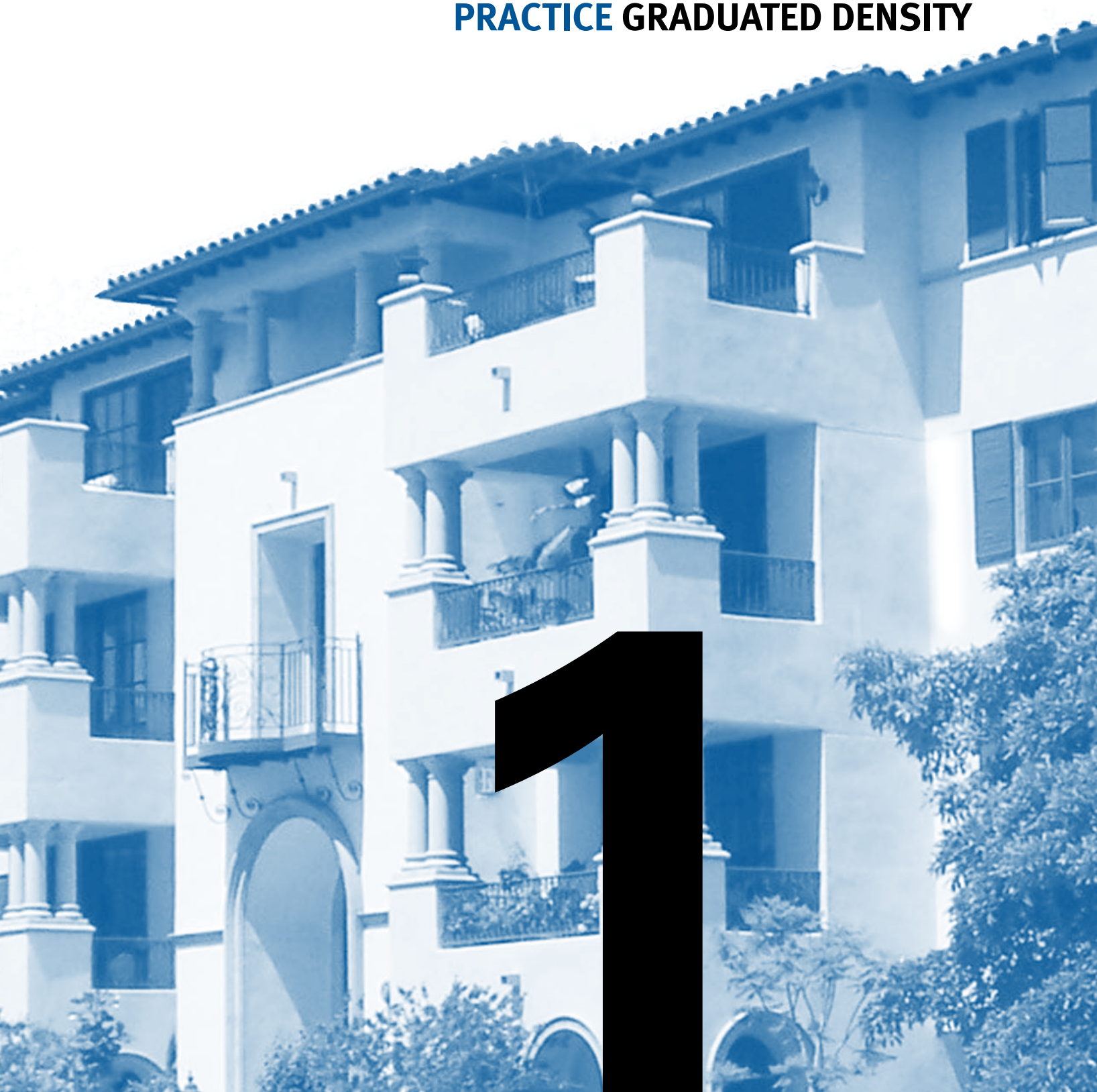
ZONING **PRACTICE** JANUARY **2009**

AMERICAN PLANNING ASSOCIATION

ISSUE NUMBER ONE

PRACTICE GRADUATED DENSITY



1

Graduated Density Zoning to Encourage Land Assembly for Infill Redevelopment

By Donald Shoup, FAICP

"One of the firmest premises of redevelopment is the need for public action to deal with the practical problems of urban land assembly," so says University of Pennsylvania professor Lynn Sagalyn, who adds: "This includes numerous small parcels, fragmented ownership, and balkanized derivative interests, all of which hinder spontaneous market-driven transformations."

A developer might try to buy enough adjacent properties to create a suitable infill site, but if some owners hold out hoping to be the last to sell (and thus command a high price), they can stymie the redevelopment. The inability to assemble land can thus block urban revitalization and lead to suburban sprawl on large greenfield sites.

Graduated density zoning that allows higher density on larger sites promises a new planning strategy to encourage land assembly for infill redevelopment. Zoning that allows higher density (and thus higher land values) on larger sites can increase the incentive for owners to cooperate in a land assembly. It can also reduce the incentive to hold out by creating a new fear of being left out. If any holdouts from a land assembly are left with sites that cannot be combined with enough contiguous properties to trigger higher density, they lose a valuable opportunity. This article explains graduated density zoning as a way to encourage voluntary land assembly for infill development, and it presents the results of graduated density zoning in one city.

THE BENEFITS OF LAND ASSEMBLY

To see the benefits of land assembly for infill development, put yourself in the shoes of an architecture or urban design student presented with the following assignment:

> Design a residential building with a net density of 54 units per acre on a lot that is 50 feet wide and 130 feet deep. The required setbacks are five feet on each side of the building, and 15 feet at the front and back. The parking requirement is 2.25 spaces per dwelling unit. Then repeat the assignment for a lot that is 100 feet wide. How does increasing the width of the lot affect the architecture of the building, the economics of the development, and the urban design of the street?

Students quickly see that the footprint of the building on the double lot is 9,000 square feet, which is 1,000 square feet (13 percent) greater than the total of 8,000 square feet for two buildings if the two lots had been developed separately with 10 feet of setbacks between them.

Why choose a density of 54 units per acre for the example of infill development? In Los Angeles, the R3 Multiple Dwelling Zone requires a minimum of 800 square feet of land per dwelling unit. Because one acre contains 43,560 square feet, this is equivalent to a maximum of 54 units per acre (43,560/800). Many other cities have a similar zoning category. On a lot that is 50 feet wide

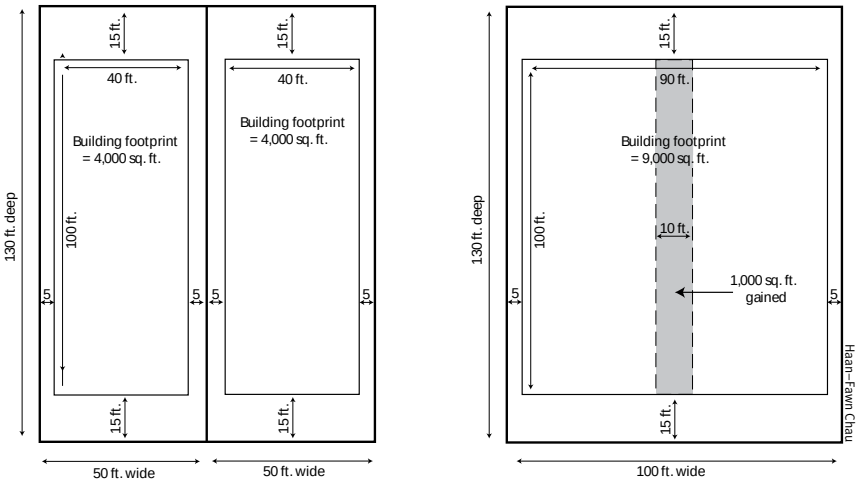


Figure 1. Land assembly increases the buildable area.

ASK THE AUTHOR JOIN US ONLINE!

Go online from February 16 to 27 to participate in our "Ask the Author" forum, an interactive feature of Zoning Practice. *Donald Shoup, FAICP, will be available to answer questions about this article. Go to the APA website at www.planning.org and follow the links to the Ask the Author section. From there, just submit your questions about the article using the e-mail link. The author will reply, and* Zoning Practice *will post the answers cumulatively on the website for the benefit of all subscribers. This feature will be available for selected issues of* Zoning Practice *at announced times. After each online discussion is closed, the answers will be saved in an online archive available through the APA* Zoning Practice *webpages.*

About the Author

Donald Shoup, FAICP, is a professor of urban planning at the University of California, Los Angeles. From 1999 to 2003, he chaired the university's Department of Urban Planning. He is the author of *The High Cost of Free Parking* (APA Planners Press, 2005).

Donald Shoup

Figure 4 shows another apartment building on the same block. A developer assembled two 50-foot-wide lots and built a four-story, 16-unit building on a 100 x 130 foot lot (a density of 54 units per acre). The developer was able to build all 16 units allowed by the zoning because structured parking is more efficient on larger sites, and the underground garage could provide the required 36 parking spaces (16 x 2.25). The double lot achieves further economies of scale because the 16-unit building has one elevator and two stairwells, the same as the seven-unit building on the single lot. The driveway, curb cut, and entrance steps take up a smaller share of the frontage for the wider lot, leaving more space for landscaping. In this case, land assembly led to cost savings and a 14 percent increase in density.

Figure 2 (above). Seven-unit apartment building on a 50 x 130 foot lot (47 units per acre). Figure 3. Tandem compact parking space in an underground garage shows the ingenious measures sometimes devised to fit required parking into tight conditions.

and 130 feet deep (6,500 square feet), the R3 zone allows eight units (6,500/800).

Los Angeles requires 18 parking spaces for an eight-unit building (8 x 2.25). The cost of providing the required parking often reduces the number of units that can be built on a small site. For example, Figure 2 shows a new four-story, seven-unit apartment building on a 50 x 130 foot lot. Because the developer could only squeeze 16 parking spaces onto a single level of the underground garage, the building has only seven apartments (16/2.25), which is equivalent to 47 units per acre. The developer could have built a second underground level in the garage to provide two more parking spaces required for an eighth apartment, but the added return on another apartment did not justify the prohibitive cost of the added parking spaces.

Donald Shoup

Donald Shoup

Figure 4. Sixteen-unit apartment building on a 100 x 130 foot lot (54 units per acre).

Paradoxically, the economic rewards of land assembly make it difficult to accomplish. If assembly increases land values, owners may hold out because they hope to own the last parcel needed for the assembled site. Once in this position, they can bargain for a higher price. If dozens of owners must sell their property before redevelopment can proceed, each one can halt the process by refusing to sell. Eminent domain can overcome these practical problems of land assembly, but it has become an increasingly contentious planning issue since the U.S. Supreme Court's 2005 ruling in *Kelo v. City of New London*. Many state legislatures have responded to *Kelo* by enacting or considering limits to using eminent domain to assemble land for redevelopment. As an alternative to eminent domain, graduated density zoning is a promising new way to encourage voluntary land assembly for urban redevelopment.

As an alternative to eminent domain, graduated density zoning is a promising new way to encourage voluntary land assembly for urban redevelopment.

GRADUATED DENSITY ZONING

Suppose a city wants to encourage land assembly for transit-oriented redevelopment around a new rail station. Buildings on the existing small parcels are in poor condition, but many owners either oppose higher density or are holding out for higher prices. Persuading owners to agree to voluntary land assembly might seem politically impossible, but creative use of zoning incentives may change the owners' minds. Consider the incentives created by zoning that allow higher densities on larger sites.

The city can keep the existing low-density zoning for sites of less than a given size (such as one acre) but allow multifamily housing at higher density (such as 50 units per acre) on sites of an acre or more. Higher density and thus higher land value is possible if—and only if—a developer can assemble contiguous properties that sum to at least an acre. If the value of land for development at 50 units per acre greatly exceeds the value of the existing properties in their current uses, adjacent owners have a new economic incentive to sell for redevelopment. Similarly, developers have a new incentive to buy the adjacent properties. Allowing higher densities on larger sites may thus stimulate voluntary land assembly.

Graduated density zoning can transform the bargaining for land assembly. It will give owners more information about the benefits of assembly and will increase the incentive to form a coalition rather than act independently. Graduated density will not eliminate the incentive to hold out, but it can create a new fear of being *left out*. Holdouts will lose a valuable opportunity if they are left with sites that cannot be combined with enough contiguous land to trigger higher density. Zoning that is contingent on site size can thus reduce the likelihood of scattered redevelopment on small sites.

Owners who participate in a land assembly will not have to live with redevelopment next door because they will have cashed out and moved away. Some remaining neighbors will always object to redevelopment, but the voluntary nature of land assembly under graduated density zoning may increase political support (and reduce opposition) within the development site itself.

Form-based zoning codes, which focus more on controlling a city's physical form than on regulating its land uses, can also include a graduated density component. A city with form-based zoning can, for example, reward land assembly by allowing additional height for buildings on larger sites within a zone or by reclassifying the site into a denser zone.

Graduated density zoning will not reduce owners' sentimental attachments to their homes, but the higher property values as part of an assembled site will increase both the ability to buy a better replacement home and the opportunity cost of holding out. Graduated density may become a new planning option in cases where eminent domain was previously considered the only way to assemble land for redevelopment. Cities will no longer have to choose between using eminent domain and accepting the likelihood that holdouts will block redevelopment.

GRADUATED DENSITY ZONING IN PRACTICE

Simi Valley, a suburb of Los Angeles, uses graduated density zoning. The city devised it for Kadota Fig, a large-lot residential neighborhood that was subdivided in 1927 as the Kadota Fig Farms, complete with fig trees and facilities for pigeon farming. The neighborhood was zoned for low density (up to two units per acre), but the city had developed at much higher density around it.

Because of Kadota Fig's central location, there was strong market interest in redevelopment at higher density, but the city wanted to avoid spot upzoning and piecemeal projects on small sites. The city preferred a larger project that could include interior streets, parks, and other amenities that are

hard to provide in lot-by-lot development. Developers also preferred a larger project because it could accommodate a Planned Unit Development. A PUD allows the developer to improve the design and maximize the value of the entire project by rearranging the lot sizes, setbacks, and building placement subject to the overall density limitations. Both the city and developers recognized that land assembly would allow better design, more amenities, and a lower cost per dwelling unit.

Achieving higher density with good urban design in Kadota Fig required land assembly, and to achieve this result the Southeast Kadota Fig Specific Plan states:

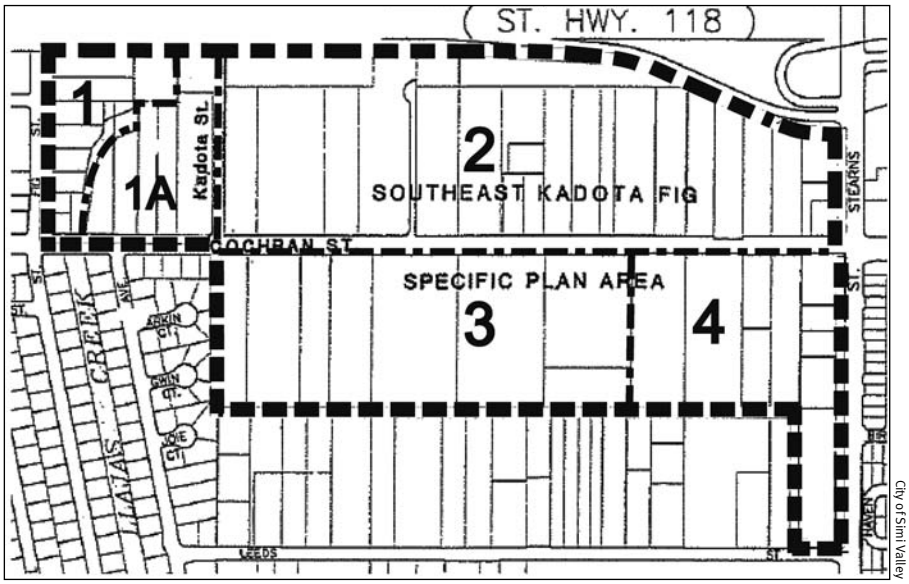
> Cooperative planning efforts are strongly encouraged among affected property owners. Toward this end, implementation measures have been established for Planning Units 1, 2, and 4 which provide for potential increases in residential density based upon the size of the proposed Planned Developments.

In Unit 2, for example, the base zoning allows 3.26 dwelling units per acre. If a developer assembles a site that is 13 acres or larger, however, the allowed density jumps to seven units per acre, an increase of 115 percent. More than twice as many dwelling units can be built on the assembled site than would be allowed on the same land if it were not assembled. The city adopted the specific plan in 1996, and within a year a developer assembled 18 parcels to create a 31-acre site in Unit 2, which has the highest density bonus. By 2000, a master planned community with 200 single-family homes had been built on the land formerly occupied by eight single-family homes, three travel trailers, one mobile home, and various storage buildings and animal pens.

The high density in Unit 2 required small lots, almost half with zero lot lines (one side of the house rests on the lot's boundary, giving a larger and more useful side yard on the other side than if the house were placed in the center of the lot). Because the garages face alleys behind the houses, garage doors do not dominate the front facades.

In Unit 4, where the density bonus is 56 percent, two parcels were assembled and developed with 35 single-family homes. No land assembly has occurred in Unit 1A, where the density bonus is 37 percent, or in Units 1 and 3, where there is no density bonus.

Unit 2 in Kadota Fig might have been assembled and redeveloped if the city had simply rezoned all the land at a density of seven



City of Simi Valley

Figure 5. Kadota Fig Specific Plan Area in 1996 (above) and 2002 (below).

Google Earth

Planning Unit	Area (Acres)	Allowed Density (dwelling units/acre)		
		Base	Graduated	Percent Increase
1	6.1	2.0	—	—
1A	6.3	5.1	7	37
2	34.5	3.26	7	115
3	3.7	15	—	—
4	13.5	3.26	5.1	56
	2.6	2.0	—	—

Donald Shoup

Table 1. Graduated density zoning in the Southeast Kadota Fig Specific Plan.

units per acre, regardless of site size. Interviews with the city's planning staff and with realtors who participated in the project, however, suggest that graduated density zoning provided a strong incentive for voluntary land assembly. Eighteen owners sold all their land, three sold part of their land, and only one refused to sell any land. The negotiations were far from simple, but Patti Felker-Breiner, the realtor who represented the developer, explained, "All parties involved worked together successfully considering there were 18 parcels and 32 property owners, one buyer, several attorneys, several accountants, and two brokers."

Gary Seaton, the realtor who represented the sellers, emphasized that each site was worth more if developed collectively at seven dwelling units per acre than individually at 3.26 units per acre. In Seaton's view,

> If the city had simply rezoned the land at seven units per acre, regardless of the site size, assembling enough land to create a master planned community would have been far more difficult. Instead the city had the foresight to double land values by doubling the allowed density if the adjacent landowners worked together to assemble their contiguous parcels.

When he first learned about the contingent zoning for Kadota Fig, Seaton thought it put an undue burden on property owners compared with rezoning all the land at seven units per acre. After he participated in assembling the land for development, however, he found the 13-acre minimum created an economic incentive that was the key to assembling a site large enough for a master planned community. In his judgment, the developer paid the land price expected for development at seven units per acre. The original owners thus captured most of the capital gains from the land assembly and higher density. Most owners bought into the redevelopment of their neighborhood because they received the capital gains resulting from the land assembly.

Several possible combinations of properties would have summed to at least 13 acres and would also have blocked one or more adjacent properties from becoming part of another 13-acre assembly. The fear of being left out may therefore have convinced some owners to join the assembly rather than hold out. As more properties were assembled, the possibility of becoming part of an alternative 13-acre assembly shrank, so the probability of being left out increased. Eventually, only one owner held out from the land assembly.

The results in Kadota Fig do not prove that graduated density zoning will stimulate land assembly elsewhere. Nevertheless, several attempts to assemble land in Kadota Fig had failed during the previous decade, and the rezoning achieved what the city wanted. When compared with conventional zoning, the requirement to assemble at least 13 acres before building at higher density increased the rewards to the original owners in Kadota Fig. If graduated density zoning deters strategic holdouts and thus reduces the transaction costs of land assembly, it can increase the probability of a successful redevelopment that yields higher rewards for both the original owners and the developer.

Simi Valley crafted its graduated density ordinance to encourage land assembly in one specific location, but cities can include graduated density as a standard feature of their zoning ordinances. For example, Glendale, California, uses a form of graduated density zoning in its multifamily districts that increases the allowed density by 25 percent and the allowed height by one story for lots with a width of 90 feet or greater. The goal is to improve the urban design of multifamily neighborhoods, but the effect also encourages land assembly. Glendale's 25 percent density bonus for a wide site is not so dramatic as Kadota Fig's 115 percent density bonus for a large site, but it does show how cities can experiment with their zoning ordinances to encourage land assembly and improve urban design.

Glendale offers a graduated density incentive everywhere in the three multifamily zones, regardless of the existing housing stock. A more discriminating policy is to offer a graduated density overlay zone only where a city wants to encourage redevelopment. Communities can tailor graduated density overlay zones to achieve specific results in specific neighborhoods.

WHERE WILL IT WORK?

The results in Simi Valley suggest that planners have a promising new option to consider when cities want to encourage voluntary land assembly for infill development. Graduated density zoning is not appropriate everywhere, however, because land assembly is not appropriate everywhere. Bigger is not always better, and graduated density will be appropriate only where a city wants higher density redevelopment on assembled sites. Graduated density may turn out to be appropriate in only a few locations. It cannot help where large sites are already in single ownership or where there is no market for new uses. Market demand will determine where graduated density zoning can lead to assembly.

	Allowed Density (dwelling units/acre)			
Zone	Base	Graduated	Percent Increase	Threshold Width (feet)
R–2250	19.4	24.2	25	90
R–1650	26.4	33.0	25	90
R–1250	34.8	43.6	25	90

	Allowed Height (stories)			Threshold
Zone	Base	Graduated	Increase	Width (feet)
All three	2	3	50	90

Donald Shoup

Table 2. Graduated density zoning in Glendale, California.

Graduated density zoning relies on market incentives to assemble land, and it can convert the strategic desire to *hold out* into the fear of being *left out*. If enough owners agree to land assembly, holdouts can keep their property but they may miss the chance for it to become part of a site large enough to trigger higher density and higher value. The prospect of losing the opportunity for a large windfall may convince many owners to sell out rather than to hold out.

Although this new zoning variant first appeared in a niche that was especially favorable for its success, planners can adapt it to suit other circumstances. Only trial and error will show whether and how graduated density zoning might evolve and work elsewhere. Fortunately, it has the advantage of being a

small, incremental change to conventional zoning. If a city does try graduated density zoning and it fails to stimulate land assembly, no one loses.

Market-based incentives cannot solve the problem of the immovable holdout, who may be a home owner, an apartment building owner, or a commercial landlord. Owners may refuse to sell because they love their property, hate developers, or dislike change. In these cases, they will not respond to any feasible amount of money. No tool is ideal in every situation; sometimes you need a hammer, sometimes a screwdriver. Graduated density zoning is simply a new incentive in the planner's toolkit, and in some cases it can achieve the benefits of eminent domain without the coercion.

CONCLUSION: ZONING FOR INFILL DEVELOPMENT

Graduated density zoning is a new way to encourage voluntary land assembly for infill redevelopment. By allowing higher density on larger sites, it creates an incentive for owners to cooperate in a land assembly that can greatly increase the value of their individual properties. Graduated density zoning also has another important advantage. By requiring lower density on smaller sites, it protects older neighborhoods against out-of-scale overbuilding on single lots.

In cities where market demand for infill development is strong but ownership is fragmented, graduated density zoning has the potential to ease both the politics of higher density and the economics of land assembly. First, graduated density is a regulatory giving, not a taking, and the density bonus for owners who participate in land assembly can ease the politics of rezoning for higher density. Second, once land is rezoned for graduated density, the economic incentive to participate in land assembly can speed redevelopment. Public planning will guide land assembly and redevelopment, but the private market will carry it out.

If graduated density zoning encourages voluntary land assembly for urban redevelopment, it can help to create more housing, jobs, public amenities, and tax revenue. Cities can avoid spot upzoning and piecemeal projects on small sites, and can thus protect neighborhoods against out-of-scale overbuilding on small lots. Graduated density zoning can also improve urban design, hasten central city regeneration, and slow suburban sprawl. A small change in the technical details of zoning may help to achieve all these goals.

Donald Shoup

Donald Shoup

Figure 6 (above). Typical house on a large lot before redevelopment; Figure 7 (below). Zero lot line houses after redevelopment in Unit 2 of the Southeast Dakota Fig Specific Plan.

Note: This article is condensed from "Graduated Density Zoning," in the *Journal of Planning Education and Research*, Volume 28, No. 2, Winter 2008.

Multifamily housing on a combined lot in Los Angeles. Cover design by Lisa Barton from a photo by Donald Shoup.

VOL. 25, NO. 1

Zoning Practice is a monthly publication of the American Planning Association. Subscriptions are available for $75 (U.S.) and $100 (foreign). W. Paul Farmer, FAICP, Executive Director; William R. Klein, AICP, Director of Research

Zoning Practice (ISSN 1548–0135) is produced at APA. Jim Schwab, AICP, and David Morley, Editors; Julie Von Bergen, Assistant Editor; Lisa Barton, Design and Production.

ZONING PRACTICE
AMERICAN PLANNING ASSOCIATION

122 S. Michigan Ave.
Suite 1600
Chicago, IL 60603

1776 Massachusetts Ave., N.W.
Washington, D.C. 20036

DOES YOUR COMMUNITY PROVIDE AN INCENTIVE FOR SITE ASSEMBLY?

1