Regulating Land Use at Sale

Public Improvement from Private Investment

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To plant trees is to give body and life to one's dreams of a better world.
Russell Page

Coordinated private investments create many neighborhood public improvements. This paper proposes regulating land use at sale as a way to coordinate private investments that create public improvements. The proposal is illustrated by a requirement that landowners plant street trees before they sell their properties. Census data and the Los Angeles County Assessor's records show that about half of all properties are sold within ten years, so regulation at sale should affect about half of a city per decade. Regulation at sale offers a pragmatic, low-cost method to improve older neighborhoods and stimulate local economic development.

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Coordinated private investments create many neighborhood public improvements. For example, if all property owners plant street trees in front of their properties, the resulting avenue of street trees will improve their neighborhood.

Private investments in public improvement can raise property values. Nevertheless, many owners fail to participate in voluntary neighborhood improvement efforts even when the cost would be small compared with the resulting rise in each property's value. Owners may agree that street trees would improve their neighborhood, for example, but voluntary tree planting is difficult to organize. Some owners may not participate because the bother or the expense comes at the wrong time; some may not want trees in front of their own properties; others may hold back because they believe too few neighbors will join in. The lack of voluntary participation then stymies action even by those who are eager to improve the neighborhood, because no individual can plant a tree as part of a new avenue of trees unless all the neighbors do so too.

Private underinvestment in public improvement occurs where owners would be willing to invest in improving their neighborhood if they could be sure all their neighbors would cooperate, but the necessary cooperation is difficult to organize. That is, underinvestment results from an inability to coordinate private investments that would yield a net benefit to all owners. By this definition, any neighborhood, rich or poor, can suffer from underinvestment.

Many urban planning regulations coordinate private investments to create a public improvement. Such regulations are typically triggered whenever a property owner applies for a building permit. For example, cities often require owners to plant street trees as a condition for receiving building permits. One typical neighborhood plan in Los Angeles requires: "No building or structure shall be erected, structurally altered or enlarged unless shade-producing street trees are planted and maintained in the adjacent public way at a ratio of one tree for every 30 feet of lot frontage."[1]

If applicants for building permits are required to plant street trees, neighborhoods being improved by private investment will be improved in the public realm as well. But planning requirements triggered by building permits do nothing to improve amenity-poor neighborhoods that are *not* benefiting from private investment. Planning requirements may even initiate a cumulative process of underinvestment and decay: the lack of public amenity deters private investment, and the lack of private investment means that public amenities are not provided.

In new neighborhoods, planning requirements are not the only reason for public amenities. A developer subdividing a large tract of land has an economic incentive to provide amenities, because they increase land values. During this early period in a neighborhood's life, the land market works well to allocate both the benefits and costs of public amenities to one developer who is marketing the whole neighborhood. As a result, developers often provide more amenities—such as landscaping, underground utilities, and recreation facilities—than planners require.

To guarantee a continuing high standard of amenity in new communities, developers often establish land-use covenants. A land-use covenant is a private neighborhood social contract that obliges property owners to undertake certain actions and prohibits them from undertaking others. In principle, land-use covenants require property owners to do as they would have their neighbors do. Covenants commonly prohibit rooftop antennas, for example, so everyone in the community gains an uncluttered view by surrendering the right to sprout his or her own antenna.

One of every eight Americans now lives in a development where covenants create mutual obligations among property owners (Treese 1993). Property owners accept the covenants' restrictions on their own behavior in order to enjoy the benefits of reciprocal restrictions on their neighbors' behavior. Owners have voted to renew neighborhood covenants that would otherwise have expired (Siegan 1972, 240). Owners in such developments clearly value these covenants and are willing to pay more for property subject to them; otherwise, developers would not establish them, and owners would not vote to extend them.

Subdivision planning standards have become stricter over time, and covenants have become more sophisticated in governing land use. Older neighborhoods, developed at lower standards and without covenants, must rely solely on public regulations to govern their land use. Public regulations fail, however, to provide the high standard of neighborhood amenity that many families seem to want. A family can improve their neighborhood by moving to a new one, but that does not help to improve the neighborhood left behind.

A Proposal: Regulate Land Use at Sale

How can urban planning improve the neighborhoods where few building permits are issued? My proposal is to require property owners to make improvements when they sell their properties.

To illustrate the proposal, I will use the example of requiring a landowner to plant a street tree in front of a property before selling it. Street trees represent the generic class of private investments that benefit everyone in a neighborhood, but are privately profitable only if all neighbors make the same investment. In slightly different words, street trees represent investments that (1) create benefits external to an individual property but internal to its neighborhood, and (2) create a net benefit for each owner only if all owners act in concert.

Most people will agree that tree-lined streets improve a neighborhood. Allan Jacobs (1990, 84) said, "If, in an American city, you wanted to make a major positive impact on an existing street and had a limited budget, you might well recommend planting trees as the way to get the most impact for your money." Nevertheless, street trees are either missing, dead, or dying in many neighborhoods.

A 1989 survey of American cities found that 50 percent of the potential planting sites for street trees were vacant; nationwide, there were sixty million street trees and sixty million vacant sites where street trees could be planted (Kielbaso et al. 1989). A 1991 survey found that twenty major cities were planting only 27 percent of the street trees needed merely to maintain their existing tree population (Skiera and Moll 1992). In New York City, the number of street trees declined from 700,000 in the mid-1980s to 500,000 in 1994 (Martin 1994).

How will a requirement to plant street trees at sale work in practice? Some cities already require property to comply with certain code regulations at sale, and this model can be followed. For example, Santa Monica, California, requires property to have water-conserving devices at sale. Before sale, the owner requests an inspection by the city. If the property has the required equipment (such as low-flush toilets and low-flow showerheads), the inspector issues a certificate of compliance with the city's water conservation code. The seller must then file the compliance certificate in the property's escrow documents before title can be transferred to the buyer.[2]

How will a property owner obtain a certificate of

compliance for street trees? Consider the following three cases in which an owner has requested an inspection by the city.

1. The inspector finds that the required street trees already exist. The inspector then issues a compliance certificate.
2. The inspector finds that no street trees are required, for some legitimate reason such as inadequate space or potential interference with overhead wires. The inspector then issues a compliance certificate.
3. The inspector finds that there are no street trees but that it *is* appropriate to plant them. The inspector then issues a street tree planting permit stating the species, size, and location of the trees to be planted. After the trees have been planted, the owner requests a reinspection. If the required trees have been planted according to the city's specifications, the inspector issues a compliance certificate.

The owner then provides the compliance certificate as a legally required step when transferring title to the buyer.

Will planting at sale place a significant cost burden on property owners? A 1987 survey of municipal forestry programs in 1,062 cities found the average cost of planting a street tree was $133, including all material and labor costs.[3] Planting at sale should cost little compared with the value of almost any property.

Planting street trees raises the question of who will maintain them. Like planting street trees, however, maintaining them creates external benefits. With the same reasons given for planting at sale, a city could require street trees to be trimmed at sale. Suppose that when a seller requests a compliance inspection, the inspector finds that a street tree should be trimmed to preserve its health, improve its appearance, or ensure the safety of pedestrians and parked cars. A compliance certificate could be issued after the tree has been trimmed according to the city's specifications.

Will trimming at sale place a significant cost burden on property owners? The 1987 survey of municipal forestry programs found the average cost of trimming a street tree was $90. Trimming at sale, too, should cost little compared with the value of almost any property.[4] Trimming at sale will shift onto property sellers not only the subsequent expense of maintaining the street trees planted at sale, but also much of the expense of maintaining existing street trees.

Requiring street tree planting at sale is an *affirmative* regulation. A city could also impose *restrictive* regulations, such as prohibition of billboards, nonconforming signs, or rooftop antennas on a property after it is sold. Suppose that most properties have rooftop antennas, although most of the residents consider them an eyesore. Suppose also that current owners must remove any rooftop antennas before selling their properties, and that subsequent owners may not erect new antennas. Current owners thus can enjoy the benefit of an antenna, but cannot sell the right to have one. Delaying removal until sale presents less of a "takings" issue than does requiring immediate removal, and the neighborhood will slowly improve as nonconforming properties are sold.[5]

Affirmative and restrictive planning regulations deal with the classic problem that, without regulation, individually rational behavior sometimes leads to an irrational collective outcome. Problems stemming from a divergence between individual and collective interests have been analyzed under such labels as the free-rider problem, the tragedy of the commons, the prisoners' dilemma, and the public-goods problem. Thomas Schelling (1978, 127–129) says,

> A good part of social organization—of what we call society—consists of institutional arrangements to overcome these divergences between perceived individual interest and some larger collective bargain. . . . [S]elective groupings—the union, the club, the neighborhood—can organize incentive systems or regulations to try to help people to do what individually they wouldn't but collectively they may wish to do. . . . What we are dealing with is the frequent divergence between what people are individually motivated to do and what they might like to accomplish together. . . . What we need in these circumstances is an enforceable social contract. I'll cooperate if you and everybody else will. I'm better off if we all cooperate than if we go our separate ways.

Regulation at sale can help planners establish and enforce neighborhood social contracts. Deferring obligations until sale will help gain citizens' *consent* to establishing regulations, and enforcing obligations at sale will help ensure *compliance* with regulations, both of which are necessary for successful urban planning.

Advantages of Regulating Land Use at Sale

Regulation at sale is a way to implement land-use controls, but is not itself a land-use control. If sign controls, for example, are considered to correct for market failure, implementing them in a timed-release fashion as properties are sold will improve neighborhoods and increase property values. Requiring street trees at sale illustrates the following twelve advantages of regulating land use at sale.

1. Owners will not have to pay or do anything until they sell their properties.
2. A property's sale will provide the cash to reimburse the seller's cost of compliance.[6]
3. Street trees will improve the neighborhood and raise property values. Higher property values will benefit not only landowners, but also society, because the value increase reflects increased amenity rather than scarcity.[7]
4. Owners will realize a net gain at sale if the resulting avenues of street trees increase property values by more than owners pay to plant their individual trees. Those who already have street trees will pay nothing, so any increase in their property values will be a net gain.
5. Residents will enjoy the benefits of the trees planted by those who have sold their property. There is no market transaction to reveal these continuing benefits, but they may be far greater than any financial gain at sale.
6. Deferring the planting requirement until sale will accommodate any current owners' objections to having trees in front of their own properties. If an avenue of street trees raises property values by more than it costs to plant a single street tree at sale, regulation at sale can achieve the elusive goal of Pareto-optimality: everyone gains because of the policy.
7. Requiring street trees at sale will spur some owners to plant early. They may plant early because (a) they want to enjoy the tree they will have to plant eventually; (b) they expect planting early will be cheaper; (c) they anticipate a mature tree will add more to the value of their property; (d) they realize the best time to plant a tree is usually twenty years ago; or (e) they simply want to contribute their fair share to a plan they want to see accomplished.
8. Owners will take better care of street trees because they will eventually have to replace any that die. Many street trees die of neglect; as one respondent to a survey of urban forestry programs said, "Once the trees are planted, they are basically on their own" (Petit and Skiera 1994, 18). Holding the owner responsible for eventually replacing any dead trees in front of a property can also mobilize community sentiment against vandalizing trees.
9. Planting at sale will not cost the government anything. Cities can pay for inspecting property at sale by charging a cost-recovery fee for issuing the required compliance certificate.
10. Planting at sale responds to the political preference for shifting costs into the future. Residents who remain in the neighborhood longer will pay later, and see more of the plan realized before they leave, so regulation at sale will benefit them most.
11. The poorest neighborhoods will see the greatest gain. Donald Appleyard (1978, 17) observed, "In the richest suburbs the trees obscure the houses, in the middle-income suburbs they balance each other off, and in the inner-city neighborhoods trees are a rarity." Regulation at sale will give poor neighborhoods an amenity that rich neighborhoods already have, and will reduce a visible inequality among neighborhoods.
12. Regulation at sale will shift spending from private consumption to public investment. This shift in spending will stimulate local economic development, because more of public investment than of private consumption is produced locally, rather than imported. A model of the Southern California economy shows that regulation at sale will increase total local wages by $39 for every $100 of final demand shifted from private consumption to public investment. (See Appendix.)

Figure 1 compares two systems of implementing land-use controls: the proposed system of regulation when land *ownership* changes, and the existing system of regulation when land *use* changes. The standard operating procedures for regulation when ownership changes will be either similar to or simpler than the existing procedures for regulation when use changes, so regulation at sale is an incremental reform. Regulation when ownership changes cannot *replace* regulation when use changes, but *adding* regulation when ownership changes will improve older neighborhoods.

The Speed of Implementation

How long will it take for regulation at sale to implement an urban plan? To estimate the implementation rate for one city, the records of all property transactions were obtained for the 25,661 assessed properties in Burbank, California, which has 94,000 residents in seventeen square miles. The Los Angeles County Assessor's computer tapes include the dates of the last three recorded sales for each property, and I have used this information to estimate how many properties were sold at least once during any period.

Table 1 shows how many properties were sold at least once between the beginning of 1985 and the end of 1991.[8] The entries in the columns for each year show the number (and percent) of properties sold in that year and not sold again through 1991. (Repeat sales of the same property are not counted twice.) During this seven-year period, 56 percent of all properties in Burbank were sold at least once. Looking backward, one can see that if the city had begun to regulate land

TABLE 1. Properties sold in Burbank, California, 1985–1991

Zoning Category		Year of Last Sale of Property							Total Sales
		1985	1986	1987	1988	1989	1990	1991	1985–1991
Single-family (16,434 properties)	Number Sold	686	915	1,054	1,373	1,470	1,643	1,719	8,860
	Percent Sold	4.2%	5.6%	6.4%	8.4%	8.9%	10.0%	10.5%	54%
Multi-family (6,037 properties)	Number Sold	287	386	403	661	755	746	719	3,957
	Percent Sold	4.8%	6.4%	6.7%	10.9%	12.5%	12.4%	11.9%	66%
Commercial (1,845 properties)	Number Sold	97	117	115	171	207	187	151	1,045
	Percent Sold	5.3%	6.3%	6.2%	9.3%	11.2%	10.1%	8.2%	57%
Industrial (1,115 properties)	Number Sold	56	53	66	108	70	100	83	536
	Percent Sold	5.0%	4.8%	5.9%	9.7%	6.3%	9.0%	7.4%	48%
Other (230 properties)	Number Sold	12	15	10	13	20	14	5	89
	Percent Sold	5.2%	6.5%	4.3%	5.7%	8.7%	6.1%	2.2%	39%
All Properties (25,661 properties)	Number Sold	1,138	1,486	1,648	2,326	2,522	2,690	2,677	14,487
	Percent Sold	4.4%	5.8%	6.4%	9.1%	9.8%	10.5%	10.4%	56%

Source: Computed from data provided by the Los Angeles County Assessor.
Note: The entries for the number of sales in each year show the number of properties that were sold in that year and not sold again. Repeat sales of the same property are not counted; for example, if a property was sold in both 1987 and 1990, the sale would be entered for 1990, and not for 1987. Thus the last line shows that 10.4 percent of all properties in Burbank were sold in 1991; 10.5 percent of all properties were sold in 1990 and not sold again in 1991; 9.8 percent of all properties were sold in 1989 and not sold again in either 1990 or 1991; finally, 4.4 percent of all properties were sold in 1985 and not sold again through the end of 1991. Therefore, summing horizontally, 56 percent of all properties were sold at least once between the beginning of 1985 and the end of 1991.

Regulation when Ownership Changes	Regulation when Use Changes
The compliance cost is imposed when the owner leaves the community.	The compliance cost is imposed when the owner invests in the community.
The compliance cost is paid when the owner receives money from selling the property.	The compliance cost is paid when the owner spends money to improve the property.
A property is inspected for compliance each time it is sold.	A property is inspected for compliance each time a building permit is requested.
Inspections provide information on conditions in areas where properties are sold.	Inspections provide information on conditions in areas where building permits are requested.
Owners want to maintain compliance if they expect to sell their properties.	Owners want to maintain compliance if they expect to request building permits.
Compliance is ensured for all properties that are sold.	Compliance is ensured for all properties that are improved with a building permit.
Implementation is gradual and continual in all areas.	Implementation is immediate in new areas and sporadic elsewhere.
Planning improves all areas, and especially older areas.	Planning improves areas where private improvements are already occurring.

FIGURE 1. Regulation when land ownership changes versus when land use changes

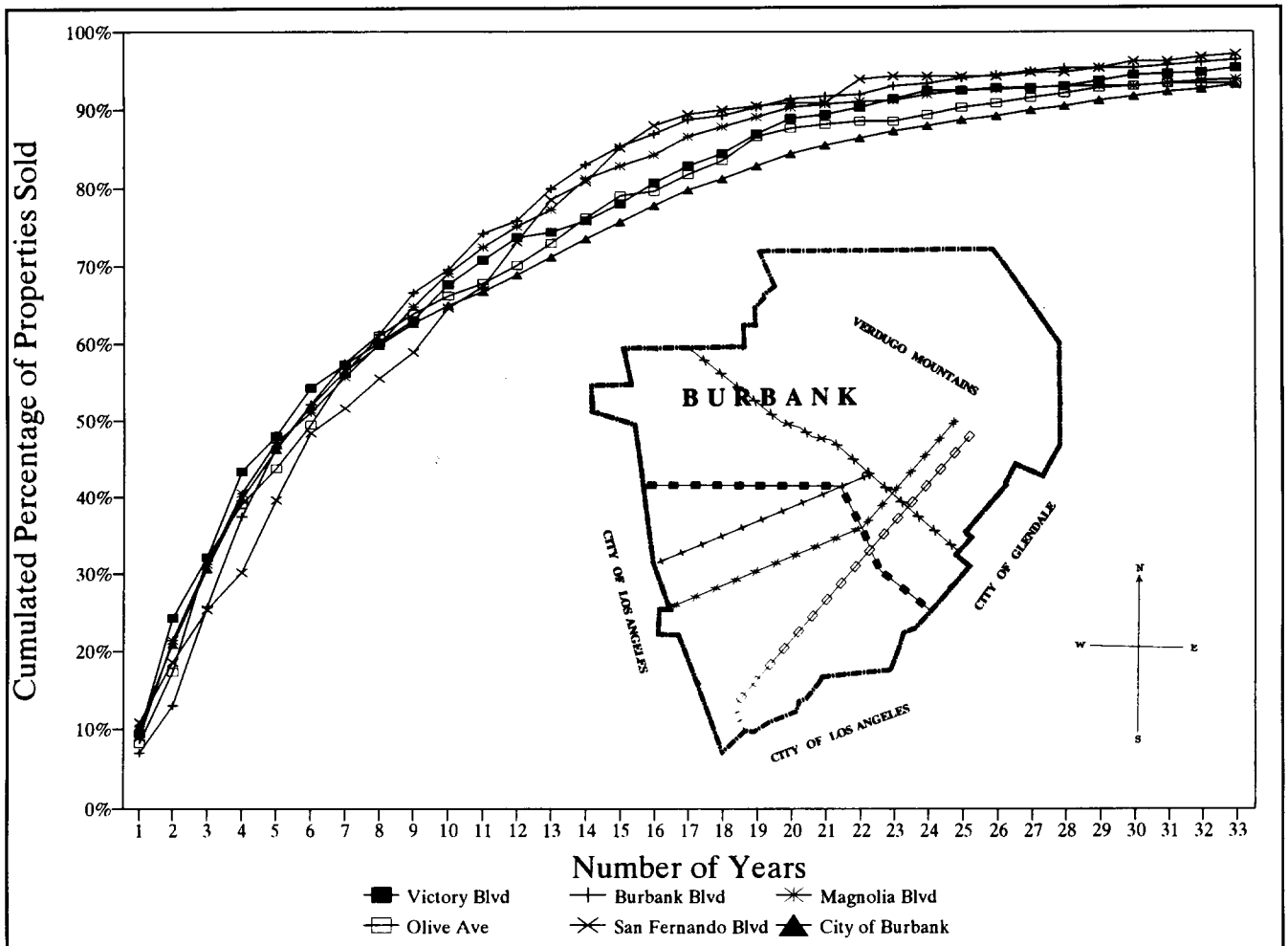
use at sale in 1985, over half of all properties would have been affected by 1991. Among land uses, sales in the seven years ranged from 48 percent of industrial properties to 66 percent of multi-family properties.

Will regulation at sale produce uneven results because sales rates differ among different areas of the city? To answer this question, the sales of all properties on each of the five major commercial streets in Burbank, from the beginning of 1959 through the end of 1991, were examined. Figure 2 shows the results. The vertical axis shows, in 1991, the share of properties on each of the five streets that were sold at least once during the previous number of years shown on the horizontal axis. The sales of all 25,661 properties in the city were also examined for the same period, and the citywide sales rate is shown on the same graph. The sales rates for properties on these five major streets were similar to one another, and to the sales rate for the whole city.

Figure 2 shows that 75 percent of all properties in the city were sold within the previous 15 years, and 90 percent were sold within the previous 27 years. Although these data may suggest that regulation at sale will be slow to produce results, city planning is often slow to produce results, and some planning produces no results at all. Compared to many planning efforts, regulation at sale would improve a neighborhood swiftly.

How do these sales rates in Burbank compare with sales rates elsewhere in the United States? Data from the 1990 Census, reported in the Appendix, suggest that about half of all owner-occupied housing units in the United States were sold at least once within the previous ten years. The Burbank and nationwide data together suggest that about half of all housing units are sold within seven to ten years.

These findings suggest what would happen if all cities required street trees at sale. As mentioned ear-



Note: The Y axis shows, as of 1991, the percentage of properties that were sold at least once during the previous number of years shown on the X axis.

FIGURE 2. The cumulated percentage of properties sold, 1959–1991, in Burbank, California

lier, Kielbaso et al. (1989) estimated there are about sixty million vacant planting spaces for street trees in American cities. If all cities required street trees at sale, about thirty million additional street trees should be planted within the following decade.

The swift turnover of property ownership suggests that planting at sale would implement a street-tree plan surprisingly fast. Paradoxically, this swift turnover also suggests why there are so few street trees where planners do not require them. Most people do not own their property long enough to experience the benefits of planting street trees that will not mature for many years. Michael Pollan (1991, 181) said, "Tree planting is always a utopian enterprise . . . a wager on a future the planter doesn't necessarily expect to witness." Who *will* witness a fine avenue of mature street trees? Probably not the planters, or even their children, but future residents entirely unknown to the planters. If most owners have such short tenures, if the benefits of planting are so long delayed, if so many of the benefits are public rather than private, and if voluntary action is so hard to organize, why should anyone plant a street tree unless urban planners require it?

Practical Problems of Regulating Land Use at Sale

Regulation at sale presents several practical problems: (1) how to define a sale, (2) how to decide what to require at sale, (3) what exceptions to make, (4) how to enforce the requirement, and (5) how to deal with neighborhood improvements that must be accomplished for all properties at the same time, rather than one at a time.

1. Not every ownership change is a sale. Property ownership can also change by inheritance, gift, exchange, foreclosure, divorce settlement, or tax default. Some transfers do not produce cash flows, and so might be exempted from the requirement to make improvements at sale. Santa Monica exempts property transfers between spouses, between parents and children, or due to foreclosure, from its requirement to retrofit water-conserving devices when property is sold.

   Condominium ownership creates an ambiguity. Would the unit owner or the condominium association be liable for compliance when a condominium unit is sold? One solution is to exempt individual units from regulation at sale, but to require compliance by an entire condominium association after some grace period (such as seven to ten years after a regulation is adopted).
2. How can a city decide what owners must do when they sell their property? At-sale regulations need not be uniform throughout a city, and might best be introduced in neighborhood-specific plans that are usually devised with extensive citizen participation. Defining the neighborhood is a problem, but this is a problem for all neighborhood planning, not only for regulation at sale, and most cities have already established neighborhood boundaries for their specific plans. The goal is to devise at-sale regulations that most neighborhood residents support and are willing to obey if they know that everyone else will.

   If planting at sale proves to be popular, other improvements could then be required at sale. For example, the adjacent sidewalk could be repaired at sale. Billboards could be removed at sale. Over time, citizens should be able to select many possible at-sale regulations to improve their neighborhood.
3. Implementing a regulation at sale may be inappropriate in some cases. If a property is sold for redevelopment, for example, it does not make sense to plant trees that would be uprooted during the subsequent construction. In such cases, a city can either waive the regulation or defer the obligation to comply with the regulation until a date after the sale.
4. An issue with any regulation is how to enforce it. Many existing regulations are poorly enforced, and new regulations might further overload the system. But an advantage of regulation at sale is that the city can *certify* compliance after inspection, and the private sector can then *enforce* compliance through the real estate transaction process. Dividing responsibilities between the public sector (to inspect property and certify compliance) and the private sector (to file the necessary compliance certificate before title can be transferred) should guarantee that properties comply when they are sold. The conspicuous nature of noncompliance at sale (missing trees, remaining illegal signs, or unrepaired sidewalks) will provide an incentive to enforce regulations at sale.

   Certifying compliance at sale can also be done privately, as in Berkeley, California, which requires owners to retrofit their property with insulation and water-conserving devices before sale. The city contracts with a nonprofit agency (the Veteran's Assistance Center) to inspect property and issue the compliance certificates.

   How can a city prevent the sale of property without the required compliance certificate? Berkeley's retrofit ordinance states, "All residential structures . . . are sold with an implied warranty of

compliance" and "the buyer may bring the residential structure or unit into compliance . . . and may recover costs" from the seller and/or the seller's agent in the sale of a noncomplying residential structure.[9] Violating Santa Monica's retrofit-upon-sale ordinance is a misdemeanor.[10] Another way to encourage compliance at sale would be to require a compliance certificate to be issued before gas, electricity, and water service could be established in the buyer's name; a precedent for this policy is the requirement by some cities that a certificate of occupancy for a new building must be issued before utility services can be established in the owner's name.

5. Regulation at sale is a pointillist approach to public improvement. Some neighborhood improvements must be accomplished for all properties at the same time, however, rather than one at a time. For example, removing overhead utility wires and putting them underground must be done for a whole neighborhood at the same time, rather than for individual properties as they are sold. Special assessments are an appropriate way to finance these all-at-once projects, and deferred special assessments have the advantage of allowing owners to delay paying the cost until sale.[11]

Is It Legal to Regulate Land Use at Sale?

Some California cities already regulate land use at sale. Berkeley requires insulation and water-conserving devices at sale. Davis requires smoke alarms, deadbolts for exterior doors, and insulation at sale.[12] Los Angeles requires water-conserving devices, safety glazing for exterior doors, and smoke alarms at sale.[13] Santa Monica requires water-conserving devices at sale. The State of California requires anchoring of water heaters (to resist earthquake motion) at sale.[14]

Some cities enforce their building codes when properties are sold. Davis requires inspection of residential property before sale to ensure compliance with the city's building codes; the seller must provide the code inspection report to the buyer.[15] If no violations are found, the owner is issued a resale certificate that must be filed with the city within five days after sale. If violations *are* found, either the seller must remedy them and have the property reinspected before sale, or else the buyer must agree to remedy the violations after purchase. Sales are exempt from the requirement if a resale certificate has been issued for the property within the previous five years, or if the building's certificate of occupancy was issued within the previous five years.

These retrofit requirements show that cities can and do regulate land use at sale. But deadbolts, insulation, safety glazing, smoke alarms, and water-conserving devices do not improve neighborhoods. The benefits of these investments accrue either to an individual property (by making it safer or reducing its utility bills) or to society (by reducing the demand for scarce resources). That is, the benefits of these investments are either internal to an individual property, or external to its neighborhood; requiring these investments at sale will not improve neighborhoods. By contrast, some investments (like street trees) have benefits that are external to an individual property but internal to its neighborhood; requiring *these* investments at sale will improve neighborhoods.

The only regulation at sale I have found that improves neighborhoods is an ordinance in Piedmont, a suburb of San Francisco. Piedmont requires an owner to repair the adjacent sidewalk before a property is sold. Sidewalks serve a whole neighborhood, not just an individual property, so repairing sidewalks at sale will, over time, improve the neighborhood's public infrastructure. Before sale, the owner must request an inspection by the city. If the sidewalk and/or driveway is substandard, the owner must either repair or replace it, or pay the city to have the work done. In either case, the owner must apply for a building permit for the repair work; the city's final inspection and approval of the work on the building permit serve as evidence of compliance with the at-sale requirement.[16]

Does requiring a property owner to repair adjacent public property (the sidewalk) at sale constitute an exaction? Altshuler and Gómez-Ibáñez (1993, vii) defined exactions as "mandated expenditures by private land developers, required as a price for their obtaining regulatory permits, in support of infrastructure and other public services." Regulation at sale resembles an exaction in some respects, but there are important differences as well; in particular, regulations at sale affect all landowners, but exactions affect only developers.

Requiring sidewalk repair at sale is much less like an exaction than it is like a special assessment. A special assessment is a levy to pay for a public improvement that confers special benefits on particular properties, with the cost apportioned among these properties according to the special benefits they receive. Regulation at sale does just what a special assessment does, but slowly. In comparison with a special assessment, however, regulation at sale has several advantages.

First, regulation at sale does not require owners to pay or do anything until they sell their properties. Second, regulation at sale automatically apportions its

costs among the benefited properties as they are sold. Third, regulation at sale does not require the city to issue bonds to finance the public improvement. Fourth, regulation at sale does not require the city to place liens on the benefited property. Fifth, property owners make the required public improvements. Finally, regulation at sale can implement mutually beneficial land-use restrictions, such as sign controls, that do not involve public finance.

By imposing special obligations on properties that are sold, does regulation at sale treat similar properties differently, and deny equal protection of the law either to those who sell their property, or to the buyers? Other planning and taxation policies treat similar properties differently, and yet are legal. For example, California assesses real property at its market value in the year it is sold, with subsequent increases in assessed value capped at 2 percent a year. Assessment at sale leads to different taxes for properties that are identical except for the date of their last sale.[17] In 1992, the United States Supreme Court upheld California's system of assessment at sale.[18]

Grandfather clauses in zoning ordinances also treat similar properties differently; they permit existing nonconforming land uses to continue, but prohibit any new such uses. Regulating land use at sale is like imposing a planning regulation and grandfathering all properties until their next sale.

Regulation at sale is a new way to finance public improvements without spending public revenue, but is not an entirely new intervention in the land market. Rather, regulation at sale is a hybrid of several existing interventions: retrofit-at-sale programs, special assessments, grandfather clauses, zoning codes, and building codes. Each of these separately is legal, so a new combination of them should also be legal. If a city has home rule authority, and there is no conflict with state legislation, it seems reasonable to argue that a city has all the authority it needs to regulate land use at sale.[19]

Objections to Regulating Land Use at Sale

Two predictable objections to regulation at sale are that (1) it will unnecessarily interfere in the real estate market, and (2) it will divert planners from more serious problems, and focus their attention on cosmetic solutions.

Will Regulating Land Use at Sale Unnecessarily Interfere in the Real Estate Market?

Regulation at sale will implement land-use controls, but is not itself a land-use control. If a land-use control corrects for market failure, implementing it at sale will make the land market more efficient and solve neighborhood problems. Many public land-use controls evolved from practices invented by real estate developers to correct for market failures. For example, zoning ordinances evolved from private covenants that impose mutually beneficial obligations on all property in a neighborhood. Developers had used covenants for decades before Los Angeles introduced the country's first citywide zoning ordinance in 1908 (Weiss 1987, 3–4, 81).

The Precedent of Planned Community Covenants. Developers of planned communities must deal with many spatial effects that are external to an individual property but internal to its neighborhood. The communities they create therefore represent a market test that reveals how much land-use regulation buyers prefer when the private market can supply it. Developers almost always establish elaborate land-use covenants in planned communities. These ubiquitous covenants imply that, when the market can deal effectively with neighborhood planning concerns, most buyers want more control over the use of private property and public spaces than public planning typically provides.[20] For example, covenants in planned communities commonly require a specific street tree in front of each property. These covenants imply that most buyers prefer the *obligation* to plant a specified street tree to the *option* to plant anything or nothing, so long as the obligation applies to everyone. If buyers did not value these covenants, why would developers establish them? Clearly, many people appreciate—and are willing to pay for—planning regulations that promote their neighborhood's collective welfare.[21]

Some community associations inspect properties at sale to enforce their covenants. After inspection, the association requires either the seller or the buyer to correct any covenant violations that are found. If the seller does not correct them, violations are disclosed to the buyer and to the lender; the lender then typically requires sufficient funds to be deposited in escrow to pay for correcting the violations after the sale is completed.[22] Enforcing private covenants at sale resembles enforcing public regulations at sale, and exemplifies what Marc Weiss (1987, 3) called "private innovation preceding public action."

Regulation at Sale as an Improvement over Covenants. Regulation at sale can bring to older communities some of the mutually beneficial obligations among property owners that the market brings to new communities through land-use covenants. At the same time, however, regulation at sale responds to some of the objections that have been lodged against private covenants.

First, a developer imposes covenants, and buyers must accept them as a complete package. "All buyers are mutually bound by the same restrictions from the moment of purchase, meaning there was never a time when the buyers were in a 'state of nature,' because the developer had that to himself" (McKenzie 1994, 148). This criticism would not apply to regulations at sale adopted as ordinances by elected local governments.

Second, homeowners' associations are sometimes undemocratic, and they are held to lower standards of due process than are municipal governments. "Only property owners are entitled to vote in [homeowner association] elections, so renters are disenfranchised.... Additionally, only one vote per unit may be cast, rather than one vote per adult occupant" (McKenzie 1994, 128). Again, regulations at sale chosen by democratic means would avoid this criticism.

Third, covenants are difficult to change because they typically require a super-majority of all eligible voters (owners) to ratify changes. Regulations at sale adopted by local governments would give communities more flexibility in adapting to new conditions.

Fourth, associations governed by covenants represent a privatization of public life, and encourage "secession by the successful." By contrast, a local government is accountable to all citizens affected by regulation at sale, not simply to owners and residents of a single neighborhood.

To safeguard community participation in choosing regulations at sale, a majority of residents could have the power to block a proposed regulation by filing a written protest against it, just as many states allow a majority protest to block a special assessment. If planners have proposed appropriate regulations at sale, why would most residents protest? If planners have proposed inappropriate regulations, why would most residents *not* protest?

Residents of older neighborhoods would probably not want to adopt all the types of regulations imposed by private community associations. The boundary between internal and external benefits, or between private and public goods, is often ambiguous. Deciding whether a particular action will benefit a single property or a whole neighborhood may be difficult. Nevertheless, at-sale regulations that respect residents' preferences, deal with real externalities, and coordinate private actions to create public improvements, could solve some serious problems plaguing older neighborhoods.

Benign Effects on the Real Estate Market. The required inspections at sale would add to the cost of transacting property, but cities that already regulate land use at sale charge minimal fees for the inspections ($192 in Davis, $45 in Berkeley, $15 in Piedmont, and free in Santa Monica).[23] In any case, no one can argue that this cost will cause businesses to move out of the city, because moving out triggers the cost.

Rather than unnecessarily interfering in the real estate market, regulation at sale would encourage real estate investment. First, development would be exempt from regulation at sale, because it is already inspected for compliance with all building and zoning codes before receiving its certificate of occupancy. (Davis exempts newly constructed property from resale inspection for five years after it receives a certificate of occupancy.) Second, improving the amenity of older neighborhoods would encourage owners to invest more in maintaining their property, and developers to invest more in new construction. Third, pay-on-exit financing for public amenities would allow cities to reduce the pay-on-entry exactions they now charge developers to finance these same amenities. Regulation at sale should therefore attract new investment to older neighborhoods both by increasing their amenity and by reducing the burden placed on developers there.

Will Regulation at Sale Focus Planning on Cosmetic Solutions?

This question implies that cosmetics are unimportant, but the keen attention that all societies devote to personal cosmetics suggests that appearances count. Appearances do count, yet large parts of most cities are ugly.

Substantial Benefits from Street Trees. I have used street trees to represent private investments that benefit a neighborhood, but that are privately profitable only if all owners make the same investment. Street trees provide substantial benefits to the environment, to urban design, and to the economy; they are not merely cosmetic.

Trees benefit the environment by removing ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide from the air.[24] They also clean the air by filtering airborne particulates, which settle on leaves and are then washed to the ground by rain.[25] By reducing the ambient temperature on hot days, trees reduce the air pollution caused by generating electricity for air conditioning. They reduce erosion and water run-off into storm sewers by slowing rainfall's velocity and increasing its absorption into the ground. By sequestering carbon, trees reduce the threat of global climate change.

As urban design, trees are "gifts to the street." Tree-lined streets create an image of order, and are a unifying element that reinforces a neighborhood's

identity. Street trees benefit pedestrians by visually and psychologically separating them from traffic, and by forming a canopy over the sidewalk. Street trees hide overhead wires, reduce the monotony of concrete and asphalt, and attenuate noise. Deciduous trees provide summer shade without blocking winter sun.

Trees also increase property values. Morales, Micha, and Weber (1983) found in a suburb of Rochester, New York that trees increased the value of single-family houses by 12 to 19 percent. Anderson and Cordell (1985) found in Athens, Georgia that trees increased the value of single-family houses by 3 to 5 percent. Martin, Maggio, and Appel (1989) found that trees contributed between 13 and 19 percent of the value of residential property in Austin, Texas. A survey of 1,350 real estate agents in ten states reported that "62 percent of the Realtors felt that the presence of healthy shade trees strongly impacts a potential buyer's impression of a block or neighborhood" (Arbor National Mortgage Inc. 1994). Although these studies examined the effect of all trees on the property, not only of street trees in front of the property, they all conclude that trees increase property values.

A survey of three low-income neighborhoods in Los Angeles asked residents what they would like to see more of, and the most frequent response was trees. (See table 2.) Their preference was not eccentric. In the 1970s the United Nations sponsored surveys in Argentina, Australia, Mexico, and Poland to learn how children growing up in cities view their environment. Summarizing the findings, Kevin Lynch (1977, 56) said, "The hunger for trees is outspoken and seemingly universal. Landscaping should be as essential a part of the basic infrastructure of a settlement as electricity, water, sewers, and paving. It is not window dressing." Clare Cooper (1975, 139) studied residents' satisfaction with life in a low-income housing development in Richmond, California, and found "residents felt it was important to see trees and grass in the neighborhood where they lived. . . . it would be depressing and seem rundown and monotonous without them." Allan Jacobs (1993, 293) reports that in a survey asking pedestrians in San Francisco to name the most desirable physical characteristics to have on streets, the most frequent choice was trees. Street trees are also less expensive than most other public investments, so requiring them at sale should be an economical way to give people what they say they want.

The many streets, neighborhoods, and cities named after trees, woods, and forests are semantic evidence of the human affinity for trees. Los Angeles has neighborhoods named Brentwood, Hollywood, Palms, Sherman Oaks, Westwood, Woodland Hills, and—for the afterlife—Forest Lawn. Many family names are derived from trees, and some societies believe their ancestors *were* trees.

Regulation at Sale as a Useful Planning Tool. Regulating land use at sale would improve communities without violating the rights of the regulated or diverting planners' attention from weightier issues. Regulation at sale could also foster a new style of urban planning. Planners now require public improvements when land *use* changes, so they spend much of their time working with developers. Requiring public improvements when land *ownership* changes would refocus planners' attention on the future of older neighborhoods. Planners would more often work in partnership with a neighborhood, presenting to residents alternative visions of what their neighborhood could become, and helping them choose a design that will appeal not only when completed but also while being implemented. For example, UCLA's Urban Simulation Laboratory allows planners to show residents how street trees will change their neighborhood. (See illustrations 1 and 2.) Planners can show how the neighborhood will look

TABLE 2. Amenities desired by residents in three Los Angeles neighborhoods

	Crenshaw	Sunset	Vermont	Average
Trees	92%	94%	98%	95%
Bus stop shelters	70	94	100	88
Parks/open space	78	97	74	83
Restaurants	81	81	83	82
Benches	64	83	94	80
Retail shops	67	80	86	78
Community services	61	70	91	74
Transit lines	47	75	71	64

Source: Loukaitou-Sideris (1993). The survey was conducted in three neighborhoods adjacent to the commercial corridors of Crenshaw Boulevard, Sunset Boulevard, and Vermont Avenue. Percentages refer to the positive responses among 244 residents to the question: "Would you like to see more of the following on the corridor?"

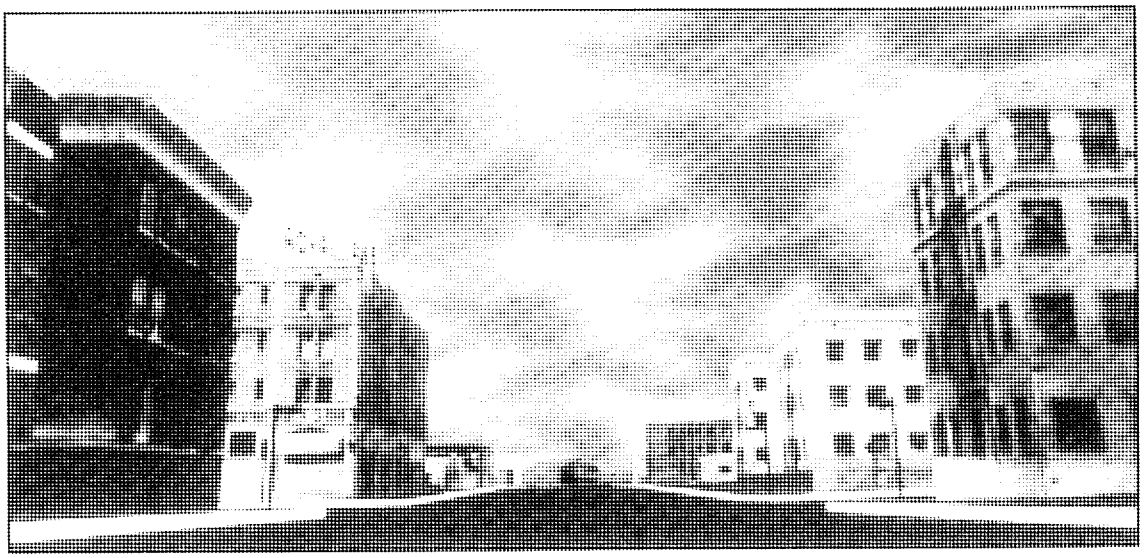


ILLUSTRATION 1. Existing view of 11th Street at Lake Street in the Pico-Union District of Los Angeles.

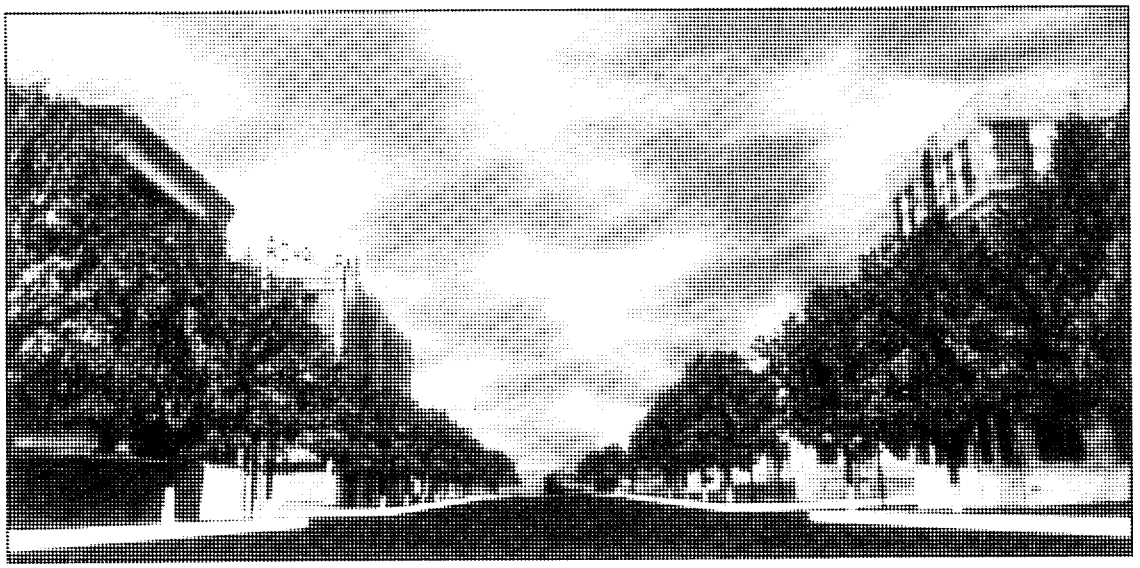


ILLUSTRATION 2. View of 11th Street at Lake Street with *Pistacia chinensis* trees added in computer simulation.

with different trees, and can also show, year by year, how the neighborhood will change as these trees are planted at sale and grow to maturity.

Even without creating new regulations, enforcing existing regulations (zoning codes, building codes, sign controls) at sale could make urban planning more effective. Violations of existing planning regulations are a serious problem in many cities, and enforcing compliance when property is sold would help to solve it. Violations would be corrected at sale, and the expectation of having to correct violations at sale would deter violations before sale. If regulations are justified, enforcing them at sale is a useful tool.

Distributional Effects of Regulating Land Use at Sale

Property owners can profit by investing in public amenities, and regulation at sale relies more on self-interest than on altruism to secure support. Private profit is an incentive to accept regulation of land use at sale, but the purpose of regulation at sale is public

improvement. James Rouse (1966, 106) said, "The surest way to make the American city what it ought to be is to demonstrate that it's enormously profitable to do it a better way."

How can regulation at sale be enormously profitable? The increase in property value caused by each owner's individual investment is magnified when all other owners in the neighborhood make similar investments. The appropriate comparison is not between how much a street tree costs and how much that tree will increase the owner's property value. The appropriate comparison is between how much a street tree costs and how much an *avenue* of street trees will increase the owner's property value. Frank Scott (1870, 60) said of urban landscaping, "The beauty obtained . . . is of that excellent quality which enriches all who take part in the exchange, and makes no man poorer."

Regulation at sale would benefit both residents and owners. Residents will enjoy street trees, for example, and owners will enjoy higher property values. The division of benefits between residents and owners is not controversial for owner-occupiers, but could be for tenants.

Many tenants live in low-rent neighborhoods only because the rent is low, and increasing amenity might raise their rents. Improving all neighborhoods, however, would not necessarily raise all rents. If street trees were required at sale throughout a city, would all rents rise in response to the resulting improvements? The market premium for neighborhoods with street trees may gradually disappear when everyone begins to take tree-lined streets for granted. Increasing the supply of any amenity should at least reduce the market premium attached to it. If a housing shortage is partly a shortage of neighborhoods people want to live in, and developers want to invest in, improving older neighborhoods could increase the supply of housing, and reduce rents overall.[26]

Will renters really object to regulating land use at sale? To help answer this question, compare these two methods of financing a neighborhood improvement: (1) government spending, or (2) regulation at sale. In the first case, all the city's taxpayers (including renters) pay. In the second case, the benefited owners pay when they sell their property and realize the benefit of the improvement. Which is fairer? My own view is that landowners should pay for site-specific public services that increase the market value of their particular properties, while public revenue should pay for public services that benefit everyone.

The neighborhood is the appropriate scale at which to make many public decisions. If regulation at sale gave them more power to make planning decisions, neighborhoods would begin to look more consistent internally (as with uniform street trees) and yet more different from one another (as different neighborhoods make different choices). Neighborhoods would also become more self-sufficient if benefited owners paid for public improvements when they sold their properties. Regulating land use at sale would not only allow citizens to choose how to improve their own neighborhoods, but would also reduce their demands on general public revenue. Thus, regulation at sale should allow cities to spend more of their general revenue on such public services as education, safety, and even urban planning.

Following Charles Tiebout (1956), economists have analyzed how families "purchase" their neighborhood amenities by voting with their feet. If families move to neighborhoods they prefer rather than trying to improve their original neighborhoods, the resulting Tiebout-sorting of the population by migration leads to homogeneous communities. If regulation at sale improves older neighborhoods so that families can enjoy increasing public amenity by staying where they are, perhaps fewer families whose incomes are rising will want to leave. Many families might be eager to improve their established neighborhoods rather than move to a development where the amenities are skillfully designed, but everything is uniform and unmistakably new. By slowing the emigration of prosperous families, regulation at sale could bring about more economic integration in older neighborhoods.

If families with rising incomes do move to higher-income neighborhoods, regulation at sale would improve the poorer neighborhoods at the expense of those who move to richer ones. For the lower-income families left behind, pay-on-exit public finance pleasantly resembles Monty Python's scheme to solve Britain's economic problems by taxing foreigners living abroad.

Conclusion: Retrofitting America

Street trees are a low-cost, high-value neighborhood amenity almost everyone wants. It takes little more than planning and patience to create handsome avenues of mature street trees, yet half of America's street trees are missing, dead, or dying. Why?

The problem is a lack of coordination. Many landowners would be willing to plant a single street tree if they knew all their neighbors would do so too, but organizing the necessary coordination is difficult. I have argued that regulating land use at sale is a practical way to achieve this coordination, not only for planting street trees but also for many other private actions that serve a public purpose.

Street trees are important, but the purpose of reg-

ulating land use at sale, in general, is to improve neighborhoods, not simply to plant trees. Planting at sale (the example) illustrates how regulation at sale (the proposal) could coordinate a variety of private investments to create public improvements. If planting at sale does in practice improve neighborhoods and raise property values, and if citizens like the results, cities could require owners to take other actions to benefit their neighborhoods when they sell property there.

Sidewalks could be repaired at sale. Billboards and graffiti could be removed at sale. Historic preservation regulations could be implemented at sale. Sign regulations, building codes, and conditional use permits could be enforced at sale. Facades could be cleaned at sale. Seismically unsafe buildings could be retrofitted at sale. After some practice, urban planners should be able to identify many ways to improve the future of old neighborhoods by regulating land use at sale.

Regulation at sale is a pragmatic way to coordinate private investments that create public improvements. Regulation at sale will multiply the benefits of each owner's individual investment, and delay the cost of compliance until a property is sold. In this way, urban planning can lead property owners to promote their private interests by requiring them to promote the public interest—when they leave.

APPENDIX: Data on Property Sales; Estimates of Jobs Created by Regulation at Sale

Property Sales

Half of all properties in Burbank were sold within seven years. How fast does property ownership turn over elsewhere in the United States? There are no national studies, but the 1990 Census provides data on when owner-occupiers moved into their current housing units. If we assume owner-occupiers bought their housing when they moved in, and have not sold it since (because they are still living there), we can estimate how fast all owner-occupied housing units are sold. Table A1 shows the estimated distribution of sales of owner-occupied housing units, over five cumulative periods previous to 1990, for Burbank, four other California localities, the state as a whole, and the United States. For Burbank, the share of owner-occupied housing units that were sold between each year shown and March, 1990 (the Census year) is calculated both from the Census data and from the Los Angeles County Assessor's data. The Census data show that owner-occupied properties turned over faster in the City of Los Angeles, the County of Los Angeles, and the State of California than in Burbank. The property turnover rate for the United States as a whole is similar to that for Los Angeles, and faster than that for Burbank.

The last two columns of Census data show sales rates for Beverly Hills (1990 per capita income of $55,463 a year), and Compton (1990 per capita income of $7,842 a year). These two cities epitomize the contrasts between rich and poor communities in Southern California, yet their sales rates are similar.[27] If income does not affect a city's sales rate, it should not affect the speed of improving neighborhoods by regulation at sale.

The last column in table A1 shows the share of single-family properties in Burbank that were sold at least once between each year shown and March, 1990, as calculated from the Assessor's data.[28] The Assessor's data show that 41 percent of single-family properties in Burbank were sold between 1985 and March, 1990, but the Census data show that only 25 percent of

TABLE A1. Percentages of housing units sold since selected years previous to 1990: five California localities, California, and the U.S.

	Census Data							L.A. County Assessor's Data
Year	City of Burbank	City of Los Angeles	County of Los Angeles	State of California	United States	City of Beverly Hills	City of Compton	City of Burbank
1989	6%	10%	10%	12%	9%	6%	10%	12%
1985	25	34	36	40	34	26	28	41
1980	39	47	49	55	49	38	37	55
1970	62	71	73	79	74	70	60	78
1960	76	86	88	91	87	86	81	86

Sources: Los Angeles County Assessor and the 1990 U.S. Census of Population of Housing (Summary tape 3A, Bureau of the Census, Data Users Services Division, 1993).
Note: The percentages in each column are the shares of housing units that were sold between January 1 of the year shown and March, 1990. The Census data refer to all owner-occupied housing units. The Los Angeles County Assessor's data refer to all single-family housing units.

owner-occupiers in Burbank moved into their housing units during the same period.[29] The Assessor's data are expected to show a faster turnover rate because they report all sales, while the Census data refer only to household relocations. If a couple divorces, for example, ownership of a property can change while one of the former residents continues to occupy it. Because any policy of regulating land use at sale would probably exempt some sales, such as one between husband and wife, the Census data suggest that, on average, regulation at sale would take about ten years to reach half of all owner-occupied properties in the United States.

Job Creation

Regulation at sale will shift final demand from private consumption to public investment, and this shift will alter the demand for different kinds of labor. To investigate this effect, a model of the Southern California economy has been used to estimate how regulating land use at sale will affect local employment, wages, and tax revenue.

The Southern California Planning Model (developed by the Lusk Center Research Institute of the University of Southern California) is a 515-sector, input-output model of the economy of Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.[30] The model shows not only the direct effects created by final demand, but also the indirect and induced effects created by intersectoral linkages. This model can therefore be used to estimate the net effects of shifting final demand from private consumption to public investment.

Requiring sidewalk repair at sale, for example, will divert resources from private consumption to investment in public infrastructure. Suppose property owners spend $1 million a year to repair the sidewalks in front of their properties at sale, and they pay for these repairs by reducing their private consumption expenditures by $1 million a year. The effect of reducing private consumption by $1 million a year is estimated by reducing the final demand for each consumption category in proportion to its share of consumption as found in the 1988 Consumer Expenditure Survey conducted by the Bureau of Labor Statistics. The effect of increasing investment in sidewalks by $1 million a year is more difficult to estimate, because the model does not have a specific category for spending on sidewalks. The model's closest match is spending on roads, which seems similar in its labor and material demands to spending on sidewalks. Therefore, the effect of increasing spending on sidewalks is estimated by increasing spending on roads by $1 million a year.

Table A2 shows the estimated results of this shift from private consumption to public investment. Line 1 shows that private consumption and public investment change by equal but opposite amounts, so total final demand does not change. Line 2 shows that reducing private consumption by $1 million a year will eliminate 17.9 jobs, but increasing public investment by $1 million a year will create 21.5 jobs. The shift from private consumption to public investment therefore creates 3.6 additional jobs within the region. These local jobs are created because, compared with private consumption, a larger share of public investment is produced locally rather than imported from outside the region.

Line 3 shows that reducing private consumption by $1 million a year will reduce wages by $446,100 a year, but increasing public investment by $1 million a year will increase wages by $840,000 a year. The shift from private consumption to public investment will therefore increase total wages in the region by $393,900 a year. Many of the goods and services that supply private consumption are imported to the region, so local wages will decrease by only 45 percent of the decrease in private consumption. Most of the goods and services that supply public investment are

TABLE A2. Estimated regional effects of shifting $1 million from private consumption to public investment in Southern California[a]

	Private Consumption	Public Investment	Net Increase
Spending	−$1,000,000	+$1,000,000	$0
Jobs	−17.9	+21.5	+3.6
Total Wages	−$446,100	+$840,000	+$393,900
Average Wage per Job	$24,922	$39,070	+$14,148
Local Tax Revenue	−$38,300	+$71,800	+$33,500
State Tax Revenue	−$37,900	+$69,800	+$31,900

[a]Calculated by the Southern California Planning Model developed at the Lusk Center Research Institute of the University of Southern California. The region consists of Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.

produced locally (we have not yet learned how to import sidewalks), so local wages will increase by 84 percent of the increase in public investment. The net increase in local wages will therefore be 39 percent of the final demand diverted from private consumption to public investment.

Line 4 shows that the 17.9 jobs eliminated as a result of reducing private consumption pay an average wage of $24,922 a year, while the 21.5 jobs created by increasing public investment pay an average wage of $39,070 a year. Not only does shifting demand from private consumption to public investment create 20 percent more jobs than it eliminates, but the created jobs pay an average wage 57 percent higher than the average wage of the eliminated jobs.

The wages of the jobs created by building roads are unusually high because of the "prevailing wage" requirement for public works projects. Public construction projects in California must pay workers at the "most frequently occurring" wage rate in the region, and collective bargaining agreements typically set this modal rate. If property owners employ private contractors to repair the sidewalks fronting their properties, however, these contractors, who are not subject to a prevailing wage requirement, will probably pay lower wages. With lower wage rates, contractors have less incentive to substitute capital for labor. Therefore, repairing sidewalks at sale will create more jobs, but at lower average wages, than does spending the same amount to build roads. Most jobs created by regulation at sale will be in the private sector, and many will be for blue-collar workers.

Line 5 shows that local tax revenues will increase by $33,500 a year because the shift toward locally produced goods and services stimulates taxable economic activity in the five-county region. Line 6 shows that state tax revenues will increase by $31,900 a year. Combined state and local tax revenues will therefore increase by 6.5 percent of the amount spent on public improvement, without an increase in tax rates.

These estimated effects on employment, wages, and tax revenue depend on the scale of the analysis. If only one city within a region adopts regulation at sale, the resulting employment growth will occur throughout the region, and may be imperceptible in the adopting city. If all cities in America adopt regulation at sale, the resulting drop in imports *to* each region will reduce exports *from* other regions; employment growth in the nation will result only from a reduction in imports from abroad.

At the regional scale of analysis, stimulating spending on public improvements will increase employment, wages, and tax revenue, but these results are not the purpose of regulation at sale. The purpose of regulation at sale is to remedy a market failure caused by spatial externalities in the land market, and to improve communities. Increased employment, wages, and tax revenues are not the justification for regulation at sale, but they are welcome byproducts.

The figures in table A2 are rough estimates, and probably understate how regulation at sale will stimulate economic activity within a region. The analysis assumes that spending on public improvement is financed entirely by reducing local private consumption. But if owners make improvements at sale and then move from the region, part of the eventual reduction in private consumption (and associated jobs) will occur outside the region. Pay-as-you-go public finance should therefore stimulate economic activity within a region by even more than is estimated here.

AUTHOR'S NOTE

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NOTES

1. Wilshire-Westwood Scenic Corridor Specific Plan, City of Los Angeles Ordinance 155,044 (enacted in 1981).
2. Section 7.180.050 of the Santa Monica Municipal Code (enacted in 1993).
3. This was the average price paid to private contractors who planted street trees for the city. The cities' in-house cost of planting a street tree was only $63 (Kielbaso et al. 1988, 7).
4. This was the average price paid to private contractors who trimmed street trees for the city. The cities' in-house cost of trimming a street tree was only $45 (Kielbaso et al. 1988, 7).
5. Duerksen (1986, 31) notes that most signs are depreciated for federal tax purposes in five years or less, so a city might require removal of billboards at sale if they have already been fully depreciated for tax purposes. Regulation at sale will create a new form of "life estate" in a billboard—the life being the life of the property ownership, not the property owner's life.
6. A city can exempt owners from a rergulation at sale if compliance would impose a harship. Berkeley, Califor-

nia limits the required expenditure to bring a structure into compliance with its retrofit-at-sale ordinance to 0.75 percent of the sale price for a structure of not more than two units, and fifty cents per square foot for a structure containing three units or more (Section 19.16 of the Berkeley Municipal Code).

7. Property values will rise because the expected benefits of amenities are capitalized and shifted backward to the seller, not because the previous cost of providing amenities is shifted forward to the buyer. See Shoup (1983) for an analysis of how the land market shifts the costs and benefits of public expenditures between buyers and sellers.
8. When this analysis was done, the ending year of 1991 was the last full year for which sale dates in the assessment records were available.
9. Section 19.16 of the Berkeley Municipal Code (enacted in 1991). The warranty of compliance can be modified by a written agreement between the buyer and the seller for the buyer to assume responsibility for bringing the structure into compliance. The agreement must be filed with the city, which makes another inspection one year after the sale to verify the buyer's compliance with the agreement.
10. Section 7.18.090 of the Santa Monica Municipal Code.
11. A special assessment divides the total project cost among the benefited properties; a *deferred* special assessment allows owners to delay paying their special assessments, plus accumulated interest, until they sell their property (Shoup 1980, 1990, 1994). Overhead wires from buildings to utility poles might be put underground before sale, but the utility poles themselves cannot be put underground in a piecemeal fashion.
12. Section 6-29 of the Davis Municipal Code.
13. Section 96.303 of the Los Angeles Municipal Code.
14. Section 19211(b) of the California Health and Safety Code (enacted in 1995).
15. Section 6-20 of the Davis Municipal Code (enacted in 1976). A property must comply with the building codes that were in effect when the residence was constructed, or when any subsequent work on the residence was done.
16. Sections 18.26 and 18.27 of the Piedmont City Code (enacted in 1979) state that "in conjunction with the sale of the real property . . . new sidewalks and/or driveways must be constructed if required by the superintendent of streets." A sidewalk can be repaired if its vertical displacement is 3/4 inch or less, and must be replaced if the vertical displacement exceeds 3/4 inch. The Alameda County Assessor notifies Piedmont when a property has been transferred, because the city receives a part of the real property transfer tax. When the city is notified of the transfer, the parcel's record is checked to ensure that a valid inspection certificate is on file. (The certificate is valid for two years.) If no inspection certificate is on file, or if the inspection certificate shows that repair work was required and there is no building permit showing that the work was done, the buyer is notified of the noncompliance; this situation is rare, because all local real estate agencies are familiar with the inspection requirement. If the buyer does not voluntarily bring the property into compliance, the city makes the required repairs and bills the buyer.
17. O'Sullivan, Sexton, and Sheffrin (1993) analyzed the property taxes and market values of single-family houses sold in Los Angeles County in 1991. Properties that had not been sold since 1975 had an average effective tax rate of only 0.19 percent of market value; at sale, their tax rate increased to 1 percent of market value, a five-fold increase.
18. In Nordlinger v. Hahn, 505 U.S. 1, 112 S.Ct 2326, 120 L.Ed.2d 1 (1992), the U.S. Supreme Court upheld California's Proposition 13 against an unequal protection challenge under the U.S. Constitution. The Court held in an 8-1 decision that acquisition-value assessment does not violate a fundamental right or classify taxpayers on the basis of an inherently suspect characteristic.
19. Schwartz (1973) discusses home rule authority. A legal analysis would have to resolve the questions of whether regulation at sale is a hidden tax that must be approved in some manner, or a diminution of property rights that must be compensated in some manner. Requiring actions with neighborhood benefits can increase property values by more than the owner's cost of compliance, in which case it seems difficult to argue that regulation at sale will harm landowners.
20. Covenants are consensual because buyers know about the regulations when they buy. A covenant is therefore a mesh that self-selects buyers who have similar desires and expectations. By delaying obligations until sale, regulating land use at sale is a way to seek consensus for new planning requirements that will improve a neighborhood, but that will not necessarily suit all current residents and owners.
21. In regard to the regulations imposed by mandatory community associations, Richard Louv (1983, 81) quotes an 18-year resident of one heavily regulated community—Rancho Bernardo, California—saying, "Sure, they have some rules. . . . But the community associations are here to protect our interests, not let the community deteriorate. That's not regulation; it's common sense. I don't know why anyone would look at it differently than I do, do you?"
22. Section 55-79.97 of Virginia's Condominium Act requires that, prior to resale of any condominium unit, the owner must obtain from the unit owners' association and furnish to the purchaser "a statement that any improvement or alterations to the unit, or the limited condominium elements assigned thereto, by the prior unit owner are not in violation of the condominium instruments." The covenants director of a 1,700-unit condominium in Alexandria, Virginia, told me that one violation often detected by their resale inspection program is the installation of bathroom extractor fans that exhaust into the units' common attic space rather than to the exterior of the building.
23. Private inspections of property at sale are a precedent for public inspections. Private inspections are conducted for more than 60 percent of all home sales in

California, at a typical cost of $200 to $350 per inspection (*Los Angeles Times* January 21, 1996).

24. McPherson, Nowak, and Rowntree (1994, iii) found that trees in Chicago removed, per year, 17 tons of carbon monoxide, 210 tons of ozone, 98 tons of nitrogen dioxide, 93 tons of sulfur dioxide, and 234 tons of particulate matter (PM10). Street trees account for 10 percent of all Chicago's trees, and for 24 percent of the total leaf-surface area; therefore, street trees presumably accounted for about one-fourth of this pollution reduction.
25. Trees are efficient filters of airborne particulates because (1) their leaves have a high surface-area-to-volume ratio; (2) their leaf surfaces are covered with microscopic hairs that trap particulates; and (3) they are so large (Pitt, Soergell, and Zube 1979, 219). By reducing wind velocity, trees also reduce the air's carrying capacity and thus cause particulates to settle directly onto the ground. Bernatzky (1978, 137) reports that tree-lined streets in Frankfurt had 69 percent less particulate air pollution (measured in particles per liter of air) than did treeless streets.
26. That is, regulation at sale can increase relative rents in neighborhoods with amenities, and also reduce rents overall. A high rate of return on any neighborhood public investment implies a disequilibrium condition of underinvestment that regulation at sale will help to correct.
27. Any surprise at finding similar sales rates in different areas probably stems from a lack of previous attention to the issue. In a study of residential mobility patterns, Peter Rossi (1980, 112) found that "fairly large proportions in each area were unaware of the mobility taking place about them. When mobility was perceived, the accuracy of perception was fairly small. In other words, for many families, the turnover of residents in their neighborhoods was a social phenomenon below the threshold of attention."
28. The ending date of March 1990 for analysis of the Assessor's data was chosen to make the results comparable to the Census data, which were collected in March 1990. The Assessor's data refer to single-family housing (not necessarily owner-occupied); the Census data refer to owner-occupied housing (not necessarily single-family).
29. A community with a growing housing stock will have its sales rate increased by that fact alone. When the housing stock is growing, the distribution of properties according to their last sale date will therefore overestimate the rate at which properties are sold when the housing stock is stable.
30. See Richardson et al. (1993) for a description of the Southern California Planning Model. I am grateful to Peter Gordon for using this model to estimate the effects of regulating land use at sale.

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