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# What Would Coase Do? (About Parking Regulation)

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Article

\*89 WHAT WOULD COASE DO? (ABOUT PARKING REGULATION)

Michael Lewyn [\[FNa1\]](#)

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Introduction

Externalities are “costs or benefits imposed on third parties by another individual's voluntary action.” [\[FN1\]](#) One of the leading early “Law and Economics” theoreticians, Ronald Coase, [\[FN2\]](#) has written that government regulation may be necessary to protect individuals from externalities; for example, regulations that protect neighboring properties from the harm created by a factory's smoke. [\[FN3\]](#)

\*90 Coase points out, however, that government regulation may create its own externality-like harms, [\[FN4\]](#) noting that because the costs of regulation “include all the consequences which follow from [such regulation]. . . it will no doubt commonly be the case that the gain which would come from regulating the actions which give rise to the harmful effects will be less than the costs involved in Government regulation.” [\[FN5\]](#) In other words, government regulation is inappropriate where the social harm caused by regulation outweighs the harm prevented by such regulation.

This article analyzes one form of regulation that might fit into this category: municipal minimum parking requirements. American municipalities typically require landowners to provide visitors and guests with ample amounts of parking. [\[FN6\]](#) For example, Jacksonville, Florida requires apartment complexes to provide 1.75 parking spaces per one-bedroom apartment [\[FN7\]](#) - despite the fact that sixteen percent of Jacksonville's renter households do not even own one car. [\[FN8\]](#) Commercial landowners are subjected to similarly restrictive regulations; for example, most American cities require office buildings to provide four parking spaces per 1000 square feet of \*91 office space. [\[FN9\]](#) Because four parking spaces consume about 1200 square feet of space, [\[FN10\]](#) this means that a commercial landlord must allocate the majority of its land to parking - land that could otherwise have been used to create housing, shops, or offices.

This article begins by describing the externalities that minimum parking requirements are designed to prevent - most notably the congestion, pollution, and greenhouse gas emissions that occur when motorists drive around a city searching for scarce parking, [\[FN11\]](#) as well as neighborhood residents' loss of parking spaces to motorists who wish to patronize nearby businesses. [\[FN12\]](#)

This article suggests that minimum parking requirements may in fact increase, rather than reduce, congestion, pollution and greenhouse gas emissions, and thus create, rather than reduce, some of the very harms they were enacted to prevent. This is the case for several reasons. First, minimum parking requirements, by artificially increasing the supply of parking, reduce the cost of parking and thus force landowners to not only build parking lots, but also give parking to motorists for free. [\[FN13\]](#) Experiments involving priced parking show that people drive more when parking is cheaper and drive less when parking is not subsidized by employers. [\[FN14\]](#) For example, in one Los Angeles-area workplace, an employer raised the price of parking for solo drivers to two-thirds of the market rate. [\[FN15\]](#) As a result, the percentage of workers driving alone to work was halved. [\[FN16\]](#) Because commuters' transportation choices are at least somewhat price-sensitive, [\[FN17\]](#) minimum parking requirements lead to more automobile trips.

\*92 Second, minimum parking requirements artificially increase the distance between housing and jobs, because land used for parking cannot be used for housing or commerce. [\[FN18\]](#) Residents of sprawling, low-density areas tend to be highly dependent on automobiles for most daily tasks because they are less likely to live within walking distance of public transit and other amenities. [\[FN19\]](#) Consequently, minimum parking requirements increase driving, and reduce economic welfare by depriving people who prefer more compact, less automobile-oriented neighborhoods from consuming their preferred bundles of goods and services.

Third, minimum parking requirements discourage walking, by encouraging landowners to surround their buildings with parking lots. [\[FN20\]](#) Where shops and offices are surrounded by a sea of parking, they are unpleasant places for pedestrians, because pedestrians must waste time walking through parking lots and risk their lives dodging automobiles. [\[FN21\]](#) When walking is unpleasant, people drive more and walk less.

Both scholarly and popular commentators claim that Americans have a love affair with the automobile. [\[FN22\]](#) But even in the United States, minimum parking requirements increase driving which leads to more congestion, pollution and greenhouse gas emissions than would otherwise be the case.

Minimum parking requirements also have negative results that are not directly related to increased automobile travel. The reduction in density induced by minimum parking requirements may not significantly affect development in suburban areas where land for parking is cheap and plentiful. But in urban neighbourhoods where every inch of land is already developed, a landowner may not be able to build as much as he or she would like and still comply with \*93 minimum parking requirements. Thus, minimum parking requirements artificially reduce the supply of residences, shops and offices in older, established neighbourhoods and make newer, still-developing suburban areas more attractive for investments. [\[FN23\]](#)

Finally, this article discusses the likely outcomes of allowing market forces to dictate parking policy, and suggests alternative policies less drastic than abolition of minimum parking requirements which reduce the social costs of such regulations. This article endorses abolition of minimum parking requirements, but adds that even milder reforms would reduce the negative externality-like consequences of minimum parking requirements.

Part II of this article lists the externalities which minimum parking requirements seek to cure. Part III explains the negative effects of such requirements. Part IV discusses the likely results of abolition, and Part V lists alternatives that are less radical than abolition, but reduce the harm caused by existing regulations.

## II. The Externalities Addressed By Minimum Parking Requirements

Municipalities enact minimum parking requirements in order to limit two externalities: (1) “cruising” [\[FN24\]](#) and (2) “spillover parking.” [\[FN25\]](#) Each issue will be addressed in turn.

### A. Cruising

Where parking is scarce, drivers may drive around a neighborhood (or “cruise”) in search of the most convenient parking space. [\[FN26\]](#) In *Stroud v. City of Aspen*, [\[FN27\]](#) the Colorado Supreme Court suggested that drivers cause pollution when they “mov[e] slowly around block after block seeking a place to park,” [\[FN28\]](#) and that minimum parking requirements may solve this problem by requiring those “who invite large numbers of people to their establishments—who in turn clog the \*94 streets, air and ears of our citizens—to provide parking facilities so that automobiles may be placed in a stall and stilled.” [\[FN29\]](#)

The *Stroud* court's analysis suggests that the harm caused by cruising is an externality - that is, when a business fails to build parking spaces for its customers, the business profits from its refusal to spend money on parking, but the community as a whole suffers from the traffic congestion and pollution generated by cruising. [\[FN30\]](#) Minimum parking requirements prevent this externality by requiring businesses to install parking lots, so that customers can park as quickly as possible rather than wasting time and gasoline trying to find parking.

Coase points out that in some situations, government regulation is not necessary to prevent externalities: the damage-causing business could, after private negotiations, compensate the victim of its activity, or the victim could pay the business to stop causing the damage. [\[FN31\]](#) But Coase admits that such a private settlement is unlikely where “a large number of people are involved and in which therefore the costs of handling the problem through the market . . . are very high.” [\[FN32\]](#)

Cruising clearly is such a situation for three reasons. First, the congestion and pollution caused by cruising may affect many people near the cruising location; other drivers through congestion, and pedestrians because they breathe air polluted by cruising vehicles. Such a large group of people cannot easily be organized to request compensation. Second, the cruising victims might not even know if they were being victimized or by whom. Even if cruising victims knew that traffic congestion was more obnoxious than usual, they would not be able to identify whose customers had created such congestion, and thus might be unable to bargain with that business. Third, some of the victims of cruising might not be alive today, or \*95 might not live in the United States. [\[FN33\]](#) Automobiles are a major emitter of carbon dioxide (“CO<sub>2</sub>”), [\[FN34\]](#) a greenhouse gas that may cause climate change, [\[FN35\]](#) and today's emissions may cause harm for decades to come. [\[FN36\]](#)

## B. Spillover Parking

Another justification for minimum parking requirements is public concern over “spillover parking;” the possibility that if business A's customers cannot park in A's parking lot, their cars will “spill over” into residential neighborhood B, thus depriving B's residents of parking spaces. [\[FN37\]](#)

Spillover parking is also arguably an externality: Business A benefits from not spending money on parking, but B's residents are harmed by not being able to park near their homes. Here too, government regulation may prevent the externality. If A builds a huge parking lot, its customers will have little reason to travel into B to park their vehicles.

Additionally, like cruising, spillover parking is unlikely to be settled through negotiations between the affected parties. Because residents of a neighborhood do not own public streets near their houses they have no property right to park on those streets, and \*96 accordingly have no bargaining power to negotiate effectively with a nearby business. Thus, government regulation is likely to address spillover parking more successfully than private negotiation.

## III. Negative Side Effects Of Minimum Parking Requirements

Although minimum parking requirements may solve the problems of cruising and spillover parking, these regulations create their own negative side effects, including encouraging driving (and thus increasing pollution and congestion) and discouraging infill development. [\[FN38\]](#)

### A. Why Parking Requirements Mean More Driving

As noted above, courts have justified minimum parking requirements as a way to stop the additional driving that results from cruising, and the congestion and pollution that result from such driving. [\[FN39\]](#) But in fact, minimum parking requirements may actually increase driving (and thus the congestion and pollution arising from driving), by (1) reducing the price of parking and thus of driving, (2) reducing population and employment density, thus making alternatives to driving less practical, and (3) making streets less pedestrian-friendly by encouraging businesses to place parking lots in front of their stores and offices. [\[FN40\]](#)

#### 1. The Subsidy Effect

Municipal parking requirements either directly require businesses and landlords to make parking free to customers, [\[FN41\]](#) or indirectly cause free parking by increasing the supply of parking, thus reducing the \*97 market price of parking down to zero. [\[FN42\]](#) As a result, ninety-nine percent of American driving trips end at a destination with free parking. [\[FN43\]](#) However, such ostensibly “free” parking arises from a government-mandated redistribution of wealth from businesses (and their tenants and customers, and thus from society as a whole) to motorists. This redistribution also causes more driving than that which would occur if parking were priced separately rather than being bundled with the costs of housing and other goods and services (as is the case when parking is free).

#### a. Transferring Wealth To Drivers

Minimum parking requirements force landowners to spend money building parking spaces. Estimates of the cost of parking spaces vary from about \$2,000 per space to as high as \$20,000 per space. [\[FN44\]](#) The cost of land is the primary factor affecting parking space cost; land for parking is more expensive in urban locations than in suburbs, where land tends to be more plentiful. [\[FN45\]](#)

Where parking is free or very inexpensive, landowners do not pass the cost of parking space construction to drivers, which means that as a practical matter, free parking subsidizes driving. Who pays for this subsidy? At first glance, it might seem that landowners pay, because they build the parking lots. But to some extent, landowners may pass the cost of free parking on to all of their customers. For example, a \*98 landlord might seek to recoup the cost of parking through higher rents for commercial and residential tenants. In turn, those tenants (if they are commercial tenants) may pass the costs of those higher rents to their customers. One study suggests, after consideration of a variety of direct and indirect costs, that each residential parking space may increase housing costs in the United States by about \$85,000 per unit. [\[FN46\]](#) Thus, minimum parking requirements function as a kind of hidden sales tax, increasing the price of goods and services for everyone. But the benefits of this “sales tax” go primarily to motorists, [\[FN47\]](#) and thus subsidize drivers at the expense of non-drivers.

In sum, minimum parking requirements, by increasing residential rents, commercial rents, and (less directly) the cost of other goods and services, require society as a whole to subsidize driving. Furthermore, because poorer Americans drive less than middle- and upper-class Americans, [\[FN48\]](#) these regulations effectively redistribute wealth from the poor to the middle and upper classes.

#### \*99 b. The Parking Subsidy Really Does Increase Driving

Numerous case studies show that free parking in fact increases automobile use. [\[FN49\]](#) For example, in 1974, the Canadian government stopped providing free parking to its employees in Ottawa. [\[FN50\]](#) Although the government still subsidized employee parking, the subsidy was reduced from 100% of parking cost to thirty percent. [\[FN51\]](#) The percentage of employees driving to work alone decreased from thirty-five percent to twenty-eight percent, and the percent using public transit increased from forty-two percent to forty-nine percent. [\[FN52\]](#)

The Ottawa study occurred in a downtown workplace with ample public transit, [\[FN53\]](#) but even in automobile-oriented suburban sites, reductions in parking subsidies affect driver behavior. [\[FN54\]](#) For example, in a suburb of Los Angeles with minimal transit service, [\[FN55\]](#) an employer raised the price of parking for solo drivers to two-thirds of the market rate. [\[FN56\]](#) Before parking rates were increased, ninety percent of workers drove alone to work, and six percent carpooled. [\[FN57\]](#) Afterwards, forty-six percent drove alone, and forty-eight percent carpooled. [\[FN58\]](#) In sum, parking is price-sensitive: free parking means more driving in general and more solo driving in particular, while priced parking leads to increased transit use (where public transit is \*100 available) and increased carpooling (where public transit is minimal or nonexistent).

Consequently, by reducing the price of parking, minimum parking requirements increase the number of cars on American roads, thus increasing traffic congestion and pollution from cars - ironically, precisely the ills that such regulations were designed to prevent. [\[FN59\]](#) As noted above, to the extent that minimum parking requirements

increase driving, they also increase greenhouse gas emissions, thus possibly imposing worldwide costs upon future generations. [\[FN60\]](#) Increased driving may also play a role in non-environmental harms. [\[FN61\]](#) For example, extra driving may lead to increased societal harm from automobile accidents. [\[FN62\]](#) In the United States, automobile collisions currently kill 40,000-45,000 people per year, and injure 2,000,000-3,000,000 more. [\[FN63\]](#)

## 2. Increasing Driving By Reducing Density

Land used for parking lots cannot be used for housing or commerce, and the extra space required for those parking lots artificially increases distances between residences, shops, and offices. [\[FN64\]](#) Thus, minimum parking requirements artificially reduce population and employment density. For example, in 1961, Oakland, California required apartment buildings to build one parking space \*101 per dwelling unit. [\[FN65\]](#) Within three years of this ordinance, the number of apartments per acre in Oakland had decreased by thirty percent. [\[FN66\]](#)

This result is probably fairly typical. The average one bedroom apartment in the United States includes 800 square feet of space. [\[FN67\]](#) If a landlord has 80,000 square feet of land, and uses all of it for housing, it can build 100 (80,000/800) apartments. But if the same landlord has to build a parking space for every unit, it obviously cannot build 100 apartments. This is because the average parking space includes 350 square feet of space, [\[FN68\]](#) and the landlord, in turn, must either purchase additional land, build smaller apartments, or build only about sixty-nine apartments. [\[FN69\]](#) The above discussion assumes that parking is placed aboveground. If parking is placed in underground garages, additional parking spaces would not affect density. However, garage parking is often more expensive than aboveground parking, and thus less likely to be installed. [\[FN70\]](#) Thus, a one-space-per-unit rule reduces density by thirty-one percent (from 100 apartments to sixty-nine apartments on the same land).

As a result, low density makes commuters more dependent on automobiles. Lower density means that fewer people can live within walking distance of a given destination. So, if fewer people can live within convenient walking distance of a bus or train stop, more people will have to drive to work, and the remaining non-drivers will have longer, less convenient commutes. [\[FN71\]](#) Similarly, if few people \*102 live within walking distance of a shop, job, or office, most people will have to drive to reach such destinations. [\[FN72\]](#) Hence, by reducing density, minimum parking requirements make walking and public transit less convenient, consequently increasing automobile-related congestion, pollution, and greenhouse gas emissions. [\[FN73\]](#)

It could be argued that low-density development actually reduces congestion and the resulting air pollution by artificially dispersing traffic among a wide variety of destinations. [\[FN74\]](#) But a recent study sponsored by the United States Department of Energy suggests that, on balance, compact, transit-oriented development reduces pollution. [\[FN75\]](#) In particular, the study found that doubling residential density reduces household vehicle miles traveled by five to twelve percent. [\[FN76\]](#) If increased density was accompanied by improved public transit and other supportive land use policies, household driving could be reduced by as much as twenty-five percent. [\[FN77\]](#) These reductions in driving would, in turn, reduce United States greenhouse gas emissions by eight to eleven percent by 2050. [\[FN78\]](#) Smaller reductions in driving would lead to more modest reductions in emissions. [\[FN79\]](#)



Similarly, Harvard economist Edward Glaeser and UCLA economist Matthew Kahn recently conducted a study finding that low-density, automobile-oriented regions emitted more greenhouse gases from transportation than more pedestrian-and transit-oriented \*103 regions. [\[FN80\]](#) For example New York City, the region with the highest use of public transit, [\[FN81\]](#) emitted 19,524 pounds of CO<sub>2</sub> per household from automobiles and transit users combined, the lowest of ten metro areas studied. [\[FN82\]](#) By contrast, several lower-density regions emitted over 25,000 pounds of transportation-related CO<sub>2</sub> per household. [\[FN83\]](#) Moreover, suburbs, which tend to be less compact and more automobile-oriented than cities, [\[FN84\]](#) have higher transportation-related CO<sub>2</sub> emissions than cities. [\[FN85\]](#) For example, New York's suburban households emitted over 3,800 more pounds of transportation-related CO<sub>2</sub> per household than did city residents. [\[FN86\]](#)

Thus, it seems that the sort of low-density development encouraged by minimum parking requirements has increased, rather than reduced, greenhouse gas emissions. Indeed, such development has not even succeeded in reducing congestion. [\[FN87\]](#) For example, in metropolitan Philadelphia, region-wide density per square mile declined by forty-three percent between 1982 and 2007: from 4,083 people per square \*104 mile to 2,329 people per square mile. [\[FN88\]](#) Yet traffic congestion, measured by the number of hours lost to congestion per peak-period traveler, increased from sixteen hours per traveler in 1982 to thirty-eight in 2007. [\[FN89\]](#) Philadelphia is an extreme case, but not atypical. Among the United States' largest urban areas, the average regional density per square mile decreased from 3,296 people per square mile to 2,820 between 1982 and 2007, while the average number of hours lost to congestion increased from twenty-one per person to fifty-one. [\[FN90\]](#) As a result, to the extent minimum parking requirements have contributed to pedestrian-unfriendly levels of density, they have increased pollution while failing to reduce congestion.

### 3. A Degraded Urban Fabric

If landowners are forced to build parking, they will normally place parking lots in front of, rather than in back of, stores and offices. [\[FN91\]](#) Municipal zoning ordinances often require buildings to be set back far from a sidewalk or street. [\[FN92\]](#) Because landowners have to put something between the street and their buildings, that something might as well be a parking lot, [\[FN93\]](#) because customers find it more convenient to park in front of a store than in back. [\[FN94\]](#) Conversely, \*105 where shops are surrounded by a sea of parking, these shops are anything but inviting for pedestrians. In such situations, pedestrians must waste time walking through parking lots, [\[FN95\]](#) and must risk life and limb dodging automobiles that are in search of parking spaces. [\[FN96\]](#) By contrast, where shops and other destinations flank the sidewalk, pedestrians can reach their destinations quickly and conveniently. [\[FN97\]](#) If the parking-dominated landscapes created by setback and minimum parking requirements are time-consuming [\[FN98\]](#) and dangerous for pedestrians, it logically follows that such requirements deter walking and encourage driving, thus increasing traffic congestion, pollution, and greenhouse gas emissions. [\[FN99\]](#)

## B. Bad For Business

As noted above, minimum parking requirements reduce population and employment density, [\[FN100\]](#) which means that they reduce the number of dwellings and businesses



that can be built in a given area. This result might not significantly reduce economic development in rural and developing suburban areas, where land for parking is cheap and \*106 plentiful; [\[FN101\]](#) a landowner who wants to build a shopping center or a business in a rural area can easily buy a little more undeveloped land to make up for land eaten up by parking. But in already-developed areas, a landowner may be hemmed in by other landowners, and thus be unable to build housing or businesses while complying with minimum parking requirements.

For example, in *Milburn Courtyard Assocs. v. Planning Bd. of Twp. of Milburn*, [\[FN102\]](#) an entrepreneur proposed to establish a restaurant in a downtown [\[FN103\]](#) district which (according to the city's official plan) “has emphasis on pedestrian scale retail business.” [\[FN104\]](#) The applicant's site contained only one parking spot, but the city's minimum parking regulations required the applicant to build twelve parking spots, even though the downtown district contained numerous public parking lots. [\[FN105\]](#) A New Jersey court held that the restaurant could not be established without a zoning variance. [\[FN106\]](#) Thus (assuming no variance was granted), the would-be restaurateur would have had to purchase enough land for a dozen parking spots- a task that might be more difficult in a downtown area than in a more suburban area with more undeveloped land.

Even where a business can find enough land to build parking lots or garages in cities, such land is more expensive than in suburbia. [\[FN107\]](#) A typical downtown surface parking lot costs \$2,035 per space, per year, while a comparable suburban parking lot costs \$432 per space/year; [\[FN108\]](#) primarily because of higher land costs. [\[FN109\]](#) A business \*107 can avoid high land costs by building parking spaces underground; however, savings from land costs are often outweighed by the added expense of building an underground parking structure. [\[FN110\]](#)

Thus, compliance with minimum parking requirements is both more difficult and more expensive for urban businesses than for suburban businesses. As a result, such regulations encourage would-be builders to move from built-out urban areas to developing areas with a more abundant supply of land. [\[FN111\]](#) This parking-induced redistribution of resources to suburbia creates an externality-like harm for older areas (which lose business as a result of parking requirements), and for would-be developers who are forced to move from their first-choice locations to cheaper and/or more suburban locations.

### C. Do Regulations Matter?

The above analysis assumes a causal relationship between municipal minimum parking requirements and widespread cheap parking. Although, it could be argued that parking is so desirable that even in the absence of government regulation, businesses would provide as much free parking as they do today. [\[FN112\]](#)

However, as a matter of logic, this argument proves too much. If parking is so desirable that businesses would provide free parking in the absence of a legal requirement, why are legal requirements necessary to force businesses to provide adequate parking? Indeed, \*108 courts' emphasis on externalities such as cruising [\[FN113\]](#) suggest that even supporters of minimum parking requirements know that those rules cannot be justified based on the interests on the businesses forced to provide parking. Moreover, the existence of litigation surrounding minimum parking

requirements [\[FN114\]](#) suggests that landowners are sometimes willing to forego additional parking. [\[FN115\]](#) So even though it is unknown exactly to what extent a more market-oriented parking policy would reduce the amount of free or almost-free parking spaces, the correct answer certainly exceeds zero.

#### IV. To Abolish Or Not To Abolish?

As noted above, minimum parking requirements create a benefit for drivers who use parking lots, [\[FN116\]](#) and may benefit people faced with less cruising and spillover parking near their residences. However, by increasing the amount of free (or nearly free) parking, such regulations also create negative side effects, increasing driving and its ill effects while burdening cities to a greater extent than suburbs, thus making cities less competitive. [\[FN117\]](#) Thus, one question facing local policymakers is: on balance, would the abolition of minimum parking requirements increase or decrease these harms? The pros and cons of abolition might differ in suburban and urban locations.

##### A. In Suburbia

Elimination of minimum parking requirements does not mean elimination of parking. Rather, parking deregulation still allows \*109 landowners to install as much parking as they wish. [\[FN118\]](#) Abolition of minimum parking requirements is likely to have little impact in low-density, automobile-dependent suburbs that have an abundance of cheap land. In such areas, businesses are motivated to build at least some parking (since most visitors to such suburbs would arrive by car), while the costs of parking lot construction are less onerous than in an urban setting. [\[FN119\]](#)

Nevertheless, some landowners might build fewer parking spaces than they do today in order to get more housing or businesses on their land and thus more revenue therefrom. At most worksites, the amount of available free parking exceeds consumer demand. [\[FN120\]](#) Thus, a landowner could satisfy customers' desire for free parking while reducing the amount of parking spaces.

If such a reduction in parking spaces occurred, some (but not all) of the negative results of minimum parking requirements would be reduced. Most suburbanites would continue to drive to most destinations, but the number of unnecessary parking spaces, and thus their costs to businesses and society, would modestly decline. Pedestrians would still have to walk through a sea of parking to reach shops, offices, and apartments? but those seas might be a little smaller and less dangerous.

Moreover, the primary arguments in favor of minimum parking requirements, concerns over spillover parking and cruising, do not apply in a suburban setting. In the most automobile-dependent \*110 suburban environments, population densities are low and land uses are highly segregated. [\[FN121\]](#) Thus, a motorist who wished to engage in spillover parking (by parking on a residential street and then walking to a nearby business) would have to be willing to take a long walk to her destination- not an appealing prospect to most drivers the majority of the time. [\[FN122\]](#) Cruising for cheap on-street parking is equally unlikely in a suburban setting, because most suburban parking is usually free and off-street. [\[FN123\]](#)

Consequently, in a suburban setting, there is no reason not to abolish minimum parking requirements. Landowners would benefit slightly from not being required to

build additional parking spaces, their neighbors suffer almost no negative effects, consumers save money as the cost of parking would be incorporated in the cost of goods and services, and pedestrians enjoy walking-friendly environments. Thus, minimum parking requirements in suburban settings should be abolished: they may not cause very much harm, but they also prevent almost no harm.

## B. Cities

In urban settings with scarce or expensive land, landowners have a strong incentive to eliminate off-street parking in the absence of bureaucratic regulation, because the cost of land (and thus of parking space construction) is often higher in cities. [\[FN124\]](#) Thus, the positive impact of parking deregulation might be greater in urban locations: more land would be freed up for development. Additionally, population density would increase, causing walking and public transit <sup>\*111</sup> use to become less uncomfortable. [\[FN125\]](#) As a result, the positive results of parking deregulation might be greater in cities and older suburbs than in the newest, least-developed suburbs.

On the other hand, the traditional arguments for minimum parking requirements may be stronger in more urban, walkable areas than in suburbia. In the absence of minimum parking requirements, spillover parking might increase, because a motorist is more likely to walk from a residential street to a commercial street in an urban setting than in a suburban setting, where huge parking lots and wide streets make walking less feasible. [\[FN126\]](#) In addition, because on-street parking is more common in urban areas, [\[FN127\]](#) more motorists might cruise in search of on-street parking spaces rather than driving into a parking lot. [\[FN128\]](#) Thus, abolition of minimum parking requirements might, other things being equal, increase the negative externalities of cruising and of spillover parking. [\[FN129\]](#)

Given the wide variety of factors affecting a region's levels of vehicle-induced pollution it cannot be stated with absolute certainty that minimum parking requirements' harmful environmental effects outweigh the positive environmental results of reduced cruising. But as noted above, numerous studies have suggested that more compact, transit-oriented development reduces greenhouse gas emissions. [\[FN130\]](#) Given that car-dependent places seem to pollute more than less car-dependent places, [\[FN131\]](#) it seems likely that on balance minimum parking requirements, by subsidizing driving and discouraging walking, <sup>\*112</sup> increase the very environmental harms they seek to prevent. Thus, it seems that there is a strong, though not irrefutable, case for abolition of minimum parking requirements in cities as well as suburbs.

Because Americans are so car-dependent and thus will need parking places for the foreseeable future, it could be argued that minimum parking requirements should not be abolished until public transit is improved. This argument lacks merit for two reasons. First, if, as suggested above, minimum parking requirements are environmentally harmful, society is better off if such regulations are abolished- even if no other policies are changed. [\[FN132\]](#) Second, the existence of minimum parking requirements reduces the likelihood that public transit will ever be improved. [\[FN133\]](#)

By making driving artificially cheaper, cities more spread out, and walking more difficult, [\[FN134\]](#) minimum parking requirements make public transit (which inevitably involves walking to and from transit stops) less popular, thus reducing the stream of revenue available for transit improvements. [\[FN135\]](#) Therefore, if a city wants to

improve public transit, it should be especially motivated to reduce minimum parking requirements. It could also be argued that abolition is simply too radical to be introduced immediately, and would somehow be too disruptive to drivers' lives.

This argument is meritless because abolishing minimum parking requirements is not the same as abolishing parking. Businesses that have already invested money in parking lots may wish to retain some parking in order to retain motorist patrons. [\[FN136\]](#) So any deregulation-induced reduction in the parking supply may be fairly gradual.

Moreover, some cities already experimenting with parking reforms have exhibited little evidence of disruption. For example, Huntsville, Alabama is one of the most automobile-dependent cities in the United States. [\[FN137\]](#) In Huntsville, roughly 0.5% of all commuters \*113 use public transit, [\[FN138\]](#) fewer than all but ten of the 245 American cities with over 100,000 people. [\[FN139\]](#) Yet Huntsville has abolished minimum parking requirements in the downtown area [\[FN140\]](#) (although not in other neighborhoods). [\[FN141\]](#) Huntsville appears to have suffered no obvious harm from its policies; in fact, the downtown population has grown since 1990. [\[FN142\]](#) Numerous larger cities (such as Seattle, San Francisco, Portland and Miami) have abolished minimum parking requirements for their downtown areas over the past decade. [\[FN143\]](#) Although some of these cities reformed their parking policies so recently that it is difficult to ascertain the overall effect of their parking reforms, downtown populations appear to be growing in all four cities. [\[FN144\]](#)

## V. Alternatives to Abolition

Some cities have sought to minimize the harm caused by minimum parking requirements by: (1) imposing fees upon landowners in lieu of minimum parking requirements, (2) reforming the pricing system for on-street public parking, (3) using a permit system to ration \*114 parking in residential neighbourhoods, and (4) reducing, rather than eliminating, parking requirements. [\[FN145\]](#) The advantages and disadvantages of each alternative will be addressed below.

### A. “In Lieu Of Parking” Fees

Some cities allow landowners to avoid minimum parking requirements by paying “in lieu of parking” fees. [\[FN146\]](#) Under this system, local governments charge just enough for parking to ensure that a fixed percentage of spaces (for example, fifteen percent) is always vacant, thus eliminating the incentive for cruising. [\[FN147\]](#) If these public facilities are adequate to meet motorist demand for parking, there is no danger of spillover parking or cruising. Additionally, because not every store or office would be surrounded by parking, most businesses would be in front of sidewalks, thus creating more welcoming environments for pedestrians.

This system would be most practical in compact neighborhoods where motorists can easily walk from a public parking lot to a shop or office, as opposed to lower-density environments where no office is within a short walk of any other. However, such a parking fee system retains some of the negative side effects of minimum parking requirements: motorists might still be able to park for free (or at a less-than-market rate) at the landowners' expense, which means that landowners would effectively be forced to subsidize driving and its negative externalities. In sum, “in lieu of parking” fees are a

modest improvement upon the status quo, eliminating some, but not all, of the negative side effects of minimum parking requirements.

## B. Market Pricing

City governments can deter cruising by charging market prices for on-street parking. Under this system, local governments charge just enough for parking to eliminate parking shortages [\[FN148\]](#) - that is, enough \*115 so that some (but not all) parking spaces would be vacant, thus eliminating the incentive for cruising.

This system has some of the advantages of abolition. For example, a market pricing system reduces the amount of free parking, thus reducing the subsidy to drivers caused by minimum parking requirements. [\[FN149\]](#) Moreover, the market pricing system and abolition are not mutually exclusive; a city could deregulate off-street parking, but institute market pricing to create a guaranteed minimum amount of on-street parking for motorists.

The market pricing system would also apply only to urban areas with ample on-street parking. In most suburban commercial areas, parking is typically off-street, [\[FN150\]](#) and market pricing would be irrelevant. Indeed, it could be argued that by eliminating free in-town on-street parking, a market pricing scheme might make cities less desirable to visit than suburbs, driving shoppers to suburban sites with free parking. [\[FN151\]](#) Given this risk, the abolition of minimum parking requirements should not be made dependent on pricing reform.

## C. Permit Parking

Some cities have instituted parking permit districts in which parking in certain residential areas is limited to neighborhood residents. [\[FN152\]](#) This system, if adequately enforced, eliminates spillover parking, one of the major justifications for minimum parking requirements. [\[FN153\]](#) However, permit parking districts are not a cure-all; \*116 by definition they are limited to residential streets, and thus do not solve the parking problems of commercial streets. [\[FN154\]](#)

## D. Halfway Measures

A fourth alternative is to reduce, rather than eliminate, minimum parking requirements. Cities have employed this strategy in areas where people might drive less frequently than in a typical suburb, such as neighborhoods near transit stations, [\[FN155\]](#) affordable and senior-oriented housing developments whose residents are less likely to own cars, [\[FN156\]](#) or places where customers and employees of multiple landowners might be able to share parking. [\[FN157\]](#) Given the defects of minimum parking requirements enumerated above, more lenient regulations are probably an improvement to the status quo. Nevertheless, lenient regulations still share the same defects as strict regulations: an ordinance that requires one parking space per apartment artificially subsidizes driving, [\[FN158\]](#) reduces density, [\[FN159\]](#) and discourages economic development [\[FN160\]](#) - albeit only half as much as an ordinance that requires two parking spaces per apartment.

Moreover, even a lenient ordinance makes sense only if planners can accurately guess how much parking a business “needs” - a questionable assumption, because existing requirements may well be based on erroneous predictions. [\[FN161\]](#)

\*117 Even if today's planners strike the right balance between discouraging cruising and avoiding parking regulations' negative effects, the political process may not be flexible enough to allow planners to change that balance to the appropriate level.

Minimum parking requirements have survived in part because of NIMBY (“not in my back yard”) sentiment. [\[FN162\]](#) If developers or government officials propose to ease minimum parking requirements in a neighborhood, residents of nearby neighborhoods often support the status quo because of fears of spillover parking. [\[FN163\]](#) Hence, if tomorrow's regulators decide that today's reforms do not go far enough, they will likely face a NIMBY resistance. However, if the government stops dictating how much parking landowners build, there will be no more parking requirements for NIMBYs to protect.

## VI. Conclusion

North American cities have enacted minimum parking requirements in order to prevent landowners and motorists from imposing the externalities of cruising and spillover parking upon the citizenry as a whole. However, these regulations have created their own externality-like side effects. By artificially increasing the supply of parking and thus making driving cheaper and more convenient, these regulations have redistributed wealth from society as a whole to drivers, making driving more attractive and thus increasing automobile travel and its negative externalities (such as pollution, traffic congestion, and greenhouse gas emissions). By creating the parking-dominated “strip mall” landscape of suburbia, such regulations impose discomfort and even danger upon pedestrians. Additionally, by making urban redevelopment more expensive, \*118 minimum parking regulations shift development from city to automobile-dependent suburb. As a result, minimum parking requirements may be one of the situations foreseen by Coase, in which government regulation creates more congestion and environmental damage than it prevents.

[\[FN161\]](#). Associate Professor, Touro School of Law. Wesleyan University, B.A.; University of Pennsylvania, J.D. I would like to thank Haynes Goddard, Andrew Green, Todd Litman and Hannah Wiseman for their helpful comments. Any errors of law, fact or logic are mine and not theirs.

[\[FN1\]](#). Nicole L. Johnson, Comment, [BlackBerry Users Unite! Expanding the Consumer Class Action To Include a Class Defense](#), 116 Yale L.J. 217, 219 n.9 (2006) (citing Harold Demsetz, Toward a Theory of Property Rights, 57 Am. Econ. Rev. 347, 348 (1967)). See Lee Fennell, The Unbounded Home 46 (2009) (defining externalities as “costs or benefits imposed or bestowed on others that an actor does not take into account in deciding how to act”).

[\[FN2\]](#). See Herbert Hovenkamp, The [Coase Theorem and Arthur Cecil Pigou](#), 51 Ariz. L. Rev. 633, 633 (2009) (modern law and economics movement “originated” with Coase).

[\[FN3\]](#). R.H. Coase, The Problem of Social Cost, 3 J.L. & Econ. 1, 18 (1960) (stating that



government regulation might be appropriate in an example where a factory creates smoke that has harmful effects on many neighboring properties). I note that such externalities are not limited to physical harm to property. For example, distortions in price may also cause harmful externalities. See Bruce C. Greenwald & Joseph E. Stiglitz, 101 Q.J. Econ. 229, 229-30 (1986) (providing where “one individual's or firm's actions affect another only through effects on prices”, such “pecuniary externalities” have significant harmful consequences); see *infra* Part III.A.1 (suggesting that minimum parking requirements distort price of parking and have such harmful consequences).

[FN4]. Technically, the consequences of government action might not fit this definition of “externalities,” either because the government is not an “individual” or because the government represents society as a whole and thus no citizen is a “third party” in relation to government. See Samuel Staley, Comment to Externalities, Meet Externalities, Planetizen (Jul. 1, 2010, 10:59), <http://www.planetizen.com/node/44907#comment-13455>.

[FN5]. Coase, *supra* note 3, at 18.

[FN6]. See Michael Lewyn & Shane Cralle, [Planners Gone Wild: The Overregulation of Parking](#), 33 Wm. Mitchell L. Rev. 613, 613 n. 1 (2007) (asserting that minimum parking requirements are “virtually universal” in the United States (citing Donald C. Shoup, The High Cost of Free Parking 22, 25 (2005))). Cf. Stuart Donovan & David Seymour, Parking Requirements Come With a High Price, Guelph Mercury, July 7, 2009, available at 2009 WLNR 12980999.

[FN7]. See Jacksonville, Fla., Ordinance Code §656.604(a)(2) (1990). See also Lewyn & Cralle, *supra* note 6, at 614 (citing other examples).

[FN8]. See Am. Cmty. Surv., United States Census Bureau, tbl. B25044, Jacksonville city, Florida (2006-2008), [http://factfinder.census.gov/servlet/DTTable?\\_bm=y&-state=dt&-context=dt&-ds\\_name=ACS\\_2008\\_3YR\\_G00\\_&-mt\\_name=ACS\\_2008\\_3YR\\_G2000\\_B25044&-tree\\_id=3308&-\\_caller=geoselect&-geo\\_id=16000US1235000&-search\\_results=01000US&-format=&-\\_lang=en](http://factfinder.census.gov/servlet/DTTable?_bm=y&-state=dt&-context=dt&-ds_name=ACS_2008_3YR_G00_&-mt_name=ACS_2008_3YR_G2000_B25044&-tree_id=3308&-_caller=geoselect&-geo_id=16000US1235000&-search_results=01000US&-format=&-_lang=en) (emphasis added).

[FN9]. See Shoup, *supra* note 6, at 31.

[FN10]. *Id.*

[FN11]. See *infra* Part II.A.

[FN12]. See *infra* Part II.B.

[FN13]. See *infra* Part III.A.1. Or more precisely, free of any marginal charge for parking itself, as opposed to the costs that are passed on to tenants and their customers.

[FN14]. See *infra* notes 41-47.

[FN15]. See *infra* notes 45-46.

[FN16]. See *infra* notes 45-47 and accompanying text.

[FN17]. And not just in the context of parking prices. Cf. Thomas Merrill & David M. Schizer, [Energy Policy for an Economic Downturn: A Proposed Petroleum Fuel Price Stabilization Plan](#), 27 *Yale J. on Reg.* 1, 24 & n. 70 (2009) (noting increased use of public transit when gasoline prices rose in 2008); Jon Schmitz, Transit Ridership Declines 4% Nationwide, *Pittsburgh Post-Gazette*, Mar. 15, 2010, at A1 (reporting that transit ridership climbed in 2008 when gasoline prices rose, and declined after gasoline prices decreased).

[FN18]. See *infra* Part III.A.2.

[FN19]. See *infra* notes 57-58 and accompanying text.

[FN20]. See *infra* Part III.A.3.

[FN21]. See *infra* Part III.A.3.

[FN22]. See, e.g., Susan Shelly, *The Complete Idiot's Guide to Money for Teens* 138 (2001) (“Americans love their cars.”); Hope M. Babcock, [Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm](#), 33 *Harv. Envtl. L. Rev.* 117, 133 (2009) (referring to “America's love affair with cars”).

[FN23]. See *infra* Part III.B.

[FN24]. See *infra* Part II.A.

[FN25]. See *infra* Part II.B.

[FN26]. See Michael Manville & Donald Shoup, *People, Parking and Cities*, 25 *Access* 1, 4 (2004), <http://shoup.bol.ucla.edu/People,Parking,Cities.pdf> (using term “cruising” to describe motorists' search for parking).

[FN27]. [532 P.2d 720 \(Colo. 1975\)](#).

[FN28]. [Id. at 723](#).

[FN29]. *Id.*

[FN30]. Cf. Bern Grush, *Shoup Made Visible: Toronto's Pricing Problems*, *Parking Today* 34, 34-40 (2009), [http://shoup.bol.ucla.edu/Toronto% 27sPricingProblems.pdf](http://shoup.bol.ucla.edu/Toronto%20sPricingProblems.pdf)

(showing example of harm caused by cruising in Toronto).

[FN31]. See Coase, *supra* note 3, at 10 (explaining that where such settlement is cost-free, “the decision of the courts concerning liability for damages would be without effect on the allocation of resources”). Coase notes that in the latter situation, even the victim is better off, because her losses from compensating the damage-causer may be lower than the cost of the damage itself. *Id.* at 6-8 (supplying hypothetical example).

[FN32]. *Id.* at 18.

[FN33]. See *infra* notes 34-35.

[FN34]. See [Massachusetts v. EPA, 549 U.S. 497, 524 \(2007\)](#) (stating that the United States transportation industry is responsible “for more than 6% of worldwide carbon dioxide emissions”).

[FN35]. *Id.* at 525 (transportation industries' carbon dioxide emissions “make a meaningful contribution to greenhouse gas concentrations” which, according to petitioners, may in turn lead to worldwide global warming).

[FN36]. See Sarah Krakoff, [American Indians, Climate Change, and Ethics for a Warming World, 85 Denv. U. L. Rev. 865, 866 \(2008\)](#) (stating that CO<sub>2</sub> “stays in the atmosphere for hundreds of years”).

[FN37]. See Douglas Laycock, [State RFRA's and Land Use Regulation, 32 U.C. Davis L. Rev. 755, 766 \(1999\)](#) (for example, if a church provides its worshippers with an insufficient number of parking spaces, the city has an interest in “ensuring that the spillover from the church parking lot does not deprive neighbors of reasonable opportunity to park in their own neighborhood”). I note one weakness in this analysis: B's residents do not own the streets in their neighbourhood, and thus have no legal right to on-street parking. But even though this reality prevents B's residents from having a common-law right of action against A, it is unlikely to prevent government officials dependent on the votes of B's residents from heeding those residents' complaints.

[FN38]. Infill development “is development that takes place within an area that is already developed or has been developed previously.” Dev., Cmty., & Env't Div., United States Env't'l Protection Agency, Comparing Methodologies to Assess Transportation and Air Quality: Impacts of Brownfields and Infill Development 3 (2001), <http://tmip.fhwa.dot.gov/resources/clearinghouse/docs/EPA-231-R-01-001/EPA-231-R-01-001.pdf>.

[FN39]. See *supra* notes 27-29 and accompanying text (discussing case law upholding minimum parking requirements on these grounds).

[FN40]. See *infra* Part III.A.3.

[FN41]. See Trip Pollard, [Building Greener Communities: Smarter Growth and Green Building](#), 27 Va. Env'tl. L.J. 125, 140 (2009) (suggesting that free parking is sometimes required).

[FN42]. See Richard Wilson, Suburban Parking Requirements: A Tacit Policy For Automobile Use And Sprawl, 61 J. of the Am. Plan. Ass'n 29, 34 (1995) ( "When developers are required to provide more parking than is demanded, the oversupply tends to push the market price down to zero.").

[FN43]. See Rachel Weinberger, John Kaehny & Matthew Rufo, Inst. for Transp. & Dev. Pol'y, U.S. Parking Policy: An Overview of Management Strategies 5 (2010), [http://www.itdp.org/documents/ITDP\\_US\\_Parking\\_Report.pdf](http://www.itdp.org/documents/ITDP_US_Parking_Report.pdf).

[FN44]. See Robert Cervero & David Alan Aschauer, Economic Impact Analysis of Transit Investments: Guidebook for Practitioners, 9-17 and 9-18 (1998) (cost of parking space may range from \$2,000 to \$20,000, depending on a variety of factors); Roberta F. Mann, On The [Road Again: How Tax Policy Drives Transportation Choice](#), 24 Va. Tax Rev. 587, 636 (2005) ("The cost of providing a parking space varies from \$2,000 in suburban areas to \$20,000 in urban areas.").

[FN45]. See Todd Litman, Victoria Transp. Pol'y Inst., Parking Management: Comprehensive Implementation Guide 18 tbl.7 (2010), [http://www.vtpi.org/park\\_man\\_comp.pdf](http://www.vtpi.org/park_man_comp.pdf).

[FN46]. See Victoria Transp. Pol'y Inst., Transportation Cost and Benefit Analysis II- Parking Costs 5.4-19 (2010), <http://www.vtpi.org/tca/tca0504.pdf> One study: estimates that each additional residential parking space effectively increases typical U.S. urban housing unit costs by \$52,000 to \$117,000, with a mid-range value of \$85,627. These figures are derived from observed differences in housing prices, reduced loan eligibility because of increased car-related household costs, public infrastructure costs associated with accommodating developments that are more dispersed due to parking requirements, and direct financial impacts on neighbors of new developments.

Simon McDonnell, Josiah Madar, & Vicki Been, Furman Ctr. for Real Est. & Urb. Pol'y, Minimum Parking Requirements, Transit Proximity and Development in New York City 5 (2010), [http://furmancenter.org/files/publications/Parking\\_Requirements\\_Submitted&uscore;TRB\\_resubmit\\_withref-1.pdf](http://furmancenter.org/files/publications/Parking_Requirements_Submitted&uscore;TRB_resubmit_withref-1.pdf) (parking adds 10 percent to cost of housing in San Francisco); Weinberger et al., supra note 43, at 32-33 (listing numerous studies with roughly similar results).

[FN47]. Of course, it could be argued that minimum parking requirements actually benefit non-drivers by reducing cruising and thus reducing pollution. See supra Part II.A. But if, as suggested below, minimum parking requirements encourage driving, this argument may fail. See infra Part III.A.1(b) (showing that free parking or its absence affects travel patterns).

[FN48]. See Babak A. Rastgoufard, [Too Much Smoke and Not Enough Mirrors: The](#)

[Case Against Cigarette Excise Taxes and For Gasoline Taxes](#), 36 Urb. Law. 411, 438 n. 140 (2004) (“[A] 10 [percent] increase in household income increases daily [total vehicle miles traveled] by 3.5-3.7 [percent].”) (citation omitted).

[FN49]. See Richard W. Willson & Donald C. Shoup, Parking Subsidies and Travel Choices: Assessing the Evidence, 17 Transportation 141, 144-45 (1990) (citing three examples in Los Angeles).

[FN50]. See id. at 148.

[FN51]. Id.

[FN52]. Id. at 146. This change occurred over a one-year period.

[FN53]. Id. (Noting that Ottawa transit “has high ridership levels.”). Id. at 149-50 (describing similar results at worksites in and around downtown Los Angeles).

[FN54]. See infra notes 55-58 and accompanying text.

[FN55]. Willson & Shoup, supra note 49, at 147 (noting that both before and after parking prices changed, no employees commuted via public transit).

[FN56]. Id. Of course, this “market rate” was itself lower than it would have been in the absence of minimum parking requirements. See supra note 34 and accompanying text. So the authors' suggestion that commuters were charged “market rate” overlooks the fact that even motorists charged the market rate are effectively subsidized as a result of minimum parking requirements.

[FN57]. Willson & Shoup, supra note 49, at 146.

[FN58]. Id. See also Weinberger et al., supra note 43, at 19 (citing numerous other examples).

[FN59]. See supra Part II.A.

[FN60]. See supra notes 34-36 and accompanying text (describing the relationship between automobile travel and climate change).

[FN61]. See State Env'tl Res. Ctr., Pay-as-You-Drive Auto Insurance, <http://www.serconline.org/payd/fact.html> (last updated May 10, 2004) (“Although mileage is just one of several factors that affect crash rates, a 10% reduction in driving is expected to reduce crashes by 17%”) (citation omitted).

[FN62]. See id.

[FN63]. See U.S. Census Bureau, Motor Vehicle Occupants and Nonoccupants Killed

and Injured: 1980 to 2007, tbl. 1070, <http://www.census.gov/compendia/statab/2010/tables/10s1070.pdf> (last visited Feb. 20, 2011) (fatalities have fluctuated between 40,000 and 45,000 since 1985, and injuries have fluctuated between 2 and 3 million since 2000 after reaching higher levels in earlier decades).

[FN64]. See Michael Lewyn, [New Urbanist Zoning for Dummies](#), 58 Ala. L. Rev. 257, 280 (2006).

[FN65]. Shoup, *supra* note 6, at 143.

[FN66]. *Id.* at 144.

[FN67]. See Jim Jordan, To Tell or Not To Tell: That's Noise Question, Lexington Herald-Leader, Dec. 26, 1993, at H1 (referring to the “national average rent for a one-bedroom apartment with 800 square feet of space,” thus implying that average apartment has 800 square feet).

[FN68]. See Cervero, *supra* note 44, at 3-4.

[FN69]. More precisely, the landlord would build somewhere between sixty-nine and seventy apartments. If the landlord builds sixty-nine apartments, it can devote 55,200 square feet to apartments (sixty-nine x 800) and 24,150 square feet to parking (sixty-nine x 350) and have 650 square feet left over. On the other hand, the landlord cannot build seventy of each without purchasing 500 square feet of additional land, because it must devote 56,000 square feet to apartments (seventy x 800) and 24,500 square feet to parking (seventy x 350).

[FN70]. See Litman, *supra* note 45, at 18 tbl. 7 (comparing the cost of surface parking with cost of underground parking).

[FN71]. See Robert H. Freilich, The [Land Use Implications of Transit-Oriented Development: Controlling the Demand Side of Transportation Congestion and Urban Sprawl](#), 30 Urb. Law. 547, 552 n. 18 (1998) (suggesting that people typically will not walk more than a fourth of a mile to the transit station, and that densities of at least seven units per acre are required for significant transit ridership).

[FN72]. See Lewyn & Cralle, *supra* note 6, at 616.

[FN73]. See *supra* notes 24, 30 (describing congestion and greenhouse emissions caused by auto traffic).

[FN74]. See Ilya Somin & Jonathan H. Adler, The [Green Costs of Kelo: Economic Development Takings and Environmental Protection](#), 84 Wash. U. L. Rev. 623, 657 (2006).



[FN75]. See Transp. Res. Bd., Bd. on Energy and Envtl. Sys., U.S. Nat'l Research Council, Spec. Rep. No. 298, Driving and the Built Environment 12 (2009), available at [http://www.nap.edu/catalog.php?record\\_id=12747#toc](http://www.nap.edu/catalog.php?record_id=12747#toc).

[FN76]. Id. at 4.

[FN77]. Id. at 5, 31-66 (describing the relationship between density and vehicle miles traveled in more detail).

[FN78]. Id. at 7.

[FN79]. Id.

[FN80]. See Edward L. Glaeser & Matthew E. Kahn, The Greenness of Cities: Carbon Dioxide Emissions and Urban Development 1 (Nat'l Bureau of Econ. Research, Working Paper No. 14238, 2008), available at [http://www.economics.harvard.edu/faculty/glaeser/files/Greenness\\_Glaeser\\_Kahn\\_2008.pdf](http://www.economics.harvard.edu/faculty/glaeser/files/Greenness_Glaeser_Kahn_2008.pdf); see also Edward L. Glaeser & Matthew E. Kahn, The Greenness of Cities 2 (2008), [http://www.drcog.org/documents/greencities\\_final.pdf](http://www.drcog.org/documents/greencities_final.pdf) (“low-density development ... is associated with far more carbon dioxide emissions than higher-density construction”).

[FN81]. Id. at 5.

[FN82]. Id.

[FN83]. Id.

[FN84]. Id. at 8.

[FN85]. Id. (in every city surveyed, suburbanites generated more automobile-related emissions, and this “emissions gap” between city and suburb exceeded additional public transit-related emissions created by city residents).

[FN86]. Id. Urbanites were responsible for 2,367 more pounds of public transit-related emissions per household, but suburbanites responsible for 6,150 more pounds of driving-related emissions per household. Glaeser and Kahn obtained similar results for nine other large metropolitan areas: in each, suburbanites were responsible for more driving-related emissions, and those emissions outweighed city residents' extra public transit-related emissions. Id. (listing data for Atlanta, Los Angeles, Chicago, Boston, Philadelphia, Detroit, Washington, Houston, and San Francisco).

[FN87]. See *supra* notes 71-73 and accompanying text.

[FN88]. See Tex. Transp. Inst., 2010 Annual Urban Mobility Report, Performance Measure Summary - Philadelphia PA-NJ-DE-MD 2-6 (2010), [http://mobility.tamu.edu/ums/congestion\\_data/tables/phila.pdf](http://mobility.tamu.edu/ums/congestion_data/tables/phila.pdf).

[\[FN89\]](#). Id.

[\[FN90\]](#). See Tex. Transp. Inst., 2010 Annual Urban Mobility Report, The Mobility Data for Very Large Areas - Average 1-5 (2010), [http://mobility.tamu.edu/ums/congestion\\_data/tables/vlg-combined.pdf](http://mobility.tamu.edu/ums/congestion_data/tables/vlg-combined.pdf).

[\[FN91\]](#). See supra notes 74-76 and accompanying text.

[\[FN92\]](#). See Lewyn & Cralle, supra note 6, at 614 n. 9.

[\[FN93\]](#). Cf. Chad D. Emerson, [Making Main Street Legal Again: The Smartcode Solution to Sprawl](#), 71 Mo. L. Rev. 637, 645 n. 36 (2006) (under conventional American zoning codes, “front setbacks must be either a 25-foot grass yard or a paved parking lot”) (citation omitted).

[\[FN94\]](#). Kim Mikus, Out With The Old Malls Getting Some New Looks, Chi. Daily Herald, March 5, 2006, at 1 (“Time-starved customers demand convenience, which often includes parking in front of the store”). Of course, it could be argued that in order to cater to customer desires, businesses will supply such parking even in the absence of minimum parking requirements. But without government regulation, landowners would weigh this impulse against the cost of land, and against their desire to build more stores and thus obtain more revenue. Cf. infra note 93 (businesses often either try to evade minimum parking requirements or build the bare minimum required by law).

[\[FN95\]](#). See Lewyn & Cralle, supra note 6, at 615. I note that such parking lots may be especially unpleasant in warm climates, because parking lots often lack trees and reflect heat. See Editorial, A Lightning Rod For Controlling Growth, Atlanta J. & Constit., May 5, 2000, at A22 (describing parking lots as “giant heat islands” and stating that parking lots “can heat up to 120 degrees Fahrenheit when the air temperature hits 80 degrees” based on NASA satellite data); Editorial, Patches of Shade Don't Cut it in Valley, Ariz. Republic, Sept. 2, 2005, at 2 (describing the temperature in one asphalt lot as measuring 155 degrees in the sun, and 103 degrees in shade); Nancy Sarnoff, Project is Good to Go, Hous. Chronicle, Aug. 18, 2004, at 1 (describing Houston's roads as “blighted” with “treeless parking lots”).

[\[FN96\]](#). See Editorial, Patches of Shade Don't Cut it in Valley, supra note 95.

[\[FN97\]](#). See Douglas G. French, [Cities Without Soul: Standards for Architectural Controls with Growth Management Objectives](#), 71 U. Det. Mercy L. Rev. 267, 280 (1994) (suggesting that pedestrians find such places more aesthetically appealing because “small setbacks and shopfront windows provide more interesting scenery for pedestrians and create a feeling of connection between the buildings and the public spaces bordering them”).

[\[FN98\]](#). See supra note 64 (noting that parking lots artificially increase distances between

residences, shops and offices). Pedestrians, therefore, waste time walking through parking lots.

[\[FN99\]](#). See supra note 30 (describing congestion and greenhouse emissions caused by auto traffic).

[\[FN100\]](#). See supra Part III.A.2.

[\[FN101\]](#). See Mann, supra note 44, at 635 (asserting that parking spaces are more expensive to build in cities than in suburbs).

[\[FN102\]](#). [2006 WL 1413698 \(N.J. Super. May 23, 2006\)](#).

[\[FN103\]](#). Id. at \*1-2 (describing application, and noting that neighbourhood was zoned “Downtown Center”).

[\[FN104\]](#). Id. at \*4.

[\[FN105\]](#). Id. at \*2.

[\[FN106\]](#). Id. at \*15. It is unknown whether a variance was ultimately granted. Even if a variance had been granted, the cost of litigation and of the landowner's quest for a variance might have made his attempt to comply with parking requirements more expensive than it would have been had he built his restaurant in a suburb with cheap, abundant land.

[\[FN107\]](#). See Mann, supra note 44 and accompanying text.

[\[FN108\]](#). See Litman, supra note 45, at 18 tbl. 7.

[\[FN109\]](#). Id. (explaining that suburban land costs \$455 per space, while downtown land costs \$15,385 per space). Non-downtown urban land typically costs more than suburban land but less than downtown land. Id. (providing an example of non-downtown urban surface parking costs which are \$2,083 per space).

[\[FN110\]](#). Id. A downtown surface parking lot costs just over \$15,000 for land and \$3,000 for construction, while a similarly located underground garage costs nothing for land and \$25,000 for construction; similarly, suburban two-level garage costs nothing for land but \$10,000 for construction, several times the cost of a suburban surface parking lot. Id.

[\[FN111\]](#). I note that in addition to preventing the formation of new businesses in already-developed areas, minimum parking requirements may also prevent expansion of existing businesses. See, e.g., [Scampoli v. Zoning Bd. of Rev. of Town of N. Providence, No. Civ. A. PC 04-240,1, 2005 WL 1433736 \(R.I. Super. June 16, 2005\)](#) (barring expansion of existing medical office due to parking requirements).

[FN112]. Cf. Craig N. Oren, [Getting Commuters Out Of Their Cars: What Went Wrong?](#), 17 *Stan. Envtl. L.J.* 141, 168 n. 169 (1998) (suggesting that free parking major factor in drawing tenants to office buildings).

[FN113]. See *supra* Part II.A.

[FN114]. See *supra* notes 27-30 and accompanying text (describing one case); cf. Martha Groves, Phantom Parking on the Westside, *L. A. Times*, June 20, 2007, at B1 (discussing Los Angeles businesses' attempts to evade requirements).

[FN115]. Weinberger et al., *supra* note 43, at 30 (explaining that businesses rarely build more parking spaces than required by law).

[FN116]. See *supra* notes 23-25, 32-35 and accompanying text (describing cruising and spillover parking problems, and noting that parking regulations often cause parking to be free for motorists).

[FN117]. See *supra* Part III.A (showing how minimum parking requirements increase driving), III.B (showing how minimum parking requirements are more burdensome in urban areas).

[FN118]. Installing parking may be limited only by maximum parking regulations. Portland and Cambridge are among the cities which have observed the need to find a “comfort zone” with regard to parking regulations. See Adam Millard-Ball, *Am. Planning Ass'n*, Putting on their Parking Caps 2 (2002), [http://www.stanford.edu/~adammb/Publications/Millard-Ball\\_2002\\_Putting\\_on\\_Their\\_Parking\\_Caps.pdf](http://www.stanford.edu/~adammb/Publications/Millard-Ball_2002_Putting_on_Their_Parking_Caps.pdf).

[FN119]. See Cervero, *supra* note 44 and accompanying text (explaining that land is generally cheaper and easier to acquire in suburbs).

[FN120]. See Shoup, *supra* note 6, at 31-32, 81 (suggesting that minimum parking requirements tend to be far too restrictive because they are based on Institute for Transportation Engineers estimates, which are based on data from heavily car-dependent neighbourhoods during the times of year with the heaviest traffic, as opposed to data from urban settings or routine daily demand); J. Richard Kuzmyak et al., *Transp. Res. Bd.*, TCRP Report 95 Parking Management and Supply 18-8-10 (2003), [http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp\\_rpt\\_95c18.pdf](http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c18.pdf) (citing numerous examples of places where municipal regulations required more parking than was in fact used by motorists).

[FN121]. See John M. Barry, [Form-Based Codes: Measured Success Through Both Mandatory and Optional Implementation](#), 41 *Conn. L. Rev.* 305, 305 (2009) (explaining how “[c]onventional zoning has encouraged suburban sprawl through its promotion of low density and single use development”).

[\[FN122\]](#). See supra notes 71-73 and accompanying text (explaining why low density discourages walking).

[\[FN123\]](#). See supra note 43 and accompanying text (describing how most North American parking is free); Don Ahern, *Latimer Says City Shortchanged on Road Funds*, St. Paul Pioneer-Press, July 27, 1989, at A10, (reporting that in St. Paul, Minnesota, “suburbs, unlike the city, have ample off-street parking”); Melissa Giamo, *Zoning Into A New D.C.*, Roll Call, July 28, 2008, available at 2008 WLNR 14053876 (describing how in the 1950s, urban planners required off-street parking in order “to make cities more like suburbs”).

[\[FN124\]](#). See Mann, supra note 44, at 635 (suggesting that construction of parking spaces is less expensive in suburbs).

[\[FN125\]](#). See supra cite to notes 51-58 and accompanying text (showing that (a) minimum parking requirements reduce density and (b) lower density in turn reduces walking and public transit usage).

[\[FN126\]](#). See Jessica Jay, *The “Malling” Of Vermont: Can the “Growth Center” Designation Save the Traditional Village From Suburban Sprawl?*, 21 Vt. L. Rev. 929, 941 (1997) (discussing anti-pedestrian aspects of suburban street design); Jeff Gray, *Police Blaming Accident Victims, Pedestrian Says*, Globe & Mail, Mar. 15, 2004, at A8, (stating that in suburban Toronto there is “trouble for pedestrians” because of street design).

[\[FN127\]](#). Cf. Bob Vrbanac, *Developer Has Big Plans for Former Canbar Lands*, Waterloo Chron., Apr. 12, 2006, at 3 (referring to “urban streetscape ... with on-street parking”).

[\[FN128\]](#). See supra notes 24, 26 (defining problem of “cruising”).

[\[FN129\]](#). I note, however, that minimum parking requirements are not the only way to control spillover parking and cruising. See *infra* Part V.

[\[FN130\]](#). See supra notes 75-79 and accompanying text.

[\[FN131\]](#). See supra notes 34-36 and accompanying text.

[\[FN132\]](#). For the same reason, it makes little sense to delay abolition until alternatives such as parking permit systems for residential parking and market pricing for on-street parking are introduced. See *infra* Part V.B-C (describing these reforms).

[\[FN133\]](#). This assumes that public transit would be improved if it was more utilized.

[\[FN134\]](#). See supra Part III.A.

[\[FN135\]](#). Cf. Schmitz, supra note 17 (noting that recession-induced budget gaps might

lead to transit service reductions).

[\[FN136\]](#). See *supra* note 94 and accompanying text (noting that motorists find it convenient to park in front of stores).

[\[FN137\]](#). See Lewyn, *supra* note 64.

[\[FN138\]](#). See *id.*

[\[FN139\]](#). See *id.*

[\[FN140\]](#). See Steve Doyle, Planning Commission Approves Bicycle Parking Ordinance, *Huntsville Times*, June 23, 2010, at 4A.

[\[FN141\]](#). See Lewyn, *supra* note 64, at 278-79 (describing Huntsville regulations).

[\[FN142\]](#). See Kay Campbell, Churches are Growing in Fresh Directions, *Huntsville Times*, Apr. 20, 2008, at 20S, (indicating downtown Huntsville saw “population growth of 8.7 percent since 1990...”). In fact, some cities are even imposing maximum parking requirements for certain districts. See Weinberger et al., *supra* note 43, at 43, 51, 65 (describing examples).

[\[FN143\]](#). See Linda Baker, No Parking: Condos Leave Out Cars, *N. Y. Times*, Nov. 12, 2006, at 12 (noting Portland revoked minimum parking requirements for its downtown in 2000 and San Francisco followed suit in 2006); Jennifer Langston, City Spaces Could Become Scarce, *Seattle Post-Intelligencer*, Apr. 29, 2006, at A1 (indicating that Seattle has no minimum parking requirements for its downtown); Andres Viglucci, Condo has Space- But Not for Cars, *Miami Herald*, Aug. 18, 2007, at B1 (Miami lifted parking requirements for downtown in 2003, and downtown housing boom followed).

[\[FN144\]](#). See Baker, *supra* note 143 (describing growth in downtown San Francisco); Viglucci, *supra* note 143 (describing downtown Miami construction boom); Brookings Inst. Ctr. on Urban & Metro. Policy & Fannie Mae Found., A Rise in Downtown Living 1 (1998), [http:// www.brookings.edu/es/urban/top21fin.pdf](http://www.brookings.edu/es/urban/top21fin.pdf) (noting 1998-2010 downtown population increases of 42% in Portland, 120% in Seattle, and 95% in Miami). However, these increases are part of a national trend. *Id.* (noting similar increases in other cities).

[\[FN145\]](#). See Litman, *supra* note 45, at 53 (describing market-priced parking in Pasadena, Ca.); see *id.* at 58, 63 (describing numerous cities' reduction of parking standards); see *id.* at 59 (describing numerous cities' “fee in lieu” programs); see *id.* at 65 (describing “parking permit” system of Arlington, Va.).

[\[FN146\]](#). See Shoup, *supra* note 6, at 229.

[\[FN147\]](#). See Litman, *supra* note 45, at 62 (noting that Ventura, Ca. plans to set parking prices designed to target fifteen percent vacancy rate).



[\[FN148\]](#). See Shoup, *supra* note 6, at 296-303 (describing proposal in detail).

[\[FN149\]](#). See *supra* Part III.A.1 (explaining how minimum parking requirements subsidize driving).

[\[FN150\]](#). See *supra* note 123 and accompanying text.

[\[FN151\]](#). A leading proponent of market pricing, Donald Shoup, argues that if parking fees were used to finance improvements, such as street trees and street furniture, urban areas would be so desirable as to be competitive with suburbs. See Shoup, *supra* note 6, at 403-27 (citing examples). However, the most successful experiments with market pricing were in growing, prosperous areas that were so desirable that people would have shopped there despite high parking fees. See Lewyn & Cralle, *supra* note 6, at 624-25 (providing support). It is not yet clear how well market pricing would work in a less prosperous, desirable business district.

[\[FN152\]](#). See [Cnty. Bd. Of Arlington v. Richards, 434 U.S. 5, 7 \(1977\)](#) (upholding such a system).

[\[FN153\]](#). See *supra* Part II.B (explaining spillover parking and how minimum parking requirements might eliminate problem).

[\[FN154\]](#). See Litman, *supra* note 45, at 20; see also Weinberger et al., *supra* note 43, at 8-9.

[\[FN155\]](#). See Litman, *supra* note 45, at 58 (citing numerous examples).

[\[FN156\]](#). See Weinberger et al., *supra* note 43, at 45 (listing examples).

[\[FN157\]](#). *Id.* at 46, 54 (providing examples).

[\[FN158\]](#). See *supra* Part III.A.1.

[\[FN159\]](#). See *supra* Part III.A.2.

[\[FN160\]](#). See *supra* Part III.B.

[\[FN161\]](#). See Shoup, *supra* note 120 (explaining that existing rules often overestimate amount of necessary parking) Cf. Kuzmyak et al., *supra* note 120 (existing regulations tend to overstate parking demand); M. Todd Henderson, Justin Wolfers, & Eric Zitzewitz, [Predicting Crime, 52 Ariz. L. Rev. 15, 20 n. 12 \(2010\)](#) (“[N]o central authority, be it the Soviet Gosplan or the Chicago Police Department, can aggregate and process all of the information relevant to deciding how to solve a complex issue, like how much bread or how many police officers are needed in a city at a particular time and location.”) For the same reason, it might be unwise for governments to enact maximum

parking requirements, as some cities have done for certain neighbourhoods. See Weinberger et al., *supra* note 43, at 43, 51, 65 (citing examples in various cities). However, a more detailed discussion of maximum requirements is beyond the scope of this paper.

[\[FN162\]](#). See Eric Walter, Will Rochester Zoning Changes Spur Development?, *Daily Rec.*, June 10, 2010, available at 2010 WLNR 12375517 (reporting that in Rochester, New York, city planners proposed less rigid minimum parking requirements; residents of area near University of Rochester opposed change because of concern about “excess on-street parking” by University students and employees); see also Langston, *supra* note 143 (“[S]ome neighborhood advocates argue that developers looking to make a quick buck will skimp on expensive parking spots, forcing more people to park on already crowded residential streets.”).

[\[FN163\]](#). See Langston, *supra* note 143.