

CityLab University: Zoning Codes

Don't know your R1 from your FAR? We're here to explain how zoning laws work, how these ordinances shape your city and neighborhood, and why we fight over them.

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It's time again for CityLab University, a resource for understanding some of the most important concepts related to cities and urban policy. If you have constructive feedback or would like to see a similar explainer on other topics, drop us a line at editors@citylab.com.

Although invisible on land and inscrutable on paper, municipal zoning codes have a tremendous impact on the form of cities—and by extension, on the way people live in them.

Today, these arcane regulations are seeing unprecedented levels of public scrutiny. After decades of embracing strict zoning rules, several cities and states want to relax them to make it easier to build housing and create more environmentally friendly communities.

This edition of CityLab University offers an overview of zoning and defines the key terms related to it in America, so you can better understand the rules that are shaping your city and neighborhood.

KEY POINTS

- Although there were earlier versions of municipal zoning codes, the first comprehensive one was adopted by New York City in 1916.
- The U.S. Supreme Court decision in *Euclid v. Ambler* (1926) established the constitutionality of local zoning ordinances and helped set the pattern for what is known as “Euclidean” zoning.
- Critics of zoning see it as a key driver of sprawl and racial and economic segregation.
- Beset by a housing affordability crisis, U.S. cities and states are increasingly looking to undo regulations such as R1 zones, parking minimums, and red tape around accessory dwelling units in order to increase the supply of housing.

HISTORY

Municipal zoning in America evolved from a complex set of processes in the first half of the 20th century. In that era, increasingly tall, bulky buildings and industrial expansion were raising environmental concerns for urban dwellers, and a growing suburban homeowner class was flexing its political muscle. Meanwhile, private car ownership offered a new mobility option, and demographic changes led to efforts to maintain racial and economic exclusion.

Embryonic zoning codes existed in America as early as the 19th century, but these tended to govern specific issues like fire safety or apply only to a discrete area. During this period, some developers also attached their own restrictions to lots and homes as a means of ensuring an air of exclusivity and high property values. In Kansas City's Country Club District in the first decade of the 20th century, for example, developer J.C. Nichols stipulated the orientation of houses to the street and a minimum construction cost, and he prohibited home sales to blacks. Multiple cities passed race-based zoning ordinances in the 1910s; the U.S. Supreme Court struck down Louisville's, but cities' attempts at enforcing residential segregation continued.

In 1908, Los Angeles adopted the country's first municipal zoning ordinance, creating residential districts prohibiting "nuisance" uses such as laundries and separate industrial districts. But the first comprehensive zoning code in the United States was New York City's 1916 Zoning Resolution, which came amid concerns that new skyscrapers like the monolithic, 41-story Equitable Building were blocking light and air from the streets. The 1916 rules required new towers to become narrower as they grew taller, resulting in the "wedding-cake" setbacks seen in iconic skyscrapers like the Empire State and Chrysler buildings.

A decade later came the legal basis for many municipal zoning codes in America—its name derived not from the ancient Greek mathematician Euclid, but rather from the humble Cleveland suburb of the same name.

In 1926, the U.S. Supreme Court heard the case *Village of Euclid v. Ambler Realty Co.* and decided in favor of Euclid, Ohio's power to dictate land use. This affirmed that municipalities had the constitutional authority to regulate which uses could go on which parcels and other aspects of buildings on private property.

Anyone who has played Sim City will intuitively understand Euclidean zoning. Each piece of land has a single, specifically allowed use. (Typical uses include agricultural, residential, commercial, industrial, institutional, and open space.) On a zoning map, different land-use types are indicated by different colors, and the density or intensity of development is shown by darker and lighter shades, as on Euclid's current zoning map.

Following *Euclid v. Ambler*, many municipalities across the country adopted Euclidean zoning laws, which ensured that homes (usually those belonging to more affluent white people) would be far from factories and other undesirable land uses. These laws also helped preserve open space and historic neighborhoods and protected home values in new suburbs. African American neighborhoods often got zoned for the uses white Americans didn't want near them, causing property values in black neighborhoods to erode and further entrenching segregation.

When private cars became the dominant mode of transportation and fewer people walked to work or on errands, areas zoned for a single use got bigger, according to Sonia Hirt in *Zoned in the USA*. Lower-density zoning and parking minimums have had a huge impact on the look, functioning, and carbon footprint of American cities.

Many scholars view Euclidean zoning as a key factor in America's urban sprawl and racial and economic segregation. However, Houston—the largest American city without a municipal zoning ordinance—is also sprawling and segregated, making it at least a partial counterpoint to these arguments. (Despite its lack of zoning, Houston does have non-zoning regulations that accomplish some of the same things.)

Separation of uses remains a fundamental principle of most zoning codes, even as form-based and incentive zoning gain in popularity (neither of which is mutually exclusive with Euclidean zoning). The true opposite of Euclidean zoning is mixed-use zoning, which allows for the apartment buildings with ground-floor shops beloved by Jane Jacobs. The movement known as Smart Growth promotes mixed-use, high-density development near mass transit, and has inspired new zoning guidelines in Massachusetts, California, and elsewhere.

GLOSSARY

The following is a glossary of terms that are key to understanding this wonky-but-important arena of law and policy. (Click a letter below to skip ahead to the relevant entries.)

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A

Accessory use/accessory dwelling unit



Giordano Poloni

An accessory use is a structure or improvement that enhances or is required by the primary use of the lot. Accessory uses do not have to follow the same rules as structures permitted under conventional zoning, since they are not the primary purpose of the lot, and are usually much smaller and less noticeable than the main building. Examples of accessory uses include garages and vending machines.

The most discussed accessory use of late has been accessory dwelling units (ADUs), also known as in-law suites, backyard cottages, or granny flats. Particularly popular following loosened restrictions in housing-starved West Coast cities including Vancouver, Portland, and Los Angeles, ADUs are small housing units built in the garage, attic, basement, or backyard of another building.

ADUs tend to be cheaper to build than a traditional housing unit—one study found that ADUs in the Pacific Northwest cost an average of \$156,000 to construct, excluding land costs—and their more modest visual impact makes them an easier sell to change-averse neighbors. Rental income from an ADU can help homeowners afford to remain in increasingly expensive cities, or keep multi-generational families together. Still, ADUs remain bureaucratically difficult to build, if not completely illegal, throughout most of the country.

Air rights (see *Floor area ratio*)

C

Classifications (R1, etc.)

Also known as zoning categories or symbols, these letter-number combinations represent the nuts and bolts of what is and isn't allowed on any given parcel in a city. There is no universal standard for zoning classifications, but many cities indicate the use with a letter or combination of letters (R for residential, C for commercial, and I for industrial, for instance), and the density or intensity of development with a number.

In addition to use and density, zoning categories also serve as shorthand for a number of key design requirements, including height limits, setbacks, and floor-to-area ratio (FAR), as indicated in the table below. Zoning classifications can be incredibly specific: Jacksonville, Florida, for instance, has 11 different categories for low-density residential parcels alone.

Examples of zoning classifications, City of Los Angeles

(Source: Department of City Planning, Generalized Summary of Zoning Regulations)

Zone	Use	Min. area per lot	Min. area per unit	Min. lot width	Car parking required
A1	Agriculture: One-Family Dwellings, Parks, Playgrounds, Community Centers, Golf Courses, Agricultural Uses)	5 acres	2.5 acres	300 ft	2 spaces per dwelling unit
R1	One-Family Residential: One-Family Dwellings, Parks, Playgrounds, Community	5,000 sq ft	5,000 sq ft	50 ft	2 covered spaces per dwelling unit

Centers, Truck Gardening, Home Occupations

					1 space per unit < 3 habitable rooms; 1.5 spaces per unit = 3 habitable rooms; 2 spaces per unit > 3 habitable rooms; uncovered 1 space each guest room (first 30)
	Multiple Dwelling: Apartment Houses, Churches, Schools, Child Care, Homeless Shelters, Clubs, Lodges, Hospitals, Sanitariums, Hotels	5,000 sq ft	200 sq ft	50 ft	
R5					

E

Euclid v. Ambler

The facts of the case: Ambler Realty owned 68 acres of land in Euclid, a Cleveland suburb. Euclid adopted a zoning code in 1922 that split the land into separate districts and prevented Ambler from developing some of it for industrial purposes. So the company sued, arguing that the zoning had significantly reduced the value of the land, and violated the Fourteenth Amendment's protections of liberty and property.

In a 6-3 ruling, the court decided against Ambler, finding that the zoning ordinance did not exceed the local government's power. While Ambler had hoped to develop industrial uses on its land, the decision was partly a referendum on the social value of apartments. "[V]ery often the apartment house is a mere parasite," Justice George Sutherland wrote in his opinion, bringing "disturbing noises incident to increased traffic and business" and "depriving children of the privilege of quiet and open spaces for play."

Exclusionary zoning

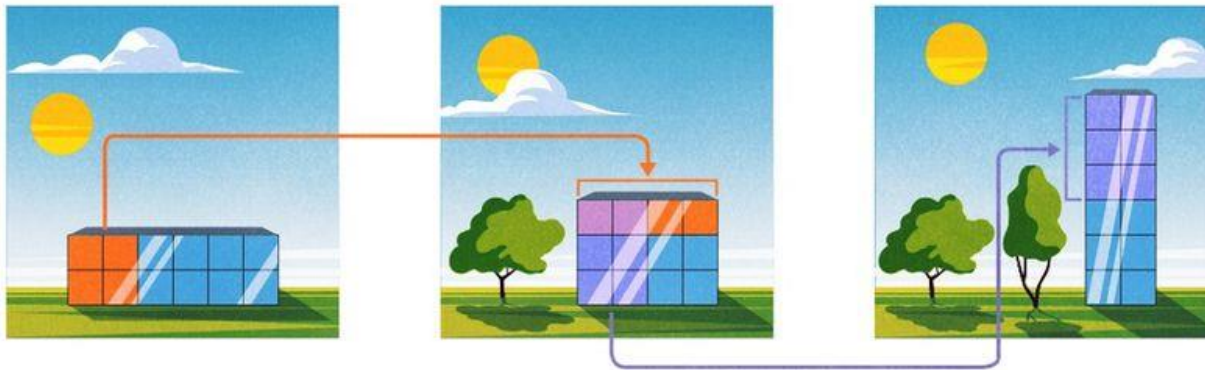
Even after the passage of the Fair Housing Act in 1968, zoning continues to be used to maintain racial and economic segregation by preventing less expensive types of housing, often in desirable neighborhoods. Requirements such as large lot sizes and parking minimums make it hard or impossible to build smaller, less expensive housing that middle- and lower-income residents would be able to afford. This often translates to a neighborhood's high-quality public schools and proximity to jobs being "off limits" for people without the means to buy in. So exclusionary zoning works to concentrate poverty in areas that lack such strict rules.

F

Floating zones

Floating zones are a type of spot zoning that change the zoning laws for a particular area with conditions that "float" until a developer proposes a plan that can meet those conditions. Floating zones can be used to encourage specific types of land uses in a particular area, including affordable housing, commercial districts, or environmentally friendly developments.

Floor area ratio (FAR)



Giordano Poloni

Floor area ratio (FAR), or the ratio of floor area to lot area, is a metric for regulating the number of square feet that can be developed on a parcel without specifying the exact shape and size of the structure. For example, a FAR of 5.0 means that a builder can develop five times as much square footage as exists on the lot. FAR is a metric within a rubric known as performance zoning, which includes other dimensional ratios to preserve open space, light, and air.

FAR requirements do not by themselves prescribe a particular building shape. A parcel with a FAR of 1.0 could include a two-story building covering 50 percent of the lot area, or two two-story buildings each covering one-quarter of the lot.* These requirements often exclude basements, attics, and parking garages, and are usually coupled with more specific regulations pertaining to setbacks and height.

FAR is particularly relevant in New York City, where it is part of the formula for determining the transferable development rights, commonly known as “air rights,” for new towers. If a lot is currently improved with a building smaller than the allotted FAR, the owner of that building can sell those air rights—or excess FAR—to the developer of an adjacent property. By cobbling together air rights from other properties, a developer can build much higher than the allotted FAR on their lot.

This “cap-and-trade” system has been a driving force in the development of supertall towers in Manhattan. Critics of these policies have released a series of reports called “Accidental Skyline,” which criticize the city’s policies around air right transfers and other enabling policies for supertall towers, like by-right approvals and the mechanical voids loophole, which the city recently reformed.

Form-based code

Rather than focusing on land use, form-based zoning codes regulate design elements, including the size, style, and placement of buildings. Form-based codes tend to promote walkability and more compact development patterns, since they allow different land uses to be closely intermingled.

Whereas Euclidean zoning often deals in minimums or maximums—like maximum height limits or minimum setbacks or parking requirements—form-based zoning is more prescriptive, requiring specific ranges for height, bulk, setbacks, and even more minute design details like signage, landscaping, and architectural ornamentation. Form-based zoning has been championed by New Urbanist architects and planners, who are interested in creating denser pedestrian neighborhoods, often with a traditional architectural vernacular.

Denver’s zoning code includes several “neighborhood contexts,” including suburban, urban edge, urban, general urban, and urban center. They are distinguished by building placement and height; “street, alley, and block patterns;” and “diversity of mobility options.” The adoption of these form-based codes in 2010 did not eliminate Euclidean codes: Of the city’s 25 neighborhood-context districts, 12 are exclusively residential, according to Sonia Hirt.

I

Incentive zoning

This permits greater density, fewer parking spaces, and other developer perks in exchange for contributions to the public good, like parks, transportation infrastructure, or affordable housing, as in inclusionary zoning policies. Incentive zoning can be used to guide developers to certain outcomes without making them legally mandatory. Successful incentive zoning usually requires land values to be sufficiently high for developers to be willing to incur additional costs.

Inclusionary zoning (see *Incentive zoning*)

L

Lot coverage

Lot coverage is the bird’s-eye-view footprint of a structure—in other words, the proportion of its lot that it covers up. Unlike FAR regulations, lot-coverage rules do not regulate the livable square footage of a building, but rather how much space it takes up at ground level.

Lot-coverage maximums mandate that a development’s footprint cannot exceed a certain percentage of the lot. In the affluent Bay Area suburb of Tiburon, for example, houses in R1 zones can only cover 30 percent of the lot. These restrictions maintain a semi-rural character in many suburban neighborhoods, and can also provide environmental benefits related to fire protection and water drainage.

Similar to lot-coverage maximums, minimum lot sizes are in force in many suburban neighborhoods and towns wishing to preserve a natural feel. Parts of Greenwich and Stamford, Connecticut, have minimum lot sizes of three acres or more. Despite providing some environmental benefits, these kinds of restrictions have the effect of increasing car dependence by ensuring buildings are far apart from one another; they have also been criticized for being a tool of segregation, wherein all potential residents must be able to afford a massive lot.

M

Minimum lot size (see *Lot coverage*)

Mixed-use zoning (see *History*)

N

Nonconforming use

A nonconforming use is a structure or design element that is not legal under current zoning. Many nonconforming uses—like an apartment building in a neighborhood that was zoned for lower density, or a store in an exclusively residential zone—are grandfathered in. But if a building is destroyed, whether by demolition or disaster, it can’t always be rebuilt to the same density or for the same use.

ADUs are a common nonconforming use that is increasingly being legalized. In some cities and states that have relaxed ADU rules, property owners with previously nonconforming ADUs can pay a fee, get their property inspected, and get it legalized.

O

Overlay zone

An overlay zone or district enacts special zoning rules in a designated area that supersede or alter the existing zoning. Usually, overlay zones are more strict than the existing zoning and are intended to protect sensitive local environmental or design features. For example, overlay zones can be implemented in flood-prone areas, adding special vegetation requirements or impervious surface maximums.

P

Parking minimums

Parking minimums are the number of off-street parking spaces required for a new development. Different uses trigger different parking requirements: In Los Angeles, the first city in the nation to adopt parking minimums, gyms, restaurants, nightclubs, and coffee shops must provide one off-street parking spot per 100 square feet. Single-family homes require two off-street spots, and apartment buildings with more than three units must include one parking spot per unit. However, various incentive-zoning policies and special zoning districts make these requirements fungible in many circumstances.

Parking minimums began popping up in the 1920s and '30s when the availability of parking started to become a major issue in cities. These laws, which exist in virtually every city with a zoning code, have remained largely unchanged until recently, when a convergence of trends has caused cities to rethink their efficacy.

In expensive cities, the \$25,000 to \$50,000 for each off-street parking spot only serves to make housing more expensive while limiting the amount of space that can be devoted to housing. And in dense urban areas, the rise of ride-hail apps, car-share, and bikeshare, combined with good old-fashioned walking and transit, have made personal car storage a less urgent issue.

As “a fertility drug for cars,” in the words of UCLA professor and parking guru Donald Shoup, parking minimums induce demand for driving, amplifying all of the other challenges associated with cars, including traffic, safety, and greenhouse gas emissions.

San Francisco made national news last year when it eliminated parking minimums, but Hartford and Buffalo had quietly done so the year before. (Many cities have eliminated parking minimums in downtown neighborhoods and other special districts, but not throughout the entire city.)

In Sandpoint, Idaho, the developer of a three-story office building realized it would be more cost effective to buy and demolish neighboring historic commercial buildings to accommodate the project's required 218 off-street parking spaces than to include them in the new building, according to the organization Strong Towns. The events in Sandpoint caused the city to revise its parking minimums, enabling at least four new developments that would not have been allowed under the previous rules.

Performance zoning (see *Floor area ratio*)

Planned unit development (PUD)

Planned unit developments are developments that are not subject to standard “by right” zoning, but are allowed greater flexibility by the local government. Developers may submit a project as a PUD to be able to build more densely or on a challenging parcel of land, in exchange for providing community benefits such as affordable-housing units or a park. In Washington, D.C., PUDs have taken off in recent years, and so have lawsuits aiming to block them.

S

Setback

Setbacks are the minimum distance a structure must be from the edges of the property line. Not to be confused with setbacks as an architectural element (like those that became popular in New York City following its 1916 zoning ordinance), setbacks in zoning parlance are a key part of the ground-level experience of the city. Setbacks provide a sense of uniformity to a city block, and ensure that windows receive adequate light and air.

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As is the case in many jurisdictions, Santa Clara County, California's setback requirements include exceptions for elements like awnings, bay windows, decks, basement light wells, and ADA-accessible infrastructure. R1 single-family home zones with 5,000-square-foot lots in unincorporated Santa Clara County or in cities without their own zoning ordinance have front and rear setbacks of 25 feet apiece, and side setbacks of five feet.

Spot zoning

Spot zoning is a negatively charged phrase that refers to a rezoning for a particular parcel or project that does not conform to a city's zoning code. It gives developers a way around the long and arduous process of changing the zoning ordinance. Critics see spot zoning as a corrupt strategy to bypass traditional planning processes and provide special advantages to favored developers. Instances of spot zoning have often been successfully challenged in court, according to Hirt: Legislators have to prove that such zoning changes are in the public interest, and must be compatible with the existing zoning code in its impact on the community, if not according to its design specs.

U

Upzoning

Upzoning is the rezoning of land to allow for more intense use (e.g., a higher FAR) or a change in use (e.g., from residential to mixed residential/commercial). It is often framed as a strategy to combat exclusionary zoning. Minneapolis eliminated R1 zoning in its 2040 plan, allowing residential buildings of up to three units in all residential areas, and Oregon just passed a similar statewide law. California's SB50, an upzoning bill that prioritized transit and employment hubs for more density, stalled out in the state legislature this May. (Want less density? That's downzoning.)

V

Variance

A variance is a zoning change that is granted to a developer by a government body on a discretionary basis, often following public hearings. Developers might ask for relief from certain requirements, citing project-specific financial or practical difficulties. Variances are often related to architectural details. One Chicago apartment developer recently requested a variance to exceed the parcel's height limit by 6 feet to include higher ceilings in the five floors of apartments below.