

## **Private Street Dangerous: *Common Property Regimes on Private, Segmented Streets in Worcester, Massachusetts.***

### **Abstract**

Worcester, Massachusetts is a highly developed urban area in which 20% of the street length is held in individual segments of private ownership, typically without any collective governing body. This pattern differs from other reported examples of private street ownership, and may be relatively unique. This private segmented tenure results in a different pattern of maintenance and modification priorities, often in conflict with the city's objectives. This in turn raises questions about the nature of urban streets as a social contract, and the possibility of private streets as a common property regime. Worcester offers an unusual opportunity to examine these questions empirically.

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### **Introduction**

City streets are among the most communal of all spaces. They are trafficked by anonymous strangers, who casually assume their right to travel the street at all hours, for any purpose. Following Ostrom's taxonomy, we can call them a common-pool resource; although they are not an extractive resource, streets are *subtractive* both in terms of maintenance costs and the limited amount of traffic they can bear simultaneously { 1 }. The burden of providing this commons, without direct usage fees, has generally fallen on the municipal government. In most cities, streets are owned by the fisc, paid for out of general revenues, and maintenance of the streets is a substantial and visible element of the implied social contract between city and citizen.

In recent years, there has been a strong and sometimes ideological drive to privatize urban infrastructure. City streets have been a difficult and intriguing target for privatization. In the 18<sup>th</sup> and 19<sup>th</sup> century, private inter-city turnpikes rose and fell amidst strong popular opposition to the concept, and difficulty in recovering costs. This may have reinforced the common assumption that roadways are a natural public monopoly, and nowhere more so than inside the city. Although there has been a slight re-emergence of private turnpikes, the idea of privatizing the grid of intra-urban streets remains radical and relatively undiscussed.

When private urban streets have been considered, it has nearly always been in the context of common-interest developments (CIDs). Archetypically, a CID is a gated or semi-gated residential community, such as a condominium development. A CID is governed by a homeowners' association (HOA), whose authority is legally enforced through deed restrictions on the lots. The HOA provides infrastructure, generally, though not always, including the local streets. These private streets are either directly owned by the CID, or are owned in segments by the various individuals whose homes abut the street. In either case, the HOA controls and maintains the streets through a formal, legally binding process, very much in the manner of a municipal government.

The surface similarities between municipal governments and HOAs belie a heated controversy around

their differing political nature. The political advocates of CIDs paint a picture of a capitalist, communalist Utopia, in which the Rousseauian and urban problems have been solved once and for all. The opponents of CIDs view them as segregationist and quasi-totalitarian regimes, allowing the wealthy to secede from the national polity while simultaneously undermining the existing social contract{2}.

As often happens within the realm of such impassioned theoretical debate, empirical research is fairly hard to find. There are suggestions that private streets may experience certain efficiency gains over public streets, especially where security and sanitation are concerned. But the “behavior” of private streets in CIDs is, in most respects, very similar to their municipal peers. The street is a product of a government and even of a political ideology. It is not—despite the frequent libertarian argument—a product of raw market dynamics.

In Worcester, Massachusetts, we have an opportunity to examine private city streets in a much more organic context. By happenstance, a large portion of Worcester’s streets have been private for the last eighty years. Throughout the city, one can see small markers appended to street signs that announce, in the unpunctuated prose unusual to roadway signage “PRIVATE STREET DANGEROUS”. The spaces so referred to are not, for the most part, in any kind of CID, nor are they collectively owned by any private entity. Rather, these streets exist in segmented private tenure: each of the abutters owns in fee simple that portion of the street that crosses their property. Perhaps it would be even more accurate to say that the “street” consists only of contiguous portions of private property, each of which has been constructed to be part of a continuous roadway. For almost all purposes, the street does not have any broader legal existence. No owner has any legal claim against any other portion of the street, and no one is legally responsible to maintain it.

In a CID, the private streets are a creation of a private government. In Worcester, almost the opposite is true. Such governments as do exist are common property regimes created in response to the common exigency of the street. Moreover, Worcester’s private streets are not the product of any ideological motive to privatize city services. Indeed, they are not the product of any intentional city policy, nor are they a response to any public demand. Quite the contrary: as will be seen, both the municipal authorities and the private street owners are deeply critical of the arrangement.

The unusual situation in Worcester allows us to study private streets as an emergent type of urbanism, surprisingly separable from the better-known pattern of street planning, whether by public or private government. Worcester is an anomaly, challenging our assumptions not only about the creation of urban landscapes, but also to an extent about the creation of government and social order.

## **The Worcester Example**

### **Methods**

This study is based on a random site survey of 100 private and 100 public street segments within the Worcester city limits. The segments in question were chosen from a master list provided by the city assessor’s office, which defined each segment as public or private. While this cadastre has a strong claim to legitimacy, it will become apparent that there are other, more functional definitions of what constitutes a private street. Moreover, a number of the private street segments in the sample have either been completely eliminated or else were never constructed in the first place. None of the public street segments were “absent” in this way.

When I refer simply to *streets* surveyed, I am speaking of the 100 public segments and 91 private segments that have some physical existence. When I refer to the *listed streets*, I am speaking of all 200 street segments, whether or not they exist on the ground.

In the process of this research, I also conducted several dozen brief convenience interviews with private street owners and city workers. Some interview subjects expressed concerns about reprisals for the statements they made, and so I have not identified anyone by name, and generally avoided identifying them by street.

## **The Origins of Worcester's Private Streets**

“People found this city because they love other people.”

-Dar Williams

Worcester, Massachusetts, like most older cities in the United States, was laid out largely by private developers and individuals, who located access roads on land that they already owned. Typically these roads developed as gradual improvements were made to common footpaths, a process sometimes called the “cowpath” model of urban planning. Part of Worcester had previously been a Wampanoag settlement called Quinsigamond, and it is likely that the original streets followed paths laid out before white colonists arrived. This pattern is common in many cities: the initial surveying, and at least a basic level of roadway creation, predated any effort to incorporate and rationalize the city's roads.

In the 1800s, the maintenance of city streets became an increasingly high priority for local governments in New England. Rather than municipalize all the streets, though, many cities took responsibility for one street at a time, usually at the moment it was first paved. Soon most streets in most cities were incorporated into the fisc. This arrangement appeared very much like a social contract. Everyone used the streets; the streets were publicly owned and maintained at taxpayer expense; any street that was created would be municipalized at the first opportunity.

In the early 1900s, this contract began to break down on two fronts. Automobilists wanted their roads paved with tar-bound macadam, which degrades much more rapidly than cobblestones and is expensive to replace. At the same time, the East Coast cities experienced an unprecedented development boom, especially in clusters that were supposed to emulate the already-romanticized villages of rural New England. These developments, while often boasting tarred streets “for the better class,”<sup>{3}</sup> were nevertheless producing private streets at a rate that alarmed the city.

The Worcester Streets Commission—no doubt with some degree of prejudice—believed that the private streets being laid out by developers were substandard, and would not only be costly to repair, but would be a liability to other streets through run-off. In 1917, the commissioner wrote<sup>{4}</sup>:

“Much more satisfactory conditions would be in existence in our city if each street were taken over and constructed by the city when it was first laid out, and in the end it would be much cheaper for the abutters.”

But this was a financial impossibility. During the 1920s, the city added only about 1600 yards of streets to the public trust each year. While there is no easy way to measure, it is clear that several miles of private streets were being created annually throughout this era. There was no way for the city

to keep up.

Most cities facing this problem responded with zoning laws that aimed to regulate the quality (and thus the amount) of new street construction, keeping it in line with the city's maintenance capabilities. Worcester appears to have foregone this option, perhaps because they did not want to discourage a much-needed development boom. The backlog of streets awaiting municipalization became enormous.

In the face of this pressure, Worcester changed their subdivision laws in 1925, essentially denying any further responsibility for those streets that were still in private hands. They would remain private, the city announced, unless the abutters were willing to pay quite a substantial sum—today it can be \$80 per foot—to 'convert' the street to public ownership. Very few people have taken the city up on this offer.

This act left a large number of streets in private hands: perhaps 25% of the road length at the time. Today there are about 1000 segments of privately owned streets, totaling about 100 miles. The imprecision is real—the homeowners, police, and the various branches of public works have different opinions regarding what is and is not a private street, and it is relatively tedious to check. Moreover, the idea of private streets is foreign to most people—even in Worcester—and conflicts with widely held assumptions about the city's responsibilities. For example, there seems to be some latitude of opinion among Worcester's police as to whether or not someone driving on a street *they own* can commit a traffic violation. Indeed, one might ask whether or not police can even patrol a private street without creating a constitutional conflict—but this problem does not seem to have been addressed by the courts. So there is uncertainty not only about which streets are private, but about what that designation means.

In the 81 years since Worcester stopped municipalizing streets, the private streets have evolved substantially. Some have been abandoned; others have been expanded or modified. All of them have been maintained and repaired at least to some extent over the decades.

The private streets today exist across a wide range of neighborhood types. Some of them have the character of impoverished rural lanes, with chickens loose in the road. Others include some of the most well-heeled real estate in the city, with elaborate landscaping and private security in evidence. They tend to be on the edges of the city's development. They are noticeably less likely to abut commercial or institutional spaces, and more likely to be adjacent to undeveloped land. Table one shows the number of incidences of given usage types on the listed streets surveyed:

	Public Streets	Private Streets
Residential	91	84
Commercial	29	9
Institutional	15	4
Industrial	11	9
Woodlands/Fields	9	22
Waterways or Lakes	2	2
Agricultural	0	1

## **Broken Contracts, Pirate Streets**

When Worcester abandoned its policy of municipalizing private streets, it did not break any specific legal contract. But the system that emerged is an enormous departure from the abstract social contract of city life. Most people assume that a street in a city is a city street. The idea that the city takes responsibility for some streets and not others is a bizarre one for most taxpayers to entertain. I have spoken to several home-owners in Worcester who purchased lots on private streets (and, thus, purchased portions of the street) without realizing the unusual situation they were entering into. It simply does not occur to most people, even in Worcester, that the city might *not* be responsible for the streets.

*We have no idea what makes it a private street. We didn't know until after a month we had been here, and then we got a letter from a neighbor saying "we're trying to fix the street."*

Today there is a strong ideological push to privatize city services, especially in the global South, and the theory of privately-owned, cost-recovering city infrastructure has been put forward by various libertarians. But these theories are not part of the discourse in Worcester. The city does not support privatization of streets: in all their publications, they speak of private streets as an inferior and awkward arrangement: a "vestige of the past."

Nearly every private street resident that I interviewed in this project expressed a sense of injustice at Worcester's street policy. Most of them volunteered this opinion, usually as their primary observation about the street. There are two essential grievances. First, private street residents "pay just as much taxes as everyone else" but receive far fewer services. In many cases, they have paid hundreds or thousands of dollars to obtain services that most taxpayers take for granted. Second and more generally, private street residents tend to feel that the city does not pay attention to them or respond to their concerns.

*These people are non-existent to the city, except for the [tax] dollars.*

*They're putting everything [DPW funds] down on Shrewsbury Street or down around the city [hall], and there's nothing [no residences] down on the city at all. You never see a politician or a city councilman comes through here and sees what the hell we're talking about. It's disgusting.*

*The city is very lax in taking care of this. They don't show any interest.*

*We pay just as much taxes as anybody. The city doesn't care.*

For its part, the city has traditionally offered two services to the private streets, both on a contract basis. First, they will "convert" the street to public ownership for roughly \$60-\$80 per frontage foot. Some streets have been publicized in this fashion. Yet it is difficult to get everyone on a street to pay several thousand dollars in order to *sell* property, in effect, even if the property is seen as a liability. The city also offers its services as a contract road crew, charging \$20-\$50 per frontage foot. Either this rate is not competitive, or the city is backlogged working on public streets, for none of the people I

interviewed on paved private streets used the DPW as their paving crew.

Beyond these contract jobs, which seem to exist mostly as a display of goodwill rather than an actual market, the DPW engages in a great deal of discretionary work on private streets. This work is not paid for by the homeowners, and—importantly—may not even be requested by the homeowners. In the 1980s and 1990s, some of these policies seem to have been formalized, but the practice seems to predate the law.

The city's discretionary activities are focused on controlling runoff problems, and perhaps appeasing the more shrill complaints about road quality. But they extend far beyond that. The city clearly plows and grades many private streets on a regular basis, and allegedly also paves some streets, or repairs damaged pavement, at no cost. Furthermore, it seems clear that the city has at least occasionally converted a street without charging the residents. One city worker conceded this point:

*Yeah, I know the DPW has cut deals with a few streets, but regardless.*

Since these favors amount to a giveaway worth tens of thousands of dollars, they generate a predictable degree of suspicion and dark rumor. One of the most striking themes of the interviews I conducted with private street residents is their mistrust of the city and the DPW. Two people expressed to me that they were afraid of personal reprisals if their names were linked to any criticism of the city's policies. (I should add that I saw no evidence that such fears were justified from prior events.)

If there is any common theme to these complaints, it is that the city has exempted private streets from the general social contract, but nevertheless exercises a sense of sovereignty over these streets whenever it chooses to.

*The city used to use the street as a dump. When I was a kid, whenever they had construction debris or sand leftover from when they swept the road, they'd dump it here. Sometimes they'd smooth it out. I guess in their minds, they were improving the street; they were doing us a favor.*

*The city doesn't do anything. They said they would grade once a year, but its running to two, three years. They haven't cut this [Japanese knotweed growing on a city-owned lot abutting the private street]. I offered to cut it, with my equipment. They won't let me.*

Some of the city workers I spoke to view the private streets with a similar degree of antagonism. One person implied that private street owners were defrauding the DPW into providing them with services. This is entirely possible, since only 35% of the private streets I surveyed are signed to indicate their status, and there are many cases where it appears the sign has been intentional removed. In other cases, public streets have placed signage indicated that they are private, in order to discourage through traffic.

*That sign, that's a total lie. This is a public street. We just don't like to have people driving through it.*

The resultant confusion runs very deep. It is hard to get any list of public and private streets from the city, and no one has ever prepared a map. Some of this chaos may well be an attempt to beguile city workers into road cleaning, or plowing:

*They [the DPW] are plowing some streets they shouldn't be, especially down around Lake Ave.*

This respondent referred to private streets as “pirate streets,” a phrase which seems to capture a great deal of the city’s attitude towards them. For in nearly all the city’s discourse, the private streets are seen as a kind of reckless, irresponsible attack on dignified urban engineering. From the city website:

*Most private streets in Worcester are unpaved “dirt roads” that were never constructed to acceptable standards. They often lack basic road requirements like proper drainage or a suitable foundation... Those that remain are a vestige of the past. They represent an ongoing neighborhood and public works problem for which new solutions are needed. The fact that private streets were constructed without meeting acceptable engineering standards is the reason they pothole, washout or erode.*

Private streets, then, are identified with dirt roads, and especially with abandoned, un-maintained dirt roads. They are dangerous, not “acceptable,” and a blight on the city. These identifications are fairly common among Worcester residents. In general, people who do not live on private streets spend little time thinking about them, and often are not even aware of them. If asked, most people equate private streets with lack of pavement, and offer some comment to the effect that it is strange and unjust that the city doesn’t “do something about it.” A police officer to whom I spoke told me:

*Your public streets are mostly the ones that are tarred. Your non-public streets aren’t tarred, and they’re running down to nothing.*

This equation, quite simply, is factually incorrect. To begin with, the quality of Worcester’s *public* streets is far from uniform. 18% of the public streets I surveyed contained either “bad pavement” or worse. Potholes, washouts, and erosion are hardly a private monopoly in Worcester. Moreover, the range of street quality in Worcester gives the lie to a common defense of public ownership: the enforcement of egalitarianism. On Massachusetts Avenue, where property values average \$580,000, the pavement is flawless, there is an elaborately planted median strip, the street is specially signed to steer away commuter traffic, and on the day of my visit, a police officer came to challenge my reason for being there before I had even gotten out of my truck. Yet there are dirt streets, without such elaborate maintenance and security, that are also maintained by the taxpayers.

More importantly for our purposes, it is not quite accurate to say that most of Worcester’s private streets are unpaved. Some 49% of actual private streets are fully paved, and better than 68% of them are at least partially paved. Of the unpaved private streets, 25% appear to have been paved at some point in the past. Paving, then, is a recurrent maintenance goal on many private streets, and it is one that the streets’ owners are quite capable of meeting.

And in these numbers lies a complicated and fascinating tale. The two narratives we have just discussed—the city’s broken social contract on the one hand, and “pirate streets” problem on the other—consume most of the little attention that anyone pays to Worcester’s private streets. Perhaps this is inevitable. But there is a third story, and I believe a much more interesting one: the question of how private street residents have coped with their unusual situation.

## **Maintenance Goals**

“ ‘I love you!’ – Oh, say it with paving stones!”

-Situationist graffiti, 1968

The process of street creation, maintenance, and modification is shaped both by goals and constraints on achieving those goals. For public streets, the goals are straightforward. The city is interested in creating a network of streets that facilitates commercial and commuter traffic. They aim to reduce traffic—especially high-speed traffic—in residential neighborhoods. They aim to keep streets cleaned of debris, accessible to emergency vehicles, and generally reduce the risk of accidents that might result in a lawsuit against the city. A very important secondary goal is to keep streets surfaced and drained so that they do not wash out.

These goals are sometimes at odds with one another. For example, a wealth of literature suggests that increasing the size of traffic arteries increases the overall traffic burden{5}. Again, a paved street in good condition is likely to be traveled more often and at faster speeds than an equivalent route in poor condition. Wider streets can handle more cars, and are more negotiable by emergency vehicles, but are dangerous and obnoxious to pedestrians. Moreover, wide stretches of blacktop create a twofold environmental stress, both by lowering the city's albedo and displacing large volumes of surface runoff into the drainage systems. "Hot Cities" and combined sewer overflows are quintessentially street-related problems{6}.

Private street owners are quite capable of maintenance regimes that match those of publicly funded streets. 30% of private streets surveyed had "excellent" pavement; 16% are entirely "excellent pavement." Only 52% of private streets have city streetlights, but 29% have some type of private streetlights. For public streets, these figures are 91% and 19%, respectively. Again, 23% of private streets have built paved sidewalks of some type. This survey was conducted in the spring of 2006, and could not gather data on street-cleaning or plowing. But it is the author's experience that private streets are routinely plowed in the winter and cleared of major debris otherwise. These are all basic infrastructure questions, normally considered the function of municipal government. It is clear that many private street owners, even in low-income areas, are capable of creating the autonomous equivalents of the city services they are missing.

Capability aside, private individuals do not necessarily have the same maintenance goals as the city. A public street owner has no choice in the "look and feel" of their street, except at the rarefied level of their elected representatives. A private street owner has a very direct say in what they want their street to be. In many cases, they do not want a street that mirrors the look and feel of public streets. Street quality is subjective: what the city sees as a "vestige of the past" the residents may see as quiet and elegant.

A narrow dirt road is, from the city's point of view, much worse than a wide paved road. But from the point of view of an abutter, the paved road may be a source of heat, noise, through-traffic, and drainage problems that a small dirt road does not present. This was a point I heard many times over:

*I would like to keep it like this [unpaved].*

*Q: Would you rather the street were paved?*

*A: NO! I like the privacy, I like it dirt. I have NO interest in paving.*

Or again:

*No one wants to get it paved. We never pushed for making it private [sic], I mean, getting the city to pave it.*

*We'd never get it paved. I don't think the neighbors would go for it.*

*It's off the beaten path but it's close to everywhere. And it's very, very quiet.... even though we've got a [shopping] plaza right here, it's very quiet. It was nice for the kids, they could play in the street and there would only be a car now and again.*

All of these statements reinforce the idea that an unpaved road can be desirable for the abutters, not simply because it often represents a monetary savings, but as an end in and of itself. A similar pattern emerges with deteriorated pavement and erosion damage. One man described to me how a stretch of poor pavement discouraged outsiders from using his street for through traffic:

*The bottom is where the potholes form. Up here, it's just bumpy, and if you drive slow, that's no problem.*

Clearly, he and his neighbors did not create the potholes, but he viewed them as a sort of naturally occurring speed bump. A number of statements like this all served to suggest a more complex view of the utility of a street to its abutters. A street not only provides public access, but creates a certain type of environment. Intervention such as paving or installing lights can be used to modify that environment. Non-intervention can also modify the environment in more or less intentional ways. Allowing gullies or potholes to enlarge, or allowing the edge of a street to be colonized by shrubs, are non-intervention strategies that may achieve results the abutters desire.

Given this point, we must acknowledge that asphalt is not synonymous with satisfaction. Many of the owners of the 49% of private streets that are partially dirt seem quite happy about the arrangement. At least some of the abutters on public streets that are paved might well prefer to live on a quiet dirt road.

## **Modifications**

Private street owners have substantial control over their streets beyond the question of pavement quality. As we might expect from the divergence of priorities mentioned above, many private streets have been developed into forms that are radically different from *anything* created by the city.

For example, I have been to two private streets that are, in fact, no more than concrete sidewalks. Abutters park at the end of the street, or in alleys, and walk in to their houses. One of the abutters on such a street told me:

*My children can't run out in the street. And it's quieter than it would be out there [gestures at the street with auto traffic] It's ok. It's worked for us.*



Other streets have been altered in different ways. Out of the 100 listed private streets surveyed, 9 have been eliminated altogether. These streets still exist in the assessor's list, but there are others that may not. A planning analyst described to me a petition on one private street saying:

*They essentially want to keep this road private forever and not just private, but strike it from Worcester's memory...they said 'we can take care of the road ourselves.'*

There is no easy way of determining how often this has happened. As the assessor said, "we don't keep track of ancient history."

Among the remaining streets, 18 have been shortened or barricaded; one has been gated; one has been extended; one has been turned into a paved footpath; one has been turned into a concrete staircase; and one has become a "tunnel," completely encased in the adjacent buildings. Some of the streets that have been barricaded remain beyond the barricades as footpaths or bike trails. In short, nearly one third of all the listed private streets have undergone substantial modification from their original layout{7}.

These changes represent enormous creative energy; urban planning without urban planners. We should pay special attention to the forms that private street owners have developed which have no real parallel in conventional urban planning. Of these, the "sidewalk streets" and staircases are probably the most important. I know of four such streets in Worcester, all private. They convey a charm quite unlike

anything to be found in most New World cities, where pedestrian streets are usually restricted to major commercial districts. They are very quiet, reduce hardscape to a bare minimum, cost almost nothing to maintain, and doubtless promote a strong sense of neighborhood. They also present a serious challenge for movers, contractors, and emergency vehicles. Weighing these costs and benefits, however, is beyond the scope of this discussion.

We should also pay attention to the general tendency of private street modification. While private street owners have created a diverse range of forms, there are certain common motives and themes. The most important of these have to do with connectivity and narrowing.

## **Connectivity**

And thurgh this strete men myghte ride or wende

For it was free and open at eyther ende

-Chaucer, *The Prioress's Tale*

The most striking feature of the various modifications described above is that two-thirds of them affect traffic connectivity. Of the private streets surveyed, 16% have been gated, barricaded, or truncated in such a way that they are opaque to through traffic. The barricades are usually made of stones or debris, although some have bollards, and I have seen one composed of large potted plants. The older barricades have often grown up into forest. I interviewed one woman who remembers a road passing through a stand of beech trees that cannot be less than fifty years old. In a few cases, roads have been barricaded by erecting buildings on top of them.

In other cases, portions of streets have been allowed to deteriorate to the point where they are impassable, or at least very daunting to a driver looking for casual shortcuts. This could be simply a matter of carelessness, or a concession to the owner's limited paving budget. Yet these "barricade gullies" are often found on otherwise carefully paved streets and driveways. One elderly woman showed me a gully which she described in gleeful terms:

*Once in a while, maybe once a year, we get people come in here at ninety miles an hour, doing a Dukes of Hazzard. Up until there. And they go whooo, and that's the end of their car.*

This hostility to outside traffic is understandable quite apart from noise and safety concerns. A street degrades roughly in proportion to the amount of traffic it has to bear. The owners of a private street have to pay for through traffic, either in terms of added maintenance expenses or decreased utility. Private street owners are well aware of this distinction:

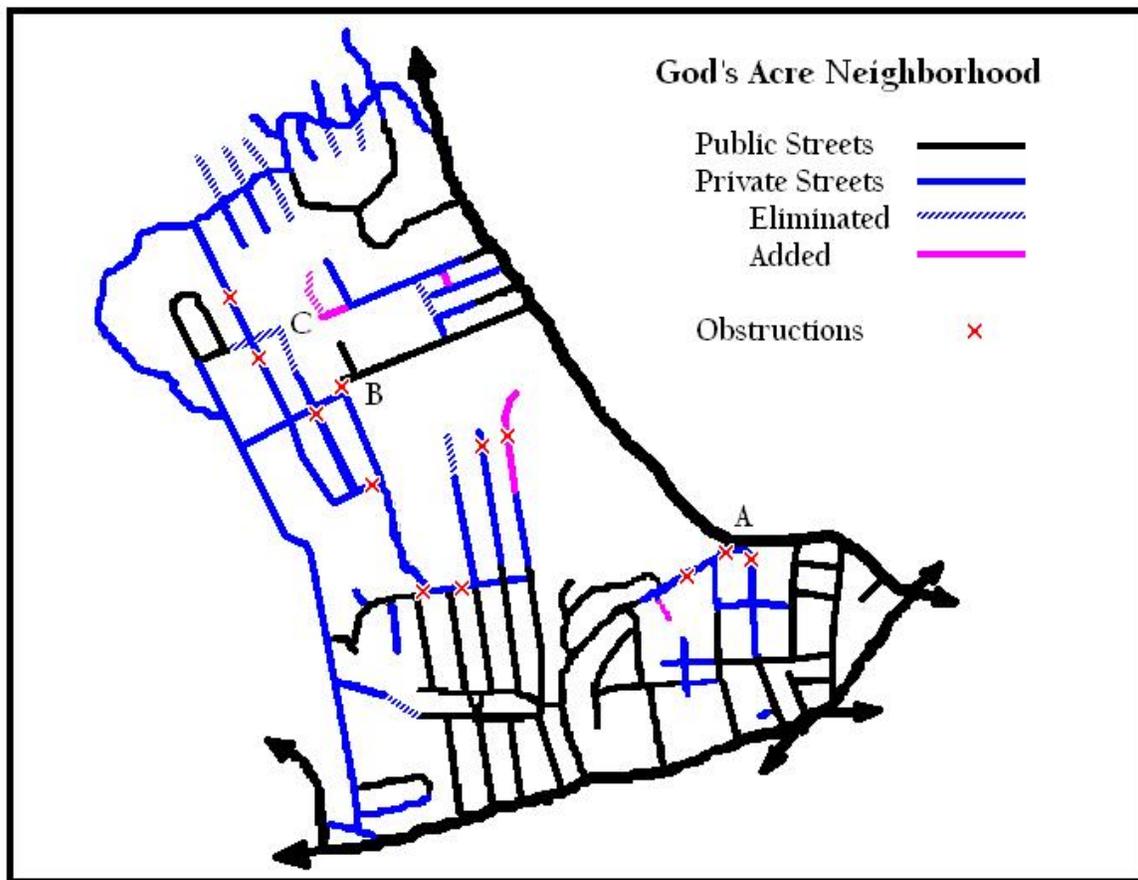
*It used to be much more private than it is now. Now it's sort of private in name only. People drive through here. It used to be the only people who drove through here were the ones that lived here.*

In some libertarian Utopias, this classic "free rider" problem would be dealt with by turning the streets into turnpikes, and either charging vehicles to enter them, or—in the model of a gated community—excluding vehicles that are not invited by a paying customer. It should be pointed out, then, that nowhere in Worcester has this happened, even on streets that are sufficiently well-endowed to afford a gatekeeper. In fact, no private street that I am aware of has gates that are generally shut. Private

street owners in Worcester do not try to recover costs from through traffic, but they do try to minimize the amount of through traffic.

Given this rationale, it makes additional sense that many private streets maintain dirt roads rather than paving. Again, 11% of private streets have no visible street sign (as compared to 1% of public streets). All of these things combine to dissuade outsiders from using the street as a possible shortcut.

These connectivity changes can have neighborhood-level effects on Worcester’s traffic flow. The city abounds in examples of this, but I want to present one as a case study. The map below shows the “God’s Acre” neighborhood, located between two major public roads: Route 9 to the South, and Mill Street to the East.



Several of the private streets in this neighborhood are well paved. However, almost every opportunity to use the neighborhood as a shortcut has been eliminated or at least made unappealing by passable-but-obstructed roads, as at points A and B. Likewise, although there has been a degree of road creation and extension in this neighborhood, none of this work has made the neighborhood more permeable to the outside. For example, the logical completion of the road at point C would provide a usable shortcut,

and while substantial modifications have been made to the road layout in that area, such a connection has not been provided.

Each of the various modifications shown on this map makes sense in terms of the immediate local priorities. In sum, though, they create very broad effects, insulating dozens of blocks from through traffic, and forcing drivers to seek a path perhaps a mile and a half longer than they otherwise might.

## Narrowing

The second common feature of private streets studied in this survey is that they are narrower than their public peers. The public streets sampled were, on average, 43% wider than the private streets (counting on-road parking in each case as part of the actual width). This difference is not simply attributable to the fact that major streets are apt to be public. In fact, the widest ‘street’ in this survey was a private street modified to be a parking lot.

Rather, there seems to be a clear tendency for private street owners to encroach on the street width. There is visible evidence of this in some places, where the curb cuts no longer line up with the perimeter established by sidewalks, lawns, brush, and “off-road” parking. On longer private streets, there are often pull-overs to allow cars to pass each other, the pull-overs being the remnants of second lane. Sometimes the process itself is visible: on several private streets, I saw recent paving jobs that had pointedly not covered the entire width of the street. In one case, the homeowner had elected only to pave a single lane of what had been a two-lane street. Private street owners are quite aware of this goal:

*The right of way goes out to here [indicates a point on the lawn] but we only use this part. So now we have more lawn.*

There is also quantitative evidence of narrowing from the assessor’s list. Although the term “right-of-way” is something of a misnomer for private streets, the assessor’s list contains ROW widths for 26 of the listed private streets, as well as almost all the public streets. We can compare the listed ROW width with the observed street width, which is usually a good deal smaller. Strikingly, the ratio between listed and actual width is more than five times higher on private streets. While public streets tend to occupy nearly the entire ROW, private streets occupy a functional minimum.

The reasons for this narrowing hardly need to be elaborated: it is cheaper to maintain a smaller road, and while utility for the owners might be somewhat reduced, it is also less attractive to through traffic. Moreover, utility for the owners may actually *increase*, because narrow roads are easier to keep shaded by trees. Full tree canopies are not simply an aesthetic benefit. They interrupt rainfall, reducing runoff issues, and the shade can extend the replacement cycle for pavement by as much as 50%.

Worcester in general is a “forest city;” almost 90% of the streets have trees, some of them massive. From certain high points, the whole city appears to be a forest, the canopy only broken here and there by rooflines. As the following table shows, this general characteristic is expressed more strongly on private streets. They are almost three times as likely as their public peers to be completely shaded by tree canopies.

	Private Streets	Public Streets
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No trees	10%	14%
Some trees	71%	79%
Street entirely under canopy	19%	7%

This expansion of tree cover, and especially of full canopy cover, has significant public benefits. In addition to protecting pavement from photodegradation, trees cool the city, absorb carbon emissions, absorb rainfall, provide wildlife habitat, and increase property values. {8}

Again, there is some evidence that the more intensive tree cover on private streets is recognized as a benefit by the owners, and may be an intentional maintenance goal. A planning analyst for the city related the following story:

*This woman came into the office in her bathing suit and a little terrycloth skirt. She had just come back from the beach. Did you ever read Peter Pan? She looked like the “lost girls.”*

*She said she got a letter from this office, and they were going to cut down her trees. And she was screaming, “I don’t want them to cut down my trees, do you hear me!” I’m the youngest in my office, so my co-workers say “C\_\_\_\_, can you deal with this?” And they go.*

*She lived on M\_\_\_\_ street [private], and it turned out that the petitioner wanted to take the street off the city’s list. So I tell her this and there’s some back and forth. I said, “Look, your neighbor is essentially stopping the possibility for development of the land up there.”*

*“So does this mean they’re not going to cut down the trees?”*

*“Yes.”*

*“I like this idea.”*

*But then she comes to the hearing, and she’s wearing cut-off jeans and a wife beater. And [the commissioner] says “does anyone want to speak for or against this proposal?”*

*And she says: “I just want to check, I just want to make sure that if I say I like this idea, that means they won’t cut down the trees.”*

While this anecdote speaks to a certain lack of communication on M\_\_\_\_ street, it also suggests that both the petitioner and the aggrieved woman considered trees a fundamental feature of their street, and were prepared to go to City Hall to protect them.

Finally, narrower streets reduce the total amount of hardscape in the city, providing less pressure on the natural and artificial systems that absorb water runoff. Narrow streets shaded by trees redouble these effects, as described above. Most private streets do not have any engineered system of underground storm-water drainage, and this absence is a major complaint of the city. But narrowing, tree cover, and the reduced use of pavement all combine to lessen the surface runoff from private streets significantly.

## Social Choice on Private Streets

The modifications and maintenance work described above are planned by the private street owners themselves, although often outside labor is hired to execute them. Such decisions can easily have a direct effect on a dozen or more households and businesses. These decisions come out of something like a Hobbesian “state of nature” between the neighbors. With trivial exceptions, Worcester’s private streets are not organized as CIDs; co-abutters have not entered into any contractual agreement with each other and apparently do not have legal obligations to the shared. Even if an *ad hoc* association is formed, no one else on the street is obliged to participate in it. This situation resembles a common-property regime, but common property regimes are alien to most understandings of municipal government. Moreover, the street is not owned by a government or a collective body, as is usually the case in a common-property regime, but by a series of independent private owners. How does social choice work in this environment?

Building an empirical picture of social choice on Worcester’s private streets is very difficult. As a general rule, the decision-making groups that form to deal with private street maintenance are both informal and temporary. It is hard to view them as governments, or even provisional governments, because they lack any definite structure of authority and obligation. However, in their moments of activity, these groups do try to compel cooperation from their neighbors, and the resulting dynamics are somewhat akin to those of governments.

Typically, short-term maintenance work, and the ensuing costs, are handled entirely on a voluntary basis, with fairly little consultation or compensation between neighbors. But such maintenance is generally restricted to the section of road that crosses an individual’s property, and perhaps one or two other spots they find egregious.

*Every spring, we have to clean out the storm drain [swale].*

*The neighbors there fix the gulleys. They build little dams and things to break them up.*

*We take care of from that fence to that fence.*

*I used to go dig trenches and take the fill and fill in the holes in front of my house. I’m too old to do that now.*

More elaborate and possibly controversial work includes contracting snowplows, re-paving or barricading a street, or putting in a sidewalk or substantial drainage system. Sometimes this work is massive: I have seen retaining walls built with thousand-pound granite slabs, and a dry well for runoff that is allegedly 25 feet deep. Such projects generally involve some kind of *ad hoc* association consisting of the most enthusiastic parties. They obtain the approval of the other abutters, and often (but by no means always) ask for cost-sharing of some type. One pattern, not infrequent, is that a resident with access to heavy equipment and the relevant skills will do the work, while other residents contribute time and money to some other collective project, typically a barbeque party.

Clearly, the scenarios described above are only applicable when all abutters cooperate with a proposed course of action. It would appear that this is, in fact, generally the case. To be sure, a few abutters who ultimately cooperate may not want the road to be paved or repaved, or may not want to help pay for it:

*We've had plenty of arguments.*

Such conflicts tend to resolve in favor of the majority. Those holding minority viewpoints on street maintenance, beyond facing the usual social pressures to conform, may experience a kind of impasse specific to the private street context.

We are accustomed to thinking of streets as wholly communal spaces, so it seems quite awkward to defy the community's wishes vis-à-vis the street—even if one owns part of the street outright. This is in sharp contrast to the defiant conflicts often seen by homeowners in CIDs, who may go to war over paint color or lawn height, even though they do not, in fact, have a legal claim to make those decisions themselves. A man resisting the HOAs legitimate claim to make him repaint his garage is a sympathetic figure. A man resisting his neighbor's earnest request that he help pay for a snowplow is simply a misanthrope:

*At first he said he wasn't going to help us pay. He was, you know, a bad word.*

Further, it must be apparent to people in dissenting positions on private streets that any effort to *formalize* the decision-making process will inevitably lead to majority rule, possibly giving them even less voice than they have in an informal anarchy.

For these reasons, minorities on private streets seem willing—if not happy—to accede to the wishes of the wider community, even without a formal structure that compels them to. I did see some exceptions to this rule, and I want to record them all in the interests of future research.

The major source of lasting conflict on private streets is the contentious interface between the city and private street owners. Many interviewees felt that the city's policies were arbitrary, and suspected the city of favoritism, so the idea that certain neighbors were “on the city's side” has become a source of division on some streets, often to a surprising degree. One manifestation of this is that, in dealing with the city, an *ad hoc* group of neighbors may not be enough to get results. The city requires the unanimous cooperation of the street owners for projects like municipalization, and so imposes a formal structure that the street may not have.

*The kids sent around a petition [to pay the city to municipalize the street]. Not everyone would sign it. Everyone else likes it like this.*

Similarly, a city worker told me a story of a group of private street owners who wanted to subdivide their lots, a process which is generally quite simple on a public road:

*But with a private road, under Mass General Law they leave it kind of vague—it's up to the permit granting authorities' subjective opinion of the reasonableness of the way. Five of them go out and just drive the street and if they feel like their engine is gonna come out they just deny the petition, which usually limits the future development possibilities.*

*Since it's only \$35 once you have the Mylar people submit over and over and over. So on L\_\_\_\_\_ street they applied and were denied. So this woman called me up maybe fourteen times in three weeks, saying things like “What if I did this to the road? We have a tree stump in the middle of it, if I took it out would they approve it?” And I'm telling her: “I'm not an engineer, you know.”*

*They applied three times. Finally they applied just so that they could come to the meeting and listen to the discussion about the road. They crowded up to the table, you know. The board definitely mentioned that L \_\_\_\_\_ street needed to be re-graded.*

*So they started regarding the road themselves. Brought in some gravel. And they were using a hose, and all the runoff started going into the neighbor's garden. So he called the police, and police came and said they didn't have a permit to grade the road. They hadn't talked to their neighbors.*

What is conceptually interesting about these stories is that the demand for super-majoritarian unity is imposed from above. Innumerable private streets have been graded and paved without the explicit approval of every resident. Very few people, however, are willing to personally block a course of action that all their neighbors are invested in. In relying on municipal authority to make the same decisions, it is much easier for such projects to be blocked.

In all my interviews, I heard only one story that fit the classic description of a free-rider problem in a commons, without any municipal involvement. In this, a long- drawn-out conflict, an *ad hoc* committee decided to pave their rather steep street, and all but one of the abutters agreed to pay for this. The holdout refused to pay, alleging that he did not want the street paved at all. His neighbors argued that, since he lived at the top of a street that he himself had barricaded, he would actually get the most use out of the pavement. He responded that, regardless, he did not want the street paved, and he was under no obligation to help pay for it. After a range of social pressures had been exerted in vain, his neighbors gave up trying to get him to pay what they considered 'his share.' They arranged to pave the street up to his property line:

*And can you believe it, when we got the paving guys, he told them to do his part, too, and even his driveway. They didn't know he hadn't paid. We couldn't believe it.*

So here we have a free rider problem, found in myriad economic texts, and followed upon by a rather audacious theft of services. That such problems can and do occur, for some, signs the theoretical death warrant of the commons. But I want to call attention to the actual resolution of the problem. First, the community agreed to pave the street in spite of the free rider. Second—and this outcome is probably not found in any economic textbook—the man's son, mortified at his father's behavior, paid for the entire re-paving job, two decades later. If the private streets are not immune to free rider attacks, they are certainly very resilient.

### **Private Street Neighborhoods**

A number of developments in Worcester date to the 1920s, when the city stopped municipalizing new streets. In these places, such as Columbus Park or the God's Acre neighborhood{9}, all or nearly all the streets for several blocks are private. This offers us an important contrast to a conception of an isolated private street within a matrix of public streets. The standard unit of urban character, after all, is not the street but the neighborhood. Private street neighborhoods let us look at how private streets behave when they are surrounded by other private streets.

I looked at perhaps a dozen sites that could arguably be called private street neighborhoods. These span the grand list from the wealthiest to some of the poorer neighborhoods in the city. Some of them blend into the surrounding public-street neighborhoods, and others have quite distinctive signage: "This is not a public street!" or "No City vehicles Except Emergencies." They are all, however, quiet residential areas, with a slightly more rural character than most of Worcester.

*Oh, it was great growing up here. Kids could play in the street. It was almost like a paradise, you know, so close to the downtown. Like being in the country, in the city.*

*It's really very quiet. Only one car comes by once in a while, so [my son] can play in the street.*

*We were looking for a place where we would feel comfortable, not that all the white people would move out. And that the kids could walk around. I went to see some places and I thought "No, we could never live there."*

As we have seen above, private streets have neighborhood-level dampening effects on traffic flow, and this doubtless accounts for their appearance as safe havens for children. That is not to say that private streets actually *are* safer than their public counterparts, a claim that has been made of the St. Louis plats. Many factors are at play. Reduced density and the scarcity of commercial establishments means that there are fewer "eyes on the street." Police patrols are probably less frequent, if they occur at all, and response time may be slower. (None of the streets in my survey employed private security, a strategy frequently cited by libertarian urbanists{ 10}. Several streets did have admonitory signage, including warnings that strangers would be surveilled, or have their license plate numbers recorded. At the same time, the demands of private street life force people to know their neighbors, which is the most robust preventative factor for crime{ 11}.

The most common criminal act that interviewees complained of was illegal dumping of trash and yard waste. One more dramatic story emerged:

*We decided we would go down for a walk on U\_\_\_\_ lane, because it's nice and quiet because there's never any cars on it.*

*And we're down there and this truck comes up the side street, and this woman leaps out of the cab. She's all fucked up, and she's screaming "help me, help." We don't have our cell phones, so we knock on two people's doors, but no one would open up. One of them locked the door when they saw us coming.*

*The guy had told her "I'm gonna take you to U\_\_\_\_ lane, where no one can hear you, and beat the shit out of you and leave you for dead." He had tried to gouge her eyes out, broke her arm. She was scratched and bruised...*

In these cases, the quiet, rural aspect of the private streets is precisely what makes them a desirable location for crime. Notably, in the latter case, the crime is not directed at the private street residents; it was domestic violence, intentionally transferred onto a private street. The choice was apt, I think. U\_\_\_\_ lane has long been embroiled in a complex battle with the DPW, and many of the neighbors are unwilling to speak to each other. This level of dysfunctionality, with its Kitty-Genovesesque results, is uncommon in private street neighborhoods.

For example, the private streets in the neighborhood around Q\_\_\_\_ Pond have a close-knit association which largely overlaps with a local fraternal society. They maintain the Pond, the surrounding woods, and numerous hiking and biking trails as a kind of private park. The whole of this is open to the public. I interviewed a young man who frequented the beach:

*The other day I almost had to beat these three kids up, these little punks. There were people*

*fishing off the dock, and the kids were shouting, you know, 'nigger.' And there were like twenty or thirty little kids here. I mean, I wouldn't really have done it. But people have to be cool, because this is private land.*

*If you go to a park there's trash everywhere. [Points at one of the houses through the trees] I know the old guy, he knows we're cool. We came here this afternoon, and we cleaned the whole place up. All the broken glass. You know, if I'm here partying, and I see some kid cut himself on broken glass, that breaks my heart.*

*If we get too loud, the old man knows us. Even if he calls the cops, they'd take like thirty minutes to get here. It isn't like a park.*

It was an interesting, contradictory discussion. He alleged that the beach was cleaner than public beaches—which certainly seemed true—but also that he had spent several hours cleaning it. He thought that the fact of it being private land made people more polite, and described how he had to threaten someone in order to keep the peace.

Perhaps the unspoken logic here is that in a private neighborhood, the participants “have to be cool,” because no one else is going to enforce the social order for them. There is no paladin coming to plow the snow or repair the potholes or pick up the broken glass. The idea is not necessarily a comforting one, but it is a motivational idea, and it may also be a source of social cohesion.

### **Commerce and Industry on Private Streets**

Private streets are about three times less likely than public streets to have either commercial or institutional owners. Industry, however, is just as common on private streets as on public streets. More subjectively, I observed that the commercial establishments on private streets are typically those that do not rely on constant through traffic. Used car sales lots, for example, are reasonably typical private street businesses. A drive-through restaurant would be unheard of.

A number of business owners use the private street as a *de facto* parking lot, sometimes gating it (if it ends on their parcel). Several proprietors expressed to me that they were satisfied with this arrangement, and only one business owner that I spoke to had reservations:

*If we don't plow it, it doesn't get plowed. These people don't get out. So, yeah, it kind of does have its adverse.*

While this grievance is phrased generically—the speaker was expressing concern for the other residents on the street—we can hear in it a kind of assumption of responsibility. The business (in this case a metal recycling plant) presumably has more interest in maintaining the street, and more capital available, than the surrounding homeowners. Without some cost-sharing mechanism, the homeowners can quietly rely on the businessman to plow the streets for them.

In fact, it is likely that the extraordinary motives of commercial establishments have been at play in many of the cases when street owners have petitioned the city to municipalize the street. As mentioned, there are no easily accessible records of this process, but there is some reason to believe that private streets (especially in the Park Avenue corridor) were municipalized mainly at the behest of store owners.

If this is the case, it helps to explain the low incidence of storefronts and institutions on private streets. It also suggests that establishments that thrive on public traffic are willing to pay a premium—indeed, they are willing to pay more than \$6.50 per inch—to have their street paved and maintained. There is no particular reason why this demand should not play out under purely private enterprise. If the City of Worcester refused to municipalize these streets, it seems very sure that the storeowners would pave them, anyway.

## The Political Economy of Private Streets

Prior to the 1970s, the theoretical conflict between private and public ownership of roads generally focused on the ideal of the inter-city turnpike. Private turnpikes became popular in New England shortly after the revolution—one of the most prominent ran between Brookline and Worcester itself, founded in 1810. The popular sentiment of that era was ideologically opposed to turnpikes, which seem to have been considered a typically monarchist form of oppression{ 12}. Moreover, the easy creation of “shun-pikes” to circumvent tollbooths made it difficult for turnpikes to recover costs, and almost all of them had failed by the mid-1800s.

The turnpike model was revisited in the 20<sup>th</sup> century, first by the State, which created many public turnpikes in the 1940s and 1950s, and then by libertarian economists. With some degree of revisionist nostalgia, turnpikes were remembered as a plausible solution to the vaunted problems of publicly owned infrastructure{ 13}. This influenced policy in a number of places, and there is a recent trend to privatize existing turnpikes or build new, private turnpikes, such as the Chicago Skyway or the Trans-Texas Corridor. This competition between a traditionally public service and a private company has had some fallout—in Orange County, for example, turnpike developers obtained a contract that the state would not improve roads in the area surrounding the turnpike. Taxpayers predictably found this outrageous, and ultimately had to buy out the private investors in order to rescind the deal{ 14}.

The discussion of CIDs (and their component private streets) has followed similar lines. The ur-examples of CIDs in the U.S. are to be found in St. Louis, where a number of plats began to be drawn in the 1850s and thereafter, as the city’s wealthiest residents tried to escape industrial expansion, “objectionable buildings,” and—it seems very clear—objectionable neighbors. This is a very important model. Tens of millions of Americans now live in CIDs. Private communities are supposed by their advocates to have distinct economic, political, and indeed *moral* advantages. Boudreaux and Holcombe{ 15}, writing about CIDs, argue that they are “the closest thing to a real-world social contract as can be found because it is created behind something analogous to a veil, people must make the explicit choice of moving into the contractual government’s jurisdiction, and the government is at no time imposed on anyone.”

Private streets, in this view, can solve the Rousseauian and urban problems in a single sweep of pavement. But not all authors have been so sanguine about this question of consent. McKenzie has pointed to a widespread pattern of CIDs exerting extraordinary legal controls over their members, regulating everything from how frequently people use their back door to whether or not they can kiss in public. Such stories frequently make the news, with residents decrying their HOA as a totalitarian state in miniature.

It is especially important to note that HOAs' policies can change, and most HOAs lack any but the most rudimentary system of democratic safeguards. The homeowner in a CID is contracting not simply to obey a specific set of decrees, but to obey future decrees, as yet unenacted. To resist would, in most cases, be massively expensive in time, opportunity, and emotional energy. It is hard to reconcile this

political dynamic with the abstract claim that “government is at no time imposed on anyone.” Yet this line of criticism is only a *tu quoque* attack: that HOAs are themselves coercive bureaucracies, micro-states, might be a matter of concern for libertarians, but it does not distinguish them much from municipal governments.

Worcester’s private streets complement this discussion in a rather oblique way. Both the advocates and detractors of private communities (and their streets) have made a series of assumptions about what those streets would look like. The anarcho-capitalist Rothbard succinctly describes “private street companies”{16}:

*Which would own only the streets, not the houses or buildings on them. The street companies would then charge landowners for the service of maintaining, improving, and policing their streets. Once again, safe, well-lit, and well-paved streets will induce landowners and tenants to flock to those streets; unsafe, badly lit and badly maintained streets will drive those owners and users away. A happy and flourishing use of the streets by landlords and automobiles will raise the profits and stock values of the street companies; an unhappy and decaying regard for streets by their owners will drive the users away and lower the profits and the stock values of the private street companies. Hence, the street-owning companies will do their best to provide efficient street service, including police protection, to secure happy users....It is infinitely better to rely on the pursuit of economic interest by landowners or street companies than to depend on the dubious "altruism" of bureaucrats and government officials.*

This model is indeed used by a great many private developments. What seems noteworthy about it, as an exercise, is how *unimaginative* it is despite its radical nature. Rothbard is essentially describing the functions of the DPW as if they were owned by a joint-stock corporation. As the ground truth in Worcester demonstrates, there are far more things in heaven and earth than municipal governments and corporations. Streets can be owned in tiny segments; street owners may not want to pave, or create a new bureaucracy to zealously recover costs. They may not want to have streets at all.

It is always problematic to simultaneously advocate freedom and expect that, once free, people or institutions will behave in a particular way. The essence of freedom is variety. If that variety runs beyond the expected outcomes, it can give the lie to our original advocacy. Some proponents of free speech, through the ages, have been deeply shocked at the things others have freely said. Much the same is true of economic freedom. Worcester’s private streets may be as ‘dangerous’ to the theoretical models of libertarian municipalism as they are to the liberal city.

## **Conclusion**

Worcester’s extensive network of private streets, now almost a century old, would seem to demonstrate the feasibility of a kind of economic and even governmental arrangement that is rarely discussed. The streets are an indispensable piece of Worcester’s urban infrastructure, used by the community at large, and their maintenance requires significant costs and collective decisions. Yet these roads are decentrally owned, and operated by common-property regimes that are, at most, ultra-minimal private governments. The outcomes on these streets vary widely—they are much more diverse than their public counterparts—but certain common patterns and omissions are striking.

The private streets are typically narrower and more heavily tree-lined than their public peers. All of the streets are maintained as a commons on private property, not as turnpikes or gated networks. Many streets take steps to discourage or reduce outside traffic, but none attempt to recover costs from

outsiders. None of the streets enlists private security, and only a very few have any type of formal street association.

The very existence of these streets, after eight decades, belies the notion that either government (public or private) or formalized cost recovery (taxation or turnpikes) are necessary prerequisites for communities to create and maintain streets. This is a rather strange negation, and puts us into somewhat uncharted waters. Worcester is rich in scholars with the appropriate skill sets to give this problem the attention it deserves; I hope this paper will at least tantalize them.

## Notes

{1} See, for example, Schlager and Ostrom (1992), or Ostrom, Walker, and Gardner (1992)

{2} The anthology *The Voluntary City*, edited by Beito, Gordon, and Tabarrok (c2002) contains a range of arguments and case studies for privatization. This is countered especially by McKenzie (1994). See also Nelson (2006) for a more popular presentation.

{3} From a brochure for Columbus Park, in the collection of Elizabeth Jones.

{4} City of Worcester (1917)

{5} Jacobs (1992)[1961], chapter 18, is still the classic discussion of this phenomena.

{6} See EPA (2000) for street-side impacts on combined sewer overflow. The International Council for Local Environmental Initiatives website ([www.hotcities.org](http://www.hotcities.org)) contains a bibliography on urban heat island research.

{7} Only one of the public street segments in the survey had been modified: it was gated. I believe this segment is mislabeled in the assessor's list, and is either *de jure* or *de facto* a private street. I have not, however, included it with the private streets.

{8} McPherson (2003), etc. The USDA's Center for Urban Forest Research (<http://www.fs.fed.us/psw/programs/cufr>) maintains a large online bibliography of cost-benefit analyses for trees in urban space.

{9} So called for the acre of land deeded to God in his will by Solomon Parsons, a 19<sup>th</sup> century Worcester miller and revivalist. While ultimately seized by the city for back taxes, God's Acre is memorialized in a stone monument Parsons had erected on the site.

{10} E.g. Rothbard, (1973).

{11} Putnam, (2000), chapter 18.

{12} See Timothy Dwight's comments in Robinson (1978) p.14.

{13} E.g. Gunderson (1989)

{14} Meckler (2006)

{15} Boudreaux and Holcombe (1989) By “something like a veil” the authors refer to the Rawlsian concept that the governmental framework is created *a priori*, without a particular set of members in mind.

{16} Rothbard (1973)

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