitute parkland if they alienate parkland. *Id.* at 14.

128. 9 ENVIRONMENTAL LAW AND REGULATION IN NEW YORK § 1:10.50 (William R. Ginsberg & Philip Weinberg eds., 2d ed. 2018).

129. 795 Fifth Ave. Corp. v. City of New York, 205 N.E.2d 850, 851 (N.Y. 1965) (“[T]he proof is very clear that there are, and for many years have been, restaurant and related facilities in public parks . . . and they are commonly regarded as appropriate.” (citation omitted)).

(it would be “in the park,” but not “of the park”), but would be a destination in itself.¹³⁰ Conversely, the New York Court of Appeals considered that the Parks Commissioner had enough discretion to allow such a restaurant without the municipality losing too much control, because schedules, menu items, prices, and other business decisions were subject to approval by the municipality.¹³¹ In addition, the restaurant had to participate in community programs, use products from the park’s farmers market, and allow non-patrons to use the outdoor seating. Last but not least, the contract between the restaurant and the municipality included a termination at will clause.¹³² The Court of Appeals accepted a fancy restaurant, but only subject to extensive limitations.

The high-end characteristic of a certain private use was also controversial in Damrosch Park, a park in the Upper West Side managed on behalf of the City by the Lincoln Center,¹³³ but still subject to the public trust. The park was a venue for the NY Fashion Week, which implied that the park was accessible only by invitees of the event’s organizers.¹³⁴ The public could not access the park during the weeks in which the event was taking place. Consistent with the strong feelings about certain public property, this exclusion was met with criticism by activists: one of them declared, “Private people aren’t supposed to be making money on [a park].”¹³⁵ New York City Park Advocates sued the municipality and Lincoln Center based on public trust principles. Eventually, the case was settled without any recognition of wrongdoing, but the fashion event is no longer hosted in the park. Instead, more benches and plants were brought to the park.¹³⁶

One important caveat when analyzing the public trust principles as applied to New York City parks is that the state legislature may waive the protection altogether under some circumstances. This possibility is actually being put to the test in Willets West (Queens, New York City).¹³⁷ There, the City dispensed with the requirement that parkland be for recreational uses, and allowed parkland to be used as a parking lot for the Mets complex.¹³⁸ However, during Mayor Bloomberg’s administration, a redevelopment venture projected a mall being

130. *Union Square Park Coal., Inc. v. N.Y.C. Dep’t of Parks & Recreation*, No. 102734-12, 2013 WL 308912 (N.Y. Sup. Ct. Jan. 25, 2013), *rev’d*, 966 N.Y.S.2d 669 (N.Y. App. Div. 2013).

131. *Union Square Park Cmty. Coal., Inc. v. N.Y.C. Dep’t of Parks & Recreation*, 22 N.Y. 3d 648, 652–53 (N.Y. Ct. App. 2014).

132. *Union Square Park Coal., Inc. v. N.Y.C. Dep’t of Parks & Recreation*, 966 N.Y.S.2d 669 (N.Y. App. Div. 2013).

133. According to the Lincoln Center’s financial statements, the Lincoln Center is a 501(c)(3) nonprofit organization. Lincoln Center Federal Tax Return (2015), LINCOLN CTR., <http://www.aboutlincolncenter.org/pdfs/lcpa-990-fy2016-final.pdf> (last visited Jan. 19, 2019).

134. *New York Fashion Week Booted out of Lincoln Center*, CBS NEWS (Mar. 2, 2017, 10:57 AM), <https://www.cbsnews.com/news/new-york-fashion-week-booted-out-of-lincoln-center/>.

135. *Id.*

136. *Id.*

137. Sarah Maslin Nir, *Ruling May Be Death Knell for \$3 Billion Queens Development*, N.Y. TIMES (June 6, 2017), <https://www.nytimes.com/2017/06/06/nyregion/judges-block-plan-for-mall-and-housing-near-citifield.html>.

138. *Id.*

built on that same parkland.¹³⁹ A legal dispute followed, and a court invalidated the project.¹⁴⁰ But the New York Supreme Court left the door open for a potential legislative decision to turn things around.¹⁴¹ The court recognized implicitly that, much like the public trust doctrine in environmental law, the principles governing public property managed in trust for the public must be both resistant to, and malleable by, societal¹⁴² and technological¹⁴³ change. The court recognized that the public of Queens was better served by a redevelopment, including a commercial mall, rather than by that parkland.¹⁴⁴ It is possible that public benefit purposes include the improvement of trade and commerce.¹⁴⁵ But it rests on the legislature to decide whether the redevelopment project furthers commerce because, under current legislation, the exemption requires those ancillary commercial purposes to be tied to the stadium.¹⁴⁶

7. *Limits on the Management of Public Property*

Public property is not simply private property owned by a public entity. With the exception of state lands granted to raise funds for state school systems, the nature of public property entails that the public agency managing it cannot act as a private owner would. Public property is subject to public use. The public agency acts as a trustee for the public. Streets are public property and they are managed to ensure that the public can use the roads. As such, based on the case-law discussed above on parking meters and other public property, the regulation of curbside parking must be consistent with particular principles, specifically: (1) pricing should only cover costs related to parking; (2) pricing may be used

139. *Id.*

140. *In re Avella v. City of New York*, 80 N.E.3d 982, 992 (N.Y. 2017).

141. *See* Nix, *supra* note 137 (“The decision does allow a window of possibility for the project: The state could pass legislation to permit building on the parkland.”).

142. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 476–77 (1970).

143. Karl S. Coplan, *Public Trust Limits on Greenhouse Gas Trading Schemes: A Sustainable Middle Ground?*, 35 COLUM. J. ENVTL. L. 287, 321 (2010) (“As technology, and the potential for cap-and-trade, makes aspects of the atmosphere subject to private ownership, the public trust doctrine should similarly evolve to include these interests in the public trust responsibilities of the sovereign, such as creating the system of private rights.”).

144. The court stated:

We acknowledge that the remediation of Willets Point is a laudable goal. Defendants and various amici dedicate substantial portions of their briefs to the propositions that the Willets West development would immensely benefit the people of New York City, by transforming the area into a new, vibrant community, and that the present plan might be the only means to accomplish that transformation. Those contentions, however, have no place in our consideration of whether the legislature granted authorization for the development of Willets West on land held in the public trust. Of course, the legislature remains free to alienate all or part of the parkland for whatever purposes it sees fit, but it must do so through direct and specific legislation that expressly confers the desired alienation.

In re Avella, 80 N.E.3d at 991.

145. *Id.* at 986–87 (quoting N.Y.C., N.Y., ADMIN. CODE tit. 18, ch. 1, § 18-118(b) (2018)).

146. ADMIN. § 18-118(b); *In re Avella*, 80 N.E.3d at 988; *In re Avella v. City of New York*, 13 N.Y.S.3d 358, 361 (N.Y. App. Div. 2015).

for a regulatory aim, but not for revenue raising; (3) any revenue obtained should be earmarked for use on curbside parking or related issues; (4) the municipality cannot lose control of the public property, and must even retain some sort of control when the property is leased, and (5) only partial alienation is admissible, and only if some substitute goods are provided, or the partial alienation will enhance the goals of the trust.

B. THE COMMUNITY DIMENSION OF CURBSIDE PARKING: A GOOD FOR THE PUBLIC

The negative reaction to paying higher fees at the parking meters,¹⁴⁷ the privatization of parking meters,¹⁴⁸ and the labeling of the parking apps as #jerktech¹⁴⁹ shows how difficult any reform based on the economic recipes stated in Part III will be to implement. The negative responses to high parking prices can be just another expression of the endowment effect.¹⁵⁰ Notwithstanding the endowment effect, resulting from the change of enjoying free or cheap curbside parking to having to pay for it—and being unwilling to do so¹⁵¹—the negative reactions can also be read as reflecting the community dimension that parking may have¹⁵² and internalizing the principles set forth above. Other anecdotal evidence seems to point to the existence and relevance of such community dimension. Take, for instance, the public opposition to private companies taking over the management of meters.

This community dimension translates to more than just the endowment effect and the rejection of high parking fees. A great expression of this community dimension is the good Samaritans who feed about-to-expire meters for others, and thus help fellow anonymous parkers from being fined. Most likely, good Samaritans (or meter-feeding fairies) are driven by the conviction that fines are excessive, and that not even the municipality should profit from curbside parking,¹⁵³ it being instrumental for locals and visitors alike to go on with their lives.¹⁵⁴ The idea of preventing excessive profit from parking links

147. Kristi Palma, *Boston Drivers Chafe at City's Pricier Parking Meter Rates*, BOSTON.COM (Jan. 4, 2017), <https://www.boston.com/news/local-news/2017/01/04/boston-drivers-chafe-at-citys-pricier-parking-meter-rates>.

148. Stefanie Fisher, *Chicago City Hall Protest Demands End to Parking Meter Expansion*, LIBERATION (Aug. 4, 2009), <https://www.liberationnews.org/09-08-04-chicago-city-hall-protest-demand-html/>.

149. See Josh Constine, *Stop the JerkTech*, TECHCRUNCH (July 3, 2014), <https://techcrunch.com/2014/07/03/go-disrupt-yourself/>; Tim Harford, *What Tech Jerks Can Teach Us*, FIN. TIMES (July 25, 2014), <https://www.ft.com/content/6bc48790-1201-11e4-a17a-00144feabdc0>.

150. Daniel Kahneman et al., *The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 J. ECON. PERSP. 193, 203 (1991); Daniel Kahneman et al., *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, 76 AM. ECON. REV. 728, 729 (1986).

151. Shoup, *supra* note 7, at 12.

152. MARUSEK, *supra* note 3, at 6.

153. For an account of increased fines in Chicago and the public reaction, see Steve Rhodes, *Fight the Parking Power!*, NBC CHI. (June 4, 2009, 3:30 AM), <https://www.nbcchicago.com/news/local/Fight-The-Parking-Power-.html>.

154. This was part of the reaction to Chicago's lease of the meters, but in Chicago it is not illegal. Anthony Todd, *Parking Meter Samaritans, Watch Out!*, CHICAGOIST (Apr. 3, 2009, 2:40 PM),

with the first judicial decisions on parking meters.¹⁵⁵ On the other hand, municipalities claim that they need to stop meter fairies not because their parking revenue will decrease, but because they must protect local business by ensuring customer turnover. The acts of the meter fairies reduce the volume of patrons for local businesses.¹⁵⁶ Ensuring turnover is one of the goals of parking policies.

Some good Samaritans have local celebrity status. In Santa Cruz, California, a clown was well known for feeding parking meters to prevent the parking enforcement officers from fining those drivers who overstayed.¹⁵⁷ However, the municipality did not share the joy of the clown as the recipients of his generosity did.¹⁵⁸ Or, at least, so suggests the passing of an ordinance forbidding meter feeding (known as the “Anti-Good-Samaritan Ordinance”) and the subsequent ticket and court citation to the defiant clown.¹⁵⁹ The response of the people from Santa Cruz forced the municipality to repeal the ordinance.¹⁶⁰ The fact that the municipality was so opposed to the good Samaritan, even though it was getting the corresponding parking revenue (regardless of the source), raises the question of whether the municipality was counting on a certain rate of non-compliance and fine collection to bring much needed funds to the city coffers. Filling the city coffers with parking fines does not match the principles guiding the management of public streets, as Subpart II.A explains. Similarly, many municipalities forbid drivers to transfer for free their time-limited right to park on a metered spot when they have not used up their time.¹⁶¹ In fact, some city councils have invested in sensors to reset the parking meter

http://chicagoist.com/2009/04/03/parking_meter_samaritans_watch_out.php. In Santa Cruz, Twister the Clown was fined for filling the parking meter of others. However, he won the battle because Santa Cruz ended up repealing the regulation. Ellen Knickmeyer, *No Joking Matter: Clown Wins Meter-Feeding Battle as City Council Caves in to Ridicule*, FREE LANCE STAR, Oct. 27, 1995, at A12. In Los Angeles, it is illegal to feed your meter once the time limit has expired. Michael Russnow, *You Can Be Ticketed for Feeding a Parking Meter After the Time Limit: How Many People Really Know?*, HUFFINGTON POST (May 25, 2011), http://www.huffingtonpost.com/michael-russnow/you-can-be-ticketed-for-f_b_111120.html.

155. See *supra* Subpart II.A for the early decisions on parking meters.

156. Katherine Mozzone, *‘Meter Fairy’ Told He Can’t Feed Other People’s Parking Meters*, KQRE NEWS 13 (Sept. 7, 2015, 7:50 AM), <http://krqe.com/2015/09/07/meter-fairy-told-he-cant-feed-other-peoples-parking-meters/>.

157. *Mr. Twister Turns Parking Resister*, CNN (Oct. 18, 1995, 1:25 AM), http://www.cnn.com/US/9510/clown_rally/index.html.

158. *Id.*

159. *Id.*; *Clown Cashes in on Public Outcry as City Parks Meter-Feeding Ban*, WASH. POST, Oct. 27, 1995, at A26.

160. *Mr. Twister Turns Parking Resister*, *supra* note 157.

161. Piggybacking on someone else’s parking meter is a common practice. City ordinances outlaw such a practice implicitly. But it may be a provision hard to enforce. The Los Angeles City Code states:

It shall be unlawful for any person to park, or to cause, allow, permit or suffer to be parked, a vehicle in any parking meter space, except as provided by Sections 88.01.1, 88.03.1 and 88.06.1, without immediately making or causing to be made a lawful payment at an applicable parking meter as provided in Section 88.07.

LOS ANGELES, CAL., MUNICIPAL CODE § 88.13(a) (2018); see also *Kootenai Envtl. All. v. Panhandle Yacht Club, Inc.*, 671 P.2d 1085, 1091 (Idaho 1983).

every time a car vacates the spot.¹⁶² This is not a measure justified only on the basis of ensuring turnover, but one aimed at raising revenue. If instead the municipality wanted to ensure turnover, it could install technology that would not let the same car park twice in a row on the same spot or street.¹⁶³

Similarly, the City of Keene, New Hampshire, sued the Robin Hood Group for feeding parking meters.¹⁶⁴ The municipality claimed tortious interference with contractual relations and civil conspiracy to commit tortious interference with contractual relations, but the underlying allegations were that the Robin Hooders were harassing the officers.¹⁶⁵ The case reached the New Hampshire Supreme Court, which upheld the First Amendment right of the Robin Hood Group.¹⁶⁶

The community dimension of parking, to the extent that it expresses the principles limiting the management of curbside parking in public streets, should not represent a further constraint. The application of those principles admits nuances and gives municipalities some room to choose their management options. However, the social reaction against monetizing parking may offer less room. At least in the short-term, municipal officials may be wary of implementing changes in response to this political economy.

III. ECONOMISTS' RECIPES FOR PARKING

The standard economic response to curbside parking allocation is a seemingly simple one: increase the price.¹⁶⁷ Given its scarcity, the market price will be high enough to discourage driving to and parking in downtown areas.

This thinking is promising in theory, but has hardly ever become a reality in curbside parking. Curbside parking is often free or very cheap. Municipalities are not and should not be operating parking like a business, maximizing profit, because curbside parking takes place on public property. The principles guiding the management of public property constrain their options: managing curbside parking cannot be a profit-making enterprise, parking fees have to be related to the social costs of parking, the municipality has to ensure use by the public, and

162. Nicole Ybarra, *How Vehicle Detection Technology is Revolutionizing Parking*, IPS GROUP (Jan. 18, 2017), <https://www.ipsgroupinc.com/7351-2/>; *Parking Meter and Repair*, CITY OF SANTA MONICA PUB. WORKS, <https://www.smgov.net/Departments/PublicWorks/ContentStreetFleet.aspx?id=33303> (last visited Jan. 19, 2019).

163. For a description of ways to enforce time-limits on parking, including electronic handheld citation writer with built in camera, see Richards, *supra* note 42. For a description of how the parking sensors work, see Nicole Ybarra, *How Vehicle Detection Technology Is Revolutionizing Parking*, IPS GROUP (Jan. 18, 2017), <https://www.ipsgroupinc.com/7351-2/>.

164. *City of Keene v. Cleaveland*, 118 A.3d 253, 255 (N.H. 2015).

165. *Id.* at 256.

166. *Id.* at 259; Amy Covenor, *NH Supreme Court Rules on Parking Meter Robin-Hooders*, WMUR NEWS 9 (June 9, 2015, 6:15 PM), <http://www.wmur.com/article/nh-supreme-court-rules-on-parking-meter-robin-hooders/5200953>.

167. Richard A. Epstein, *The Allocation of the Commons: Parking and Stopping on the Commons* (U. Chi. Coase-Sandor Inst. for Law & Econ., Working Paper No. 134, 2001) (discussing and critiquing Harold Demsetz's evolution of property rights as set out in *Toward a Theory of Property Rights*).

the municipality cannot lose control over public property.¹⁶⁸ However, while current allocation may comply with those principles, it is not satisfying the goals that parking management should serve: high turnover, access, and congestion and pollution reduction.¹⁶⁹ This Subpart analyzes whether and how the municipalities could take a leaf from the economist's book and still respect the stated principles of public property management.

Next, this Article will analyze the three ways economists would propose to achieve a higher price: privatization, property rights, and variable pricing. Cases where these strategies have been implemented will illustrate the tension between the efficiency goal of these strategies and the fairness principles stated. A private company has managed Chicago's parking meters since 2009; apps have allowed drivers to auction their parking spots to the highest bidders in Boston and San Francisco; and Boston and San Francisco have implemented variable pricing programs increasing parking fees when demand for parking is expected to be high. Where possible, this Article proposes potential modifications of the economist's tools making compatible efficiency and fairness, and helping achieve the goals of parking management. The main claim is that such principles are sufficiently well-rooted to stand some winds of change (such as privatization of management or bottom up re-definition of property rights) but also have the flexibility to allow some other winds of change (such as variable pricing) to bend them without breaking. The principles constraining the management of public property are not fully compatible with privatization and bottom up redefinition of property rights. Variable pricing, in contrast, can be designed to be compatible with those principles while at the same time improving the efficient allocation of parking spots and reducing traffic congestion.

A. PRIVATIZATION OF PARKING METERS AND ITS MANAGEMENT

It is government—mostly municipalities—that is to blame for the price of parking not forcing drivers to internalize the congestion and pollution costs imposed to the community at large and slowing down commerce. In other words, we are not dealing with a case of market failure, but of governmental failure.¹⁷⁰ Some economists believe that a private provider may do a better job. The privatization of public services is often criticized because it does not always translate into an increase in efficiency, and because private companies are profit-making enterprises that may increase prices, making the services unaffordable to the low-income population.¹⁷¹ Privatization is also criticized as a management

168. See *supra* Subpart II.A.

169. See *supra* Subpart I.A.

170. Grossman defines governmental failure as misallocation of entitlements in a way that do not maximize social welfare. PETER Z. GROSSMAN, *Is Anything Naturally a Monopoly?*, in *THE END OF A NATURAL MONOPOLY: DEREGULATION AND COMPETITION IN THE ELECTRIC POWER INDUSTRY* 11, 19 (Peter Z. Grossman & Daniel H. Cole eds., 2003).

171. John B. Goodman & Gary W. Loveman, *Does Privatization Serve the Public Interest?*, *HARV. BUS. REV.*, Nov.–Dec. 1991, at 26.

tool because it impairs the decision-making process of future administrations.¹⁷² Privatizing parking is different than just privatizing just a service—in the case of parking, the maintenance of parking meters will be outsourced, thus granting private control over the public curbside. While outsourcing is permitted, the principles underlying the management of public property limit how it can be configured.

The question of whether privatization of parking meters and its management runs afoul of the nature of curbside parking as property held in trust for the benefit and use of the people has been answered. As mentioned above, the City of Chicago, under the leadership of Mayor Richard M. Daley, leased the parking meters and its management for seventy-five years¹⁷³ to Chicago Parking Meters LLC, a venture that included Morgan Stanley, Alliance Capital Partners, and the Abu Dhabi Investment Authority, for a price of \$1.15 billion.¹⁷⁴ Not only was the price paid by Chicago Parking Meters LLC perceived as a steal,¹⁷⁵ but the City also agreed not to build off-street parking lots¹⁷⁶ and to pay for any street closure or reduction of the hours the parking spots could be operated.¹⁷⁷ The deal was criticized politically, both on procedural and substantive grounds

From a procedural viewpoint, aldermen (Chicago counsel-members) claimed that they did not have access to the bid documents.¹⁷⁸ Even though a deal of these characteristics takes months to close, they only learned about the deal days before the vote. The Daley administration claimed to have worked on it for a long time but they were not forthcoming with any information. There was also no public comment period. The sudden raising of parking fees and the fines associated came as a surprise for the public. Outrage ensued.¹⁷⁹ In this regard, it is worth quoting the *Kootenai* case discussed above. The court deciding the case noted, regarding the procedural requirements, that:

[P]ublic trust resources may only be alienated or impaired through open and visible actions, where the public is in fact informed of the proposed action and

172. See Julie A. Roin, *Privatization and the Sale of Tax Revenues*, 95 MINN. L. REV. 1965, 1968 (2011); see also Christopher Serkin, *Public Entrenchment Through Private Law: Binding Local Governments*, 78 U. CHI. L. REV. 879, 895 (2011).

173. Fisher, *supra* note 9.

174. *Id.*; Ben Joravsky, *FAIL, Part One: Chicago's Parking Meter Lease Deal*, CHI. READER (Apr. 9, 2009), <https://www.chicagoreader.com/chicago/features-cover-april-9-2009/Content?oid=1098561>.

175. See Ben Joravsky, *FAIL, Part Three: The Insiders*, CHI. READER (June 18, 2009), <https://www.chicagoreader.com/chicago/the-parking-meter-fiasco-part-iii/Content?oid=1127436>.

176. Pablo Ros, *Chicago Parking Meters: An Outsourcing Fiasco*, AFSCME, <https://www.afscme.org/news/publications/newsletters/works/works-fall-2013/chicago-parking-meters-an-outsourcing-fiasco> (last visited Jan. 19, 2019).

177. See Joravsky, *supra* note 175.

178. Molly Ball, *The Privatization Backlash*, ATLANTIC (Apr. 23, 2014), <https://www.theatlantic.com/politics/archive/2014/04/city-state-governments-privatization-contracting-backlash/361016/>.

179. See Fisher, *supra* note 148.

has substantial opportunity to respond to the proposed action before a final decision is made thereon.¹⁸⁰

In addition, the City itself, governed by Mayor Rahm Emanuel since 2011, has reportedly received bills from Chicago Parking Meters amounting to \$40 million for spaces taken out of service for street repairs, street festivals, as well as for abuse of issuing handicap permits.¹⁸¹ All things considered, from a substantive perspective, it is difficult to affirm that the City retained enough control over the company, and thus, the parking meters and the street. This runs counter to the principles governing public property.¹⁸²

Lastly, the public trust doctrine can offer some transferable way out to the City. In the *Audubon* decision, the court held that government “is not confined by past allocation decisions which may be incorrect in light of current knowledge or inconsistent with current needs.”¹⁸³ Outsourcing the management of parking meters does not need to amount to an abdication of control. The City of Chicago could have negotiated a deal where it retained enough control over fees and the use of the street. Further, the City could have put forward some program to ensure that those priced-out could still park, or enjoy better public transportation.¹⁸⁴

B. TRADABLE PROPERTY RIGHTS

The second recipe to solve the parking scarcity problem is property rights. Cheap curbside parking becomes an open commons. In his famous article *Tragedy of the Commons*, Hardin proposes property rights as a solution to the overexploitation of the commons.¹⁸⁵ Assigning property rights over a resource makes the owner internalize the costs and benefits, and manage the property to ensure its long-term viability. The current definition of the right to use a parking spot and occupy it for a certain amount of time falls short of what an economist will prescribe because it is not tradable, and thus may not end up in the hands of who most values it. People adopt a territorial stance over a parking spot and,

180. *Kootenai Env'tl. All. v. Panhandle Yacht Club, Inc.*, 671 P.2d 1085, 1091 (Idaho 1983) (emphasis omitted).

181. Editorial, *Chicago Parking Meter Deals Needs Changes*, CHI. TRIB. (June 2, 2013), http://articles.chicagotribune.com/2013-06-02/opinion/ct-edit-meters-20130602_1_chicago-parking-meters-llc-chicago-city-council-aldermen.

182. It is worth noting that a conveyance to Loyola University of certain river bank properties in Chicago was struck down for similar reasons. *Lake Mich. Fed'n v. U.S. Army Corps of Eng'rs*, 742 F. Supp. 441, 445 (N.D. Ill. 1990).

183. *Nat'l Audubon Soc'y v. Superior Court*, 658 P.2d 709, 728 (Cal. 1983).

184. See N.Y. STATE OFFICE OF PARKS, RECREATION & HISTORIC PRES., *supra* note 127. For an account of how transportation affects low-income populations in a positive manner, see generally Raj Chetty & Nathaniel Hendren, *The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects*, 133 Q. J. ECON. 1107 (2018); Raj Chetty & Nathaniel Hendren, *The Impacts of Neighborhoods on Intergenerational Mobility II: County-Level Estimates*, 133 Q. J. ECON. 1163 (2018).

185. Hardin, *supra* note 39, at 1245; see also Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 351–54 (1967); James E. Krier, *Evolutionary Theory and the Origin of Property Rights*, 95 CORNELL L. REV. 139, 140 (2009).

having searched and waited for it, may consider it a fruit of their labor to which they are entitled,¹⁸⁶ when they only have a temporary, non-tradable license to use it. Making parking spots tradable would ensure that parking is allocated to the highest-value user.

Property rights are not static. When a good becomes scarce (demand outstrips supply), it becomes valuable, and property rights are likely to evolve, either by being created in the first place (as in Demsetz's example of the beaver's fur for the Native American hunters of the Labrador Peninsula),¹⁸⁷ or by being redefined. Additionally, technological changes can render delineation and enforcement of property rights feasible or inexpensive where it was not previously so,¹⁸⁸ as barbed wire showed in the American West.¹⁸⁹ Furthermore, technology can reduce transaction costs, making transfers over certain previously underutilized assets much easier.¹⁹⁰ For example, private garages and driveways in Toronto can be temporarily shared by their owners for parking purposes thanks to apps designed for this purpose.¹⁹¹

Several of these factors prompting a redefinition of property rights and a reduction of transaction costs in curbside parking coalesced in the 2010s. Parking scarcity was acutely felt in cities like San Francisco and Boston. Apps were all the rage, and tech entrepreneurs realized that there was a niche in parking. These entrepreneurs developed apps where a driver could sell their parking spot or, more accurately, the right to temporarily occupy a parking spot on the curbside. The buyer acquired it on the online platform, and then drove to the spot, where the seller was waiting to vacate it. It is axiomatic for a secondary market to emerge when a good is priced below what the market price would be.¹⁹² But redefining property rights over segments of public streets is more contentious and legally complex than over private driveways.¹⁹³ In curbside

186. JOHN LOCKE, SECOND TREATISE OF GOVERNMENT 18–19 (Richard Cox ed., Harlan Davidson, Inc. 1982) (1689).

187. Demsetz, *supra* note 164, at 352–53; Thomas W. Merrill, *Introduction: The Demsetz Thesis and the Evolution of Property Rights*, 31 J. LEGAL STUD. 331, 333 (2002).

188. Bruce Yandle & Andrew P. Morriss, *The Technologies of Property Rights: Choice Among Alternative Solutions to Tragedies of the Commons*, 28 ECOLOGY L.Q. 123, 167–68 (2001); *see also, e.g.*, Terry L. Anderson & P. J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163, 164–165 (1975).

189. Anderson & Hill, *supra* note 188, at 175.

190. The ideals of the sharing economy include increasing offers by making available to the community unused private resources or broadening the group of people with access to the resources in question. This is not applicable to curbside parking. Parking is scarce and the apps price out a segment of the population and not everyone has the technology to access the sharing economy apps. Kellen Zale, *Sharing Property*, 87 U. COLO. L. REV. 501, 536–37 (2016).

191. Vanessa Lu, *Parking Apps Will Allow Owners to Rent Out Parking Spots by the Hour*, TORONTO STAR (May 21, 2015), <https://www.thestar.com/business/2015/05/21/parking-apps-will-allow-owners-to-rent-out-parking-spots-by-the-hour.html>.

192. *See* Gavett et al., *supra* note 44.

193. In a news release, the City of San Francisco made clear that people are free “to rent out their own private driveways,” just not the public streets. Elizabeth Weise, *SF City Attorney: No Renting out Public Parking Spaces*, USA TODAY (June 23, 2014, 12:41 PM), <https://www.usatoday.com/story/tech/2014/06/23/san-francisco-rent-public-parking-space-monkey-parking-sweetch-parkmondo/11263723/>.

parking, the seller had to wait for the buyer to arrive because he could not exclude third parties from occupying the spot if he vacated it.¹⁹⁴ The driver had a right to use the spot, but it was not tradable and it did not include the right to exclude others. That is, the holder of the right to use a parking spot cannot enforce those transactions against third parties.¹⁹⁵ But, at the least, the apps modified the first-in-time principle that normally operates in curbside parking. Where the apps operated, the person entitled to a parking spot was not whoever arrived first to the vacant spot, but who agreed to pay a price online. While a complete redefinition of parking property rights did not occur, the experience illustrates some of the problems that such a strategy would entail. As shall be seen, it would be incompatible with the principles listed in Subpart II.A.7.

Those apps were short-lived, however, as municipalities banned them.¹⁹⁶ The municipalities did not buy the argument put forward by the app companies that they were only selling information,¹⁹⁷ and thus were protected by free speech.¹⁹⁸ The ban can be read as a way for the municipalities to shut down competitors: those who are making money where the municipalities cannot. However, beyond that public choice reading, the principles underlying the management of public property also explain the ban. Those principles were reflected in the regulations that the municipalities based their decisions on. The apps allowed private parties to profit from property owned by the public, pricing out a segment of the population, and reducing control by the municipality. Not only were city councils against the apps; the public was too. While we may accept, albeit reluctantly, when searching for a spot that people reserve a parking spot for a friend or a relative, the reservation via the app was not well-received. The apps were labeled #jerktech.¹⁹⁹ Reservation of a spot in public-owned property, by means of a price, was perceived as free-riding from the public. The ordinances and responses of each municipality will be analyzed next.

194. See Ann-Marie Alcantara, *Parking App Asks: What's Wrong with Paying for Someone Else's Spot?*, MASHABLE (May 17, 2014), <https://mashable.com/2014/05/17/monkeyparking-san-francisco/#9Fdu2Ms9OgqI>.

195. Kochan argues that the sharing economy is based on the premise that whatever one shares is something that it is hers. Ownership is a prerequisite to being able to use or share a stick in the bundle of rights associated with that ownership. Donald J. Kochan, *I Share, Therefore It's Mine*, 51 U. RICH. L. REV. 909, 910 (2017). Granted, people adopt a territorial stance over a parking spot and, having searched and waited for it, they may consider it a fruit of their labor to which they are entitled. LOCKE, *supra* note 186, at 18–19. But in the parking realm the right to share a parking spot is not property in the way Kochan suggests—private parties are making profits out of a right they do not own. In addition, while the sharing economy is seen as sharing underutilized resources, Zale, *supra* note 190, at 527–33, and as an alternative to the capitalist economy, see generally Rashmi Dyal-Chand, *Regulating Sharing: The Sharing Economy as an Alternative Capitalist System*, 90 TULANE L. REV. 241 (2015), in the case of the parking apps, both statements fail.

196. Streitfeld, *supra* note 8.

197. Adam Vaccaro, *Sorry, You Can't Sell Me on Pay-for-Public-Parking Apps*, BOSTON.COM (July 12, 2014), <https://www.boston.com/news/technology/2014/07/12/sorry-you-cant-sell-me-on-pay-for-public-parking-apps>.

198. See Jerold Chinn, *MonkeyParking Defies City's Cease-and-Desist*, SF BAY (June 27, 2014), <https://sfbay.ca/2014/06/27/monkeyparking-defies-citys-cease-and-desist/> (arguing the cease-and-desist violated free speech).

199. Constine, *supra* note 149; Harford, *supra* note 149.

1. Boston: Haystack

Finding parking in downtown Boston is a daunting task and certainly one to which the idiom “looking for a needle in a haystack” can be applied. Haystack, an aptly named app, promised to ease the parking travails of Bostonians. The app matched users occupying parking spots—metered or not—with users looking for a parking spot and allowed the former to “sell” “their” spot to the latter. The average price was \$3, but prices could be higher as long as they did not go over the established cap of \$15. Haystack only operated for some months during the year 2014, and the Baltimore-based start-up behind it is no longer in business. Haystack experienced death-by-regulation. The City of Boston Ordinance 1310—“an ordinance prohibiting the selling, leasing, or reserving of public ways in the City of Boston”—that passed in August 2014²⁰⁰ was the weapon. The Ordinance aimed at ensuring “that all residents and visitors have equal and fair access to use of the public ways,” and amended the City of Boston Code by adding a new section prohibiting the selling, leasing, reserving, or facilitation of reserving of any street, way, highway, road or parkway, or portion thereof, under the City of Boston’s control.²⁰¹

The Ordinance was aimed at banning the operation of Haystack, and it succeeded. Haystack’s CEO (Eric Meyer) participated in an August 13, 2014, public hearing on the ordinance.²⁰² Mr. Meyer asked the City Council to allow the app to operate for a longer period of time before reaching a final judgment, and to let the market settle whether the app was harming the City.²⁰³ Mr. Meyer also highlighted the benefits to congestion and the environment.²⁰⁴ Mr. Meyer argued that the Ordinance would have a chilling effect on innovation. A councilman responded that “while progress happens because of change not all changes are progress.”²⁰⁵

In the hearings, councilors expressed their worries about a slippery slope leading to for-profit business enterprises targeting public benches or public tennis courts in parks.²⁰⁶ Councilors feared that the price would go up, affecting equal access.²⁰⁷ The councilors defended other sharing-economy business

200. BOS., MASS., MUN. CODE ch. 16, § 16-12.43 (2017); *see also* Steve Annear, *Haystack Parking App Could Be Stalled by Proposed City Ordinance*, BOS. MAG. (Aug. 11, 2014, 1:36 PM), <http://www.bostonmagazine.com/news/blog/2014/08/11/haystack-app-city-council-hearing/>; Garrett Quinn, *Boston City Council Bans Parking Apps like Haystack*, MASSLIVE (Aug. 20, 2014), http://www.masslive.com/news/boston/index.ssf/2014/08/boston_city_council_passes_ban.html.

201. MUN. § 16-12.43; *see also* Annear, *supra* note 200; Quinn, *supra* note 200.

202. David L. Harris, *Boston City Council Votes to Ban Haystack Parking App*, BALT. BUS. J. (Aug. 20, 2014, 2:23 PM), <https://www.bizjournals.com/baltimore/news/2014/08/20/boston-city-council-votes-to-ban-haystack-parking.html>.

203. Haystack, *Haystack CEO Defends Parking Innovation*, YOUTUBE (Aug. 13, 2014), <https://www.youtube.com/watch?v=RBLTtFATEk> (showing Haystack Chief Executive Eric Meyer speaking at a Boston City Council hearing on a proposed ordinance designed to prohibit Haystack’s service in the city).

204. *Id.*

205. *Id.*

206. *Id.*

207. *Id.*

models, such as Uber or Zipcar, and distinguished them from Haystack by pointing out that Uber and Zipcar deal with privately-owned assets, not public property.²⁰⁸ The councilors further claimed that current parking revenues benefited the population as a whole, and that in many cases, the City does not even charge residents for parking.²⁰⁹ Other concerns expressed during the hearings included the risk of distracted driving; and the risk of “street rows” (quarrels between users and non-users of Haystack).²¹⁰ Mr. Meyer argued that the terms of use of the app required the user to follow local regulations, for instance, forcing a driver to forfeit the sale and let a non-user park if required.²¹¹ The purpose for surrendering the parking spot was not controlled, and could incentivize individuals to hoard spots for sale when demand is higher, solely for making money.²¹² Mr. Meyer claimed that the app could have technology built in to avoid hoarding of parking spaces.²¹³ Thus, it could limit the number of spots a person could trade and could track the location via GPS.²¹⁴ But, Mr. Meyer was not successful in convincing the local councilmen. The day after the hearing, Haystack was banned.

2. *San Francisco: MonkeyParking, ParkModo, and Sweetch*

In the summer of 2014, the San Francisco City Attorney sent cease-and-desist letters to the companies running the following two curbside-parking apps: MonkeyParking²¹⁵ and ParkModo.²¹⁶ Those letters had a chilling effect on Sweetch, a third company.²¹⁷ MonkeyParking, an app launched in Rome, Italy, and San Francisco, encouraged drivers in its Twitter account to “make #money when you leave a #parking spot.”²¹⁸ Users could either offer a parking spot they were about to vacate or bid for it. The app would facilitate the ensuing

208. *Id.*

209. *Id.*

210. *Id.*

211. *Id.*

212. *Id.*

213. *Id.*

214. *Id.*

215. Cease-and-Desist Letter from Dennis J. Herrera, S.F. City Attorney, to Paolo Dobrowolny, CEO, Monkey Parking (June 23, 2014), <https://www.sfcityattorney.org/wp-content/uploads/2015/07/S.F.-City-Attorney-letter-to-Monkey-Parking.pdf>; Lydia O'Connor, *This App Sums Up Why Everyone Hates Silicon Valley*, HUFFINGTON POST (May 7, 2014, 9:34 AM), https://www.huffingtonpost.com/2014/05/07/monkey-parking-app-san-francisco_n_5276536.html.

216. Cease-and-Desist Letter from Dennis J. Herrera, S.F. City Attorney, to Dan Shifrin, Founder, ParkModo (June 25, 2014), <https://www.sfcityattorney.org/wp-content/uploads/2015/07/S.F.-City-Attorney-letter-to-ParkModo.pdf>; see also Josh Constine, *SF Sends Cease-and-Desist to Apps Selling Public Parking Spots*, TECHCRUNCH (June 23, 2014), <https://techcrunch.com/2014/06/23/parking-apps/>.

217. See Joey Cosco, *Banned San Francisco Parking App Goes Open Source to Find a Solution to SF's Parking Problem*, BUS. INSIDER (Aug. 4, 2014, 3:18 PM), <https://www.businessinsider.com/sweetch-freetch-banned-san-francisco-parking-app-open-source-2014-8>.

218. Monkey Parking (@MonkeyParking), TWITTER (Mar. 19, 2014, 10:47 AM), https://twitter.com/MonkeyParking/status/446342248121131008/photo/1?ref_src=twsrc%5Etfw%7Ctwcamp%5Etfw%7Cterm%5E446342248121131008&ref_url=https%3A%2F%2Fblog.sfgate.com%2Ftechchron%2F2014%2F05%2F05%2Fsell-your-s-f-street-parking-spot-for-20%2F.

transaction, which would be considered completed once the successful bidder was actually allowed to park. Upon completion, the price was transferred to the “seller’s” bank account, except for a 20% commission kept by MonkeyParking.

ParkModo did not even launch. It was targeted by the City Attorney after a job listing was posted on Craigslist. According to the post, candidates willing to occupy prime parking spots from 5:30 PM to 9:00 PM in order to sell those spots through the app would be paid \$13 per hour.²¹⁹ Sweetch’s initial business model²²⁰ was similar to that of MonkeyParking with some caveats. The “buyer” would pay a \$5 flat-fee to park and the “seller” (or the person who would “help a Sweetch buddy park”) would get a \$4 credit to use in the app or to donate it to charity (the extra \$1 would cover the costs of running the app).²²¹ The main difference between Sweetch and the other two apps is the absence of cash transfers between the users.

The City Attorney considered the app’s business model to be premised on unlawful transactions and an unfair business practice violating the California Unfair Competition Law.²²² Other allegations were also made in the letter, such as that the app was increasing the possibility of distracted driving, since it may promote the use of cell-phones while driving.²²³ But more importantly, for the purposes of this Article, the privatization of the curbside violated the city’s Police Code. In San Francisco, there was no need to pass a new ordinance.²²⁴ According to the City Attorney,²²⁵ not only the start-ups operating the apps, but also the app users themselves, were violating San Francisco Police Code, section 63(b), which states:

It shall be unlawful for any person, firm or corporation to enter into a lease, rental agreement or contract of any kind, written or oral, with or without compensation, for the use of any street or sidewalk.²²⁶

219. Patrick Hoge, *App for Selling Public Parking Spots Exits San Francisco*, S.F. BUS. TIMES (July 1, 2014, 8:00 PM), <https://www.bizjournals.com/sanfrancisco/blog/techflash/2014/06/app-for-selling-public-parking-spots-exits-san.html>.

220. The original business model was later amended as a result of communications with the City Attorney’s Office. Sweetch eliminated the \$5 flat-fee. Leslie Nguyen-Okwu, *Sweetch Parking App Adapts to City’s Demands*, MISSION LOC. (July 21, 2014, 5:01 PM), <http://web.archive.org/web/20150518084401/https://missionlocal.org/2014/07/sweetch-parking-app-adapts-to-citys-demands/>. In other words, the sellers and the company running the app forwent the \$4 and \$1 payments, respectively. However, the app was put on hold after operating for a while under the amended business model. Press Release, City Attorney of S.F., *All Three Illegal Parking Apps on Hiatus in S.F. as Herrera’s Cease-and-Desist Deadline Passes* (July 11, 2014), <https://www.sfcityattorney.org/2014/07/11/all-three-illegal-parking-apps-on-hiatus-in-s-f-as-herrerass-cease-and-desist-deadline-passes/>.

221. Selena Larson, *A New Parking App Wants You to Share Something You Don’t Own*, READWRITE (June 21, 2014), <https://readwrite.com/2014/06/21/sweetch-parking-mission-san-francisco/>.

222. *Id.*

223. Cease-and-Desist Letter from Dennis J. Herrera, *supra* note 216.

224. *See* S.F., CAL., POLICE CODE art. 1, § 63 (2018).

225. Press Release, City Attorney of S.F., *San Francisco Tells Monkey Parking to Drop Mobile App for Auctioning City Parking Spots* (June 23, 2014), <https://www.sfcityattorney.org/wp-content/uploads/2015/07/Monkey-Parking-Cease-and-Desist-Demand-Presskit.pdf>.

226. POLICE § 63(b).

MonkeyParking tried to pursue its business model in other municipalities.²²⁷ Probably aiming to make the app more appealing to municipalities, the start-up even envisioned mechanisms to share revenue with municipalities.²²⁸ By doing so, the start-up seemed to be paying little attention (again) to the applicable laws of curbside parking.

3. *Are Tradable Parking Rights Compatible with the Public-Property Nature of the Curbside?*

The trading mechanisms designed by the apps are not compatible with the public-property nature of the curbside. First, the apps' prices are not dictated by the cost of providing parking or any other social cost related to parking scarcity, like congestion or pollution, as required by the principles guiding the management of public property require. Instead, the apps' prices are based on the opportunity cost of the sellers and buyers. Second, by increasing the price, the apps are making it unaffordable for a segment of the population who before may have been able to pay the low fees combined with the cost in terms of time spent searching for a spot. The apps' prices make it difficult for that segment of the public to access and use curbside parking without any compensation. Even though section 63(b) of the San Francisco Police Code and Boston's Ordinance 1310 ("[a]n ordinance prohibiting the selling, leasing or reserving of public ways in the City of Boston") were used to stop the apps, the bans in Boston and San Francisco were based on local regulations that reflect the idea that cities need to keep control of the streets. The trade of parking spots could comply with those principles if the cities were to fix the prices and equity concerns that would be built into the apps by, for example, giving vouchers to low-income car owners and preventing hoarding of spaces.

C. VARIABLE PRICING

The economist's solution to scarcity is to reduce demand by increasing price. A slightly more refined version of this solution is variable pricing,²²⁹ also known as dynamic or performance pricing.²³⁰ Dynamic pricing balances supply and demand by charging a higher price when demand peaks.²³¹ William Vickrey, a Nobel Prize winner, recommended the use of variable pricing for parking.

227. Gene Maddaus, *Kicked Out of San Francisco, MonkeyParking App Plans a Fresh Start in Santa Monica*, L.A. WKLY. (Sept. 18, 2014, 6:00 AM), <http://www.laweekly.com/news/kicked-out-of-san-francisco-monkeyparking-app-plans-a-fresh-start-in-santa-monica-5080436>.

228. *Id.*

229. Shoup advocates for this contentious but much more sensible policy for improving the situation curbside parking. Donald Shoup, *The Right Price for Curb Parking*, CATO UNBOUND (Apr. 25, 2011), <https://www.cato-unbound.org/print-issue/369>.

230. Donald Shoup, *The Price of Parking on a Great Street*, PARKING TODAY, Feb. 2009, at 22.

231. James F. Peltz, *Why 'Dynamic' Pricing Based on Real-Time Supply and Demand Is Rapidly Spreading*, L.A. TIMES (Mar. 14, 2016, 3:00 AM), <http://www.latimes.com/business/la-fi-agenda-dynamic-pricing-20160314-story.html>. It is different from price discrimination. Price discrimination bases price variation on the willingness to pay of the individual consumer or type of consumer.

However, when Vickrey made the recommendation in the 1950s, the technology to implement variable pricing was lacking. In 1993, Vickrey himself labeled it as one of his “innovative failures in economics.”²³² The passing of time has proven him wrong.

Variable pricing has been gaining traction as a response to curbside parking scarcity and the congestion and pollution costs that curbside parking generates. In fact, the variable pricing parking fees are not only embodying the ideas of Vickrey, but also of another economist, Arthur C. Pigou. Pigou proposed taxes to make those creating externalities realize the full social cost of their actions.²³³ By pricing parking higher at peak congestion times, the municipality is going beyond traditional user fees and making drivers realize the congestion costs they impose on others.²³⁴ Variable pricing may achieve similar results to other successful initiatives to achieve the goals of reduced congestion and pollution. Among such initiatives, for example, Paris, France only permits cars with odd-numbered plates to travel downtown streets on certain days; cars with even-numbered plates are allowed to do so on the remaining days.²³⁵ Also, London charged drivers to access traditionally congested areas.²³⁶ Those initiatives would also reduce the need for parking, showing the endogeneity of the parking problem.

Variable parking balances supply and demand by charging a higher price when demand peaks. In its curbside parking version, the price of curbside parking surges when (and where) curbside parking becomes highly sought-after. As the price of curbside parking becomes higher, the number of drivers willing to pay the price plummets, and the number of people using public transport and carpools, or simply walking, increases. A precursor to variable pricing for curbside parking has existed for a long time in many downtowns. Many pay-to-park zones are only so during business hours, but not at night or Sundays when demand is lower. However, to achieve any significant improvement in congestion and pollution terms, a more refined scheme is needed. Current technology allows for more tailored systems.²³⁷ Among the few municipalities

232. Todd Litman, *How to Do Efficient Congestion Pricing (or Thoughts on William Vickrey)*, MKT. URBANISM REP. (Aug. 24, 2018), <https://marketurbanismreport.com/efficient-congestion-pricing-thoughts-william-vickrey/>.

233. N. GREGORY MANKIW, *ESSENTIALS OF ECONOMICS* 203 (Jack W. Calhoun et al. eds., 6th ed. 2012). See generally ARTHUR C. PIGOU, *THE ECONOMICS OF WELFARE* (4th ed. 1920) (proposing taxes to make those creating externalities realize the full social cost of their actions).

234. Tax scholars argue that Pigouvian fees do not have a great fit in the current tax and fee dichotomy. Scharff proposes, to end the confusion, to call these Pigouvian style measures “fiscal regulatory tools” and subject them to two requirements: set the price approximately at the level of the externality and that the revenue will be reinvested in abating the externality. Scharff, *supra* note 93, at 41.

235. Katie Forster, *Paris Bans Cars with Even Plates in Third Day of Transport Restrictions to Ease Air Pollution*, INDEPENDENT (Dec. 8, 2016), <https://www.independent.co.uk/news/world/europe/paris-banned-cars-even-number-plates-pollution-latest-public-transport-air-smog-bans-a7462621.html>.

236. Jonathan Leape, *The London Congestion Charge*, 20 J. ECON. PERSP. 157, 159–60 (2006).

237. SHOUP, *supra* note 20, at xxiv–xxvi.

to adopt such a system, San Francisco stands out.²³⁸ SF Park establishes prices which vary per location and per time of the day, and which are only adjusted once a month.

Under variable pricing, the municipality does not set the prices to maximize revenue, but to maximize social benefit. Prices are fine-tuned to ensure the best combination of congestion, pollution reduction, and availability of spots. SF Park aims at achieving 15% vacancy of parking spots.²³⁹ In contrast, in the apps auctioning off parking spots, whether a driver is willing to sell his parking spot at a certain price to a driver who is ten minutes away depends on their opportunity cost, that is, what else could they be doing with that time.²⁴⁰ With the apps, the reduction in congestion is an externality, a positive one, but not something considered when asking a price for the driver's spot. To comply with the principles of public property management, a policy should set the price at the cost of the externality to achieve an efficient result, and parking apps do not set that price.

In contrast, San Francisco abides by the principles that should guide public management of public property by setting the price while considering the public benefits and while having a regulatory purpose other than revenue-making in mind. However, the access component embedded in those principles requires some careful consideration next.

SF Park establishes rates that vary per block, time of day, and day of the week. The minimum is \$0.50 per hour and the maximum is capped at \$7 per hour. Rates can be adjusted upwards up to \$0.25 and downwards up to \$0.50 once a month.²⁴¹ SF Park always charges the maximum amount near the San Francisco Giants ballpark (AT&T Park) when there are games scheduled. This could have a disproportionate effect on low-income fans. It is paradoxical that regulation of ticket scalping has been justified on, among others, access and fairness arguments,²⁴² but fairness has been largely ignored when it comes to curbside parking near the Giants' stadium. Such curbside parking is instrumental for leisure activities, such as going to a baseball game. But even more important is that it is instrumental for the daily commute of many low-income individuals working in downtown²⁴³ and living far away.²⁴⁴ Echo Rowe's story—who had

238. Gregory Pierce & Donald Shoup, *Getting the Prices Right*, 79 J. AM. PLAN. ASS'N 67, 78 (2013).

239. Dani Simons, *SFPark: San Francisco Knows How to Park It*, 23 SUSTAINABLE TRANSPORT 26, 26 (2012).

240. See DANIEL H. COLE & PETER Z. GROSSMAN, PRINCIPLES OF LAW AND ECONOMICS 2–3 (2005).

241. *How it Works: Pricing*, SFPARK, <http://sfpark.org/how-it-works/pricing/> (last visited Jan. 19, 2019).

242. Steven C. Highfield, *How Modern Trends and Market Economics Have Rendered Anti-Ticket Scalping Legislation Obsolete*, 59 DEPAUL L. REV. 697, 703 (2010) (listing other arguments such as fairness to the first seller who may not get the profit that resellers make or avoiding the nuisance created by the reseller near the stadium); Gregory M. Stein, *Will Ticket Scalpers Meet the Same Fate as Spinal Tap Drummers? The Sale and Resale of Concert and Sports Tickets*, 42 PEPP. L. REV. 1, 21 (2014).

243. See Dalmas, *supra* note 4.

244. *Mapping Displacement and Gentrification in the San Francisco Bay Area*, URB. DISPLACEMENT, <http://www.urbandisplacement.org/map/sf> (last visited Jan. 19, 2019). For an illustration of how housing prices have displaced workers to the suburbs, see Dougherty & Burton, *supra* note 28.

her truck removed and sold as a result of an accumulation of parking fines that she was not able to pay—illustrates how dependent some people are on curbside parking. One way to mitigate the access concern, and ensure that the public use of the streets is not affected, is to re-invest the parking revenue in public transportation. The re-investment could make variable pricing more popular.²⁴⁵

New York parks offer a good model in making variable pricing compatible with access. If parkland is converted into a different use, the municipality has to provide equal parkland elsewhere, according to the Land and Water Conservation Fund Act.²⁴⁶ To pass the equivalency test, the land has to meet three requirements: (1) it has to be of equal or greater fair market value; (2) it has to provide equivalent recreational usefulness; and (3) it has to be in a comparable location.²⁴⁷ Neither the size nor the usefulness have to be exactly identical.²⁴⁸ In the same way that parkland here or there are not perfect substitutes for each other, curbside parking is even less so. Creating free parking spaces in faraway areas of the city is of little help. But strategies like Park and Ride may work to everyone's interest where parking areas are built next to public transportation stops.²⁴⁹ Investing the revenues from variable pricing in public transportation, and offering parking in areas that connect via public transport with downtown or with neighborhoods where parking is expensive, can make variable pricing compatible with the principles guiding the management of public streets—and, thus, parking—in trust. In fact, early parking decisions allowed municipalities to invest fees from parking on the streets in municipally-run off-street parking and pool the resources from both to manage a unified parking system.²⁵⁰ In 1947, the New Hampshire Supreme Court, assessing the constitutionality of parking meters, stated that using parking meter fees for off-street parking was acceptable because, by removing cars from the road, it was a way of investing in the public highways.²⁵¹

SF Park has been using its revenue to implement some of these solutions, so as to make variable pricing compatible with access and fairness. San Francisco is reinvesting revenue to help cover the deficit of the Muni system,

245. Donald Shoup, an influential and pro-variable pricing parking scholar, advised that the revenue from the increased fees be earmarked for local districts in order to make variable pricing more popular. This is not exactly the same idea that is proposed by this Article. Shoup advocates the re-investment in the neighborhood, not only in public transportation. This, according to him, may, for example, mitigate the concerns that some business owners may have. See Shoup, *supra* note 230. Unpopularity is expected to subside. High prices may be unpopular, but what initially is perceived as unfair may evolve to become the new normal according to Kahneman, Knetsch, and Thaler. See Kahneman et al., *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, *supra* note 150.

246. 54 U.S.C. § 200305(f)(3) (2012); see also *Save Our Parks v. Kempthorne*, No. 06 Civ. 6859 NRB, 2006 WL 3378703 (S.D.N.Y. Nov. 15, 2006).

247. N.Y. STATE OFFICE OF PARKS, RECREATION & HISTORIC PRES., *supra* note 127, at 23–24.

248. *Id.* at 24.

249. Stuart Meek, *Park and Ride*, in *THE IMPLEMENTATION AND EFFECTIVENESS OF TRANSPORT DEMAND MANAGEMENT MEASURES: AN INTERNATIONAL PERSPECTIVE* 165 (Stephen Ison & Tom Rye eds., 2008).

250. See *Parr v. Ladd*, 36 N.W.2d 157 (Mich. 1949); *Cleveland v. City of Detroit*, 37 N.W.2d 625, 630 (Mich. 1949); *In re Op. of the Justices*, 51 A.2d 836, 839 (N.H. 1947).

251. *In re Op. of the Justices*, 51 A.2d at 839.

San Francisco's public transportation system.²⁵² By reinvesting the revenue in public transportation, SF Park ensures access to downtown, even if it is not the same type of access. Other cities, like Boston, are trying pilot projects of variable pricing in some of the most congested areas of the city, Back Bay and the Seaport District. Boston looked up to San Francisco, but Mayor Martin Walsh said, referring to pricing, that Boston's version would be "reasonable."²⁵³ However, even though the prices are a bit lower (the maximum hourly fee being capped at \$5 per hour), the current design does not seem to ensure access, an issue the councilmen were very concerned about during the hearings regarding Haystack's operation.²⁵⁴ Instead of reinvesting in public transportation, Boston's parking revenue is going to street maintenance.²⁵⁵ Street maintenance is in the public interest but would hardly benefit those who are excluded from parking in those very same streets. Public transportation in the Boston area is under the power of the county. Hence, Boston should collaborate with other public entities to reinvest the revenue in public transportation.

The public interest is better served with higher prices for parking that take into account the congestion cost but also ensure that the community's access to public property is not impaired. Variable pricing, with re-investment of the revenue that exceeds the costs of parking enforcement into the public transportation system, is an efficient solution that is also fair.

CONCLUSION

Curbside parking is instrumental to activities—voting, shopping, protesting, or going to the doctor—in many municipalities. As long as cars, self-driving or not, need to be parked somewhere, parking policies will have a great impact on how livable cities are.²⁵⁶ Municipalities' parking policies have to serve many goals. Parking scarcity is a challenge for many towns. It makes dreaded congestion and pollution even worse. Current allocation based on the first-in-time rule and low fees is not solving the problem. A standard economist will advise those municipalities to reduce demand and allocate parking to the highest-value users by increasing the price. But, the policy choices of municipalities searching for an efficient way to allocate parking are constrained. They are constrained not only by social attitudes, but by principles limiting the

252. S.F. MUN. TRANSP. AGENCY, DELIVERING PROGRESS: FY 2015–2016 ANNUAL REPORT 29 (2016), https://www.sfmta.com/sites/default/files/reports/2016/Delivering%20Progress%20SFMTA%20FY%202016%20Annual%20Report_0.pdf; Zachary Crockett, *San Francisco Parking Meters: A \$130MM Industry*, PRICEONOMICS (Jan. 10, 2014), <https://priceonomics.com/san-francisco-parking-meters-a-s130mm-industry/>.

253. Shaffer, *supra* note 11.

254. Haystack, *Haystack CEO Defends Parking Innovation*, *supra* note 203.

255. Shaffer, *supra* note 11.

256. While self-driving electric cars may well ease problems caused by the pollution coming from emission of combustion engines in the future, congestion may still be a problem. *Why Driverless Cars May Mean Jams Tomorrow*, ECONOMIST (Jan. 20, 2018), <https://www.economist.com/news/finance-and-economics/21735019-they-will-spare-world-neither-traffic-congestion-nor-infrastructure-expense-why>.

management of public property, including curbside parking that takes place on public property.

Efficiency-oriented policies translating into higher parking prices (privatization, tradable property rights, and variable pricing) must include mechanisms to ensure that the goal is not profit-making and that fair access is guaranteed to the public. This Article distills the principles that the management of public property must respect and shows where efficiency and fairness can be compatible and where they cannot. For example, sharing-economy entrepreneurs' attempts to disrupt the current economic model of curbside parking by making parking spots tradable on apps is not compatible. But variable pricing—where the municipality sets higher prices when demand is expected to be higher—can be compatible if the revenue is re-invested in public transportation. Public transportation ensures that those priced out no longer need their cars to do the activities where parking was previously instrumental.

As parking has shown, public property cannot be managed like private property. But there are other examples. Technology giants have faced public relations crises for ignoring the street view of property, as the criticism received by private company buses in Silicon Valley shows. Private company buses created quite the stir in San Francisco when using public bus stops.²⁵⁷ Another example of managing public property as if it were private is found in some beaches. Non-local surfers may be wary of going to certain locations where local surfers have appropriated the beaches. Attempting to surf in those locations means risking your car tires or even being the recipient of physical violence.²⁵⁸ Perhaps in the future, private companies will try to buy local beaches as the Maldivians are experiencing,²⁵⁹ and the principles limiting monetization of public property that this Article has analyzed will be helpful to deal with such a situation.

Public property and property rights over public property are fascinating topics of study. Curbside parking demonstrates that public property is something more than simply private property where the right holder happens to be a governmental entity. From a descriptive perspective, public property, and the limited private rights over it, deserve more attention by property law scholars even if doing so requires venturing into unfamiliar fields of the law, perusing municipal codes, or analyzing cases outside the property law and constitutional

257. Abigail De Kosnik, *Disrupting Technological Privilege: The 2013–14 San Francisco Google Bus Protests*, 19 PERFORMANCE RES. 99, 99 (2014).

258. Ben Mondy, *5 of Surfing's Most Fiercely Protected Local Breaks*, ADVENTURE SPORTS NETWORK (May 27, 2016), <https://www.adventuresportsnetwork.com/sport/surf/surfings-5-most-fiercely-protected-local-breaks/>; Garrett Therolf, *'Gang Mentality' of Middle-Age Surfers Keeps Outsiders off Palos Verdes Estates Waves*, L.A. TIMES (July 16, 2015, 7:23 AM), <http://www.latimes.com/local/california/la-me-lunada-bay-20150716-story.html>.

259. In the Maldives, beaches have been privatized. First de facto by corrupt local cops requiring payments to let locals surf, and now by private hotels. Greg Thomas, *Private Paradise: Surfers in the Maldives Are Furious About Foreign Companies Buying up Their Home Breaks. But Can It Be Stopped?*, SURFER (Nov. 10, 2014), <http://www.surfer.com/features/maldives-private-paradise/>.

canons. From a normative perspective, this topic requires finding a manner in which to make the limits of management and use of public property compatible with the economic-efficiency toolbox. This Article has attempted to provide the foundation to support the much needed descriptive and normative scholarship on public property and the property rights over public property.