

Japanese Zoning and Its Applicability in American Cities

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# **1. Introduction**

## **1.1. Project Description and Purpose**

Zoning codes are the direct expression of a city's desired land use development pattern, and are one of the most influential forms of regulation in determining how cities came to be in their present forms and how they will change in the future. Zoning codes vary widely in what and how they regulate land use, from traditional zoning that dictates use and form, to newer "form-based" codes which are primarily concerned with creating a coherent urban structure between buildings and the public realm.

Far from only influencing the form of cities, zoning codes can have immense influence in economic factors at the heart of cities. In restricting the uses, forms, and intensity of development, zoning has the power to drastically affect the cost of living in cities, specifically in controlling how much housing can be built, which directly affects its cost. In cities where zoning limits the amount of residential construction allowed, the demand for housing can quickly outstrip the supply, inflating costs dramatically as seen in cities such as San Francisco and Los Angeles. All over the United States, housing prices in desirable cities have skyrocketed, while the most affordable places to live are in sprawling suburbs where housing (and the land to build it on) is abundant and costs are low.

However, there are ways of regulating land use that permit enough development to keep cities affordable to live in, while ensuring that such cities remain desirable places to live. One such way is the system of land use planning and zoning that regulates Japan's cities and urban areas.

This senior project consists of a background report and a staff report (appendix). The background report first describes the history of U.S. zoning, then how Japanese land use planning and zoning works, particularly in the creation of dense, mixed-use neighborhoods. This report reviews the implications for affordable housing of Japan's approach to zoning. It examines the cities of Tokyo and Los Angeles as case studies in the practical application of zoning. The report reviews Japanese practices of mixed-use, building coverage ratios, floor-area ratios, and slant plane restrictions in comparison to the U.S. practices of single-use zones, large lot setbacks, minimum lot sizes, and prescribed height limits. The report then reviews areas within the Wilshire Community Plan of Los Angeles which may be suitable for the application of Japanese zoning practices. The recommended zoning changes will increase the density in specific neighborhoods by allowing an increase in residential construction, which will help alleviate the problem of unaffordable housing caused by an insufficient supply of housing.

The information covered in the background report is summarized into a staff report, which makes recommendations to the Los Angeles' Planning Commission. The staff report was undertaken as an exercise in producing professional quality work, as if I was working for the City of Los Angeles. The staff report reviews specific changes in the zoning code to identified areas within the Wilshire Community Plan. The purpose of these changes is to increase residential density in the Wilshire Community Plan area while still providing a high quality of life for residents. The efforts to increase density offer an opportunity to provide additional affordable housing in an area of the city that has a demonstrated need for increased residential development.

## **1.2. Project Methodology and Research Approach**

This project started with the goal of finding ways to improve housing affordability in California, particularly in the Greater Los Angeles region. In searching for cities which have succeeded in remaining affordable for residents while still responding to high levels of growth, it was apparent that Japan and its largest city Tokyo are a great case study as they have been largely successful in growing and providing high density, mixed-use urban environments while remaining affordable.

A literature review was conducted on the history and current state of zoning in the U.S. and California, to understand some of the reasons why zoning in the U.S. hasn't succeeded at allowing affordable, high density, mixed-use urban environments. The literature review produced questions and criteria used to judge the effective of zoning (or lack thereof) at allowing the aforementioned urban environments to exist. The criteria are:

1. How zoning regulates use:

If dense, mixed-use, and affordable cities are to be created, zoning must allow a mix of uses in each zone.

2. How zoning regulates form:

In regulating a building's form, requirements must be flexible to accommodate a variety of types of buildings and shapes.

3. How zoning regulates performance:

The performance requirements in zoning ordinances should be limited to those that are necessary, and any performance requirements should be carefully tailored to ensure they do not become a hindrance to new development.

The criteria are then used to analyze the successes and failure of zoning and its practical application in the case studies of Tokyo and Los Angeles. After identifying the successes of Japanese zoning practices at creating affordable, high density, mixed-use urban environments, areas within the Wilshire Community Plan of Los Angeles are identified which are suitable for the application of this type of zoning. The criteria used to identify areas of Wilshire which Japanese zoning practices can be applied to include:

1. Is density desired?

Zoning strategies to increase density should only be applied where increased density is desired. The first way to assess whether density is desired in a certain area is looking at applicable goals, policies, objectives, and implementation measures in the Wilshire Community Plan. Another way of assessing whether density is desired is by looking at the actual conditions of the urban environment in question.

2. Does the infrastructure support increased density?

Increases in density should not be allowed where infrastructure does not exist to support greater concentrations of people and all the required services which accompany them. Streets must be appropriately wide (number of lanes), and public transit service is necessary to support increases in traffic related to increasing density.

3. Are adjacent uses compatible with an increase in density?

Increases in density must be appropriate with their surrounding contexts. This criterion relates back to the hierarchy of uses described in both cumulative zoning and Japanese zoning. Some uses are more suitable for increases in density (apartments) while others are to be protected from increases in density (single family homes).

4. Does a mix of uses already exist?

Areas of the City where a mix of uses already exists are more suitable for increases in density because of the inherent relationship between mixed-uses and density: each creates better urban qualities of life when they are supported by one another. Existing uses can be determined by examining relevant plans as well as looking at the actual uses on the ground.

A staff report, presented to the Los Angeles City Planning Commission, recommends changes in Los Angeles's zoning follow Japanese zoning practices in identified areas of the Wilshire Community Plan. Implementing these recommended changes would result in lower housing costs, while also creating dense, mixed-use neighborhoods.

## **2. Background Report**

### **2.1. Zoning in the United States**

#### 2.1.1. History of Zoning in the United States and California

Zoning in the United States arose out of the problems cities were facing due to the simultaneous industrialization and urbanization of the country. In 1800, 73.7% of the total labor force worked in agriculture; just a century later that percentage decreased to 40.2% (Lebergott, 1966). Only 6.1% of the nation's population lived in urban areas in 1800; by 1900 that percentage had grown to 39.6% and was rising at a rate of about 5% per decade (United States Summary: 2010 Population and Housing Unit Counts, 2012). Regulations were put into place to help protect the safety of the public and residents from land-use issues related to the location of factories and housing.

Los Angeles's Progressive-dominated government imposed one of the nation's first wide-ranging zoning ordinances in 1909 – an ordinance that sought to restrict industrial uses to only four districts in the city. The United States Supreme Court upheld this ordinance against intense attack in 1915. A brick-maker whose operation predated the zoning ordinance, had unsuccessfully challenged his prosecution under the ordinance. (*Hadacheck v. Sebastian*, 239 U.S. 394 (1915)).

The Los Angeles ordinance, though it covered much of the city was not comprehensive. The first comprehensive city-wide zoning ordinance in the nation was adopted in New York City in 1916. These regulations were primarily concerned with building height and its relationship to surrounding buildings, residences, and public spaces (New York City Planning Department, n.d.). The construction of the 40-story Equitable Building in 1915 dwarfed the neighboring buildings at the time, blocking views, windows, and sunshine (Landmarks Preservation Commission, 1996). The new regulations limited the height of buildings and required setbacks which increased with height to allow sunlight to reach neighboring buildings and streets.

During the 1910s and '20s, zoning took hold as an idea not just in New York but in most major American cities (Fulton & Shigley, 2005, pp 50). The boom began after the National Conference on City Planning in 1913, which published several model ordinances for states and localities to follow. In the 1920s, under the leadership of Commerce Secretary Herbert Hoover, the federal government proposed two pieces of model legislation that proved to be of great importance: the Standard States Zoning Enabling Act (SZEA) in 1922, and the Standard City Planning Enabling Act (SPEA) in 1928. These were not laws but merely publications laying out model ordinances and laws that states and localities might implement or adapt. But especially because of the involvement of the then-esteemed Hoover, the model laws stamped the federal government's symbolic imprint on the idea of creating comprehensive plans and zoning ordinances.

SZEA sanctioned the idea of local governments dividing territory into zones, with uniform regulations in each zone – a key characteristic of what later became known as Euclidian zoning. SPEA created a model ordinance dealing with what today's Californians would call the general plan process – powers of a planning commission, content of the plan, and so on – as well as a municipality's subdivision powers.

These two models created a tidal wave of activity in state legislatures and local governments throughout the country (Fulton & Shigley, 2005, pp 51). Using SZEAs as the framework, state legislatures passed their own enabling legislation, formally confirming that local governments' police powers extended to zoning. In response to SPEAs, many states also passed planning laws, encouraging or requiring local governments to draw up comprehensive plans. According to one estimate, the number of cities with zoning ordinances grew from eight in 1916 to more than 800 in 1930.

In 1926, the landmark Supreme Court Case *Village of Euclid, Ohio v. Ambler Realty Co.* affirmed the legality of zoning ordinances in the United States (*Village of Euclid v. Ambler Realty Co.*, 1926). In the village of Euclid, Ohio, a suburb of Cleveland, a developer named Ambler Realty owned 68 acres of land they intended to develop. The village of Euclid enacted zoning laws to curb the spread of industrial development from Cleveland into Euclid, which prevented Ambler Realty from developing their property for industrial uses. Ambler Realty sued the village, arguing that the zoning laws reduced the value of their land, which meant that Euclid deprived Ambler's rights to liberty and property without due process.

After the lower courts ruled in favor of Ambler Realty, the case moved to the Supreme Court. The Supreme Court ruled in favor of the village of Euclid, stating that the zoning ordinance was not an unreasonable expression of the village's police power. The Court's decision is littered with remarks that seem to reveal a certain prejudice against the lower classes and sympathetic attitude toward keeping them out of the suburbs. In their opinion, the justices attribute nerve disorders, street accidents, and assorted other social maladies to apartment life, and call the apartment house "a mere parasite, constructed in order to take advantage of the open spaces and attractive surrounding created by the residential character of the district" – as if only single-family neighborhoods, and not apartment blocks, could be deemed residential.

The direct effect of this ruling was that zoning ordinances were now legal throughout the country for state and local governments to enforce as extensions of their police power to create regulations that promote and protect the health, safety, and welfare of the population. The ruling also helped legitimize zoning's hidden and somewhat elitist agenda (Fulton & Shigley, 2005, pp 54). The U.S. Supreme Court reaffirmed the belief that the single-family home provided a particularly healthful way of life, and that single-family neighborhoods (and their property values) were singularly entitled to legal protection. After a clarifying ruling two years later, the Supreme Court departed from the land use scene for almost 50 years returning to deal with the issue of takings only in the 1970s and '80s. In the meantime, affluent suburbanites used zoning aggressively to reinforce the social values the Supreme Court has laid out in *Euclid*. In the 1920s the use of zoning was already spreading rapidly throughout the country, and the ruling of *Village of Euclid, Ohio v. Ambler Realty Co.* only accelerated its spread, giving planners and land use lawyers the tools and legal basis to apply zoning ordinances throughout the country.

While SZEAs and many state enabling acts called for zoning ordinances to be prepared "in accordance with a comprehensive plan", the power of zoning was, characteristically, usurped for whatever purpose the local economic and political elite had in mind (Fulton & Shigley, 2005, pp 55). In Los Angeles during the 1920s and '30s, when frenetic subdivision of land lowered property values, the Board of Realtors used zoning aggressively to encourage "quality" development as a



means of propping up values. Big-city political bosses quickly recognized zoning's value in rewarding or penalizing developers, depending on their political loyalties. In the suburbs, the emergence of the special permit, sometimes called the conditional use permit, allowed local governments to deny a landowner permission to build even if the project otherwise met all legal requirements. This additional discretionary power was used frequently against supposedly undesirable land uses – however they might be defined by a particular local government.

In California, planning and zoning laws moved along faster than in the rest of the country, partly in response to rapid growth. California had entered the land use field some 20 years earlier in 1907, when the legislature passed the first Subdivision Map Act. But like other states, California did not pass the first laws dealing with planning and zoning until the 1920s. In 1927, just prior to the issuance of SPEA, the state legislature passed the first law authorizing cities and counties to prepare “master plans”. Two years later, shortly after the issuance of SPEA, the general plan law was amended to reflect its provisions. Most significantly, any city or county that has established a planning commission, as SPEA had called for, was now required to prepare a general plan. In 1937, the state amended the law again to prepare general plans.

When the postwar prosperity led to the construction of massive housing tracts in the suburbs, however, one early tenet of zoning fell by the wayside: cumulative zoning (Fulton & Shigley, 2005, pp 56). In its place, planners created “exclusive” zoning, a system that permitted only a single use in each zoning district. Just as only single-family homes could be built in single-family zones, now only industrial buildings could be built in industrial zones, or apartment buildings in apartment zones.

In the same way that an earlier generation of zoning laws had reinforced the idea that single-family living was a superior way of live, exclusive zoning cemented in the public consciousness the notion that any mixing of land uses was unhealthy. In the postwar era, suburban jurisdictions throughout the country were able to use their zoning powers – along with these two widely accepted principles of planning philosophy – to create “exclusionary” zoning policies. Large lot requirements, setback standards, and a general reluctance to zone land for anything other than single-family residential use ensured that teeming cities would not spill over into affluent, pastoral suburbs.

During the postwar construction boom, however, California's system of planning and zoning was hard-pressed to keep any semblance of control over growth. This growth was driven in large part by a booming economy, rapid population increases, and pent-up demand for housing from the Depression and World War II. But it was also driven by several other important factors, including the construction of the statewide freeway system and the emergence of mass-produced housing.

The problems in the planning of postwar growth, including: the fragmentation of growing communities into small suburban municipalities, and the increasing competition among local governments for new development, began to reveal themselves during the growth boom of the 1950s and 1960s, when many landowners engaged in leapfrog development. Planning reforms would follow in the next decades, responding to development issues, citizen's concerns, the environmental movement, and fiscal problems (Fulton & Shigley, 2005, pp 57).

### 2.1.2. Euclidian (or Single-Use) Zoning

Although the zoning ordinance of Euclid, Ohio, did not exactly take the form of its namesake, as a legacy of the landmark Supreme Court decision, the typical form of American zoning became known as Euclidian zoning. Also referred to as single-use zoning, this type of zoning divides the land within a city or county into “zones”, and each type of zone specifies a single allowed type of use within that respective zone. The most common types of zones include residential, commercial, and industrial.

As the use of zoning ordinances spread across the nation, the number of land-use zones greatly increased in part to deal with the extraordinary complexity and variety of land uses (Hirt, 2014). The residential zone began to be split up into subtypes such as single-family and multi-family. Eventually those subtypes were split up into even more zones: single and multi-family residential became categorized by density (i.e. low, medium, and high density residential). Commercial zones were also split into multiple categories including office, retail commercial, and neighborhood commercial, among the most popular. New types of districts were added to zoning ordinances that dealt with uses outside of the typical residential, commercial, and industrial uses. Common types of districts include public districts, historic districts, parking districts, downtown districts, university districts, and institutional districts.

As a result of this complexity of land-use zones, cities and counties gained fine-grained control over what types of uses were allowed in the entirety of land under their jurisdictions. Frequently, uses were separated and segregated from each other, as zoning ordinances most commonly allowed only one type of land-use per zone at the exclusion of all others. For example, the city of Los Angeles has eight major zone types split into 46 different zones, as well as seven height districts into which each of the zones is placed, and 11 supplemental use districts (Los Angeles Department of City Planning). For a more in-depth explication of land use planning and zoning in Los Angeles, please refer to Section 3.4.

### 2.1.3. How Zoning Works in California

In California, zoning functions as a way of implementing the vision of development put forward in cities and county’s general plans (Office of Planning and Research, 2003). The goals and principles of general plans are supposed to be translated into parcel-specific regulations by the zoning ordinance (Fulton & Shigley, 2005, pp 127). Zoning ordinances classify land uses in a way that directly regulates what types of uses and the form they take, are allowed in a city. In this way, they are the immediate reflection of a General Plan’s Land Use Element.

To be constitutional, a zoning ordinance must serve to protect the public health, safety, and welfare, and it cannot be arbitrary or capricious. A zoning ordinance must be both comprehensive and fair. Comprehensiveness means the ordinance must cover every piece of property within the jurisdiction, while fairness means each piece of property within the same zone must be treated alike.

Zoning ordinances regulate land uses by dividing a city and the specific parcels of land within the city into “zones”. The typical zoning ordinance is a set of regulations that prescribes or restricts

what landowners can do with their property. Usually regulations have three dimensions: use, bulk, and impact or performance (Fulton & Shigley, 2005, pp 128).

For each zone, the types of uses that are allowed, not allowed, and may be conditionally allowed are specified. Each piece of property falls into a use district, which restricts the type of development that may be built there. Common use districts include: single-family residential, multi-family residential, neighborhood commercial, regional commercial, industrial, and agricultural.

As well as regulating use, zoning ordinances typically include requirements such as minimum lot size, building height and setback limits, and floor-area ratios, that specify more directly the types and forms of uses allowed in each of the zones (Hirt, 2012). These requirements create an “envelope” within which any building must fit (Fulton & Shigley, 2005, pp 130). For example, single-family residential zones in Los Angeles require front yards 20% lot depth; 20 ft. max., back yards of at least 15 feet, setbacks from the property line on either side of the house 10% of the lot width, and a building height of no more than 45 feet. The landowner or developer must construct a house within the resulting envelope.

Building envelopes vary from use to use. Pedestrian-oriented retail districts may not need setbacks and may even require buildings to run from lot line to lot line and up to the sidewalk. However, industrial zones often specify a maximum lot coverage so that factories are buffered from surrounding neighborhoods, and increasingly commercial and multi-family districts have similar requirements. In many communities, maximum lot coverage restrictions dictate a low-density, auto-oriented land use pattern.

The last set of requirements in a typical zoning ordinance try to regulate how a building will perform in the context of its neighborhood. These requirements seek to minimize the negative side effects a building and its uses will have. The most common of these types of regulations include parking requirements, fence heights, and landscape requirements. Cities typically require a varying amount of parking be provided depending on the intensity of the use; single-family residential zones may require one or two parking spaces per lot, while office uses may require four spaces per one thousand square feet of space (Fulton & Shigley, 2005, pp 131).

In California counties, general law cities, and charter cities with a population of more than two million, zoning ordinances must be consistent with the general plan (§65860). Charter cities with populations under two million are exempt from this requirement unless their charters require otherwise.

There are several zoning related tools that California cities and counties can utilize to better achieve the vision laid down in their General Plans. Zone changes are the obvious method of permitting a project that otherwise would not be allowed (Fulton & Shigley, 2005, pp 134). Zoning changes are legislative in nature, and must be approved by the city’s legislative body after a public review. They are subject to initiative and referendum, as well as the provisions of CEQA. In the past decades, zoning changes have become more legally vulnerable. In the case of spot zoning, all parcels in a zone have not been treated alike. The strengthened legal status of general plans has meant that zoning changes which create inconsistencies with the general plan are legally

vulnerable – often necessitating that zoning changes and general plan amendments be processed together to avoid inconsistencies.

Variances are permits which allow landowners to do something they wouldn't otherwise be allowed to do (Fulton & Shigley, 2005, pp 135). Traditionally, zoning has encompassed two types of variances: “use variances”, which permit an otherwise acceptable use on the property without changing the zone, and the “variance from standards”, which permits the landowner to construct a building or open a business without having to comply with the standards required of other landowners in the same zone.

Conditional use permits (CUP) are discretionary permits that allow cities or counties to allow uses that would otherwise be prohibited by the zoning ordinance under certain specified conditions. The basic goal of a CUP is to permit the full range of land uses required for a community to function, while still giving the community some control over individual situations that could cause conflict (Fulton & Shigley, 2005, pp 137).

Many cities implement some way of reviewing the design of buildings and developments before they are approved. Often called Design Review Committees or Architectural Review Committees, these committees review the aesthetic qualities of projects to ensure they are compatible with the existing surrounding building forms as well as the desires of the community.

Planned unit developments (PUD) and specific plans are tools used to plan over larger areas or large new developments where standard zoning may not be adequate and the realities of the project require more flexible, fine-grain control. The zoning regulations on these types of sites still must be consistent with the general plan, but are not necessarily held to the same exact regulations in already existing zoning codes. These types of developments often feature uses and types that are not typically found in a city's zoning ordinance, such as mixed-use zones, specific design guidelines, and unique densities.

There are also ways for zoning ordinances to deal with more specific land-use issues that may not fit easily within the established zones. Floodplain zones can be created to restrict development within floodplains to avoid obstructing flood flows and placing buildings and people in harms ways. Hillside development ordinances are often implements in hilly or mountainous areas to regulate development on steep slopes to protect views and ensure the safety of hillside development. Additionally, overlay zones may be created to establish additional requirements over multiple zones in a specific area. These often include historic districts, airport zones, and floodplain regulations.

#### 2.1.4. Problems of Euclidian Zoning

##### *Segregation of Uses:*

From the beginning, most zoning ordinances in the U.S. shared a common goal: the preservation, above all else, of the single-family neighborhood (Fulton & Shigley, 2005, pp 52). All early zoning ordinances called for a separation of land uses, but the system, called cumulative zoning, was really a pyramid, with industrial property at the bottom. Any land use zone could accommodate uses above it on the pyramid, but not those below. Thus, anything could be built in industrial zones:

commercial development, apartments, even single-family houses. In commercial zones, located just above industrial on the pyramid, anything could be built except industrial buildings. At the top of the pyramid stood the single-family zones, which permitted no construction of any kind except for single-family zones.

The status of the single-family neighborhood as an inviolable social institution – even as all other land uses are subject to change and encroachment – remains with us today, not only in the wording of zoning ordinances but also in the psychology of the homeowners, developers, planners, and politicians who work with zoning every day. Zoning succeeded in being used by single-family homeowners (then a small minority of the overall population) and residents of affluent suburbs to exclude others from their neighborhoods.

One of the most widely discussed problems of single use zoning is that by segregating land uses, it creates or induces sprawl (Hall, 2007). Sprawl occurs when single use zoning (along with low densities), necessitates that development be spread out over large amounts of land, such that the development of a city is oriented around the automobile (the term “sprawl” originates in the way this type of development seems to “sprawl” out across land). In the years since the term “sprawl” was first coined by the American planner Earle Draper in 1937, the concern over the consequences of sprawl has only grown (Black, 1996). Local laws, ballot measures, and even best-selling books have all focused on combating urban sprawl in some way (Samuel, 1999).

Sprawl has had devastating consequences for health of our natural environments as well as the sustainability of our civilization. Nechyba and Walsh (2004) identified the loss of open space and pollution as two of the main four issues associated with sprawl; a third issue is unproductive road congestion, which only exacerbates pollution. Sprawl has eliminated a countless amount natural environments and ecosystems (Bica & Belci, 2014), in addition to the measurable increases in air and water pollution, and energy use (Ewing & Rong, 2008), caused by widespread decreases in housing density (Rog, 2010)

The consequences of sprawl are not only that it is ecologically destructive, but that it creates the opposite of high quality places to live. Sprawling cities with streets filled with vehicular traffic and land uses that discourage walking as a viable mode of transportation have been shown to decrease the quality and number of outdoor activities (Gehl, 2011). They have also been shown to have negative impacts on public health, including increased air pollution, lower levels of physical activity, increased levels of stress, and a loss of social capital (Frumkin, 2002). Yanos (2007) describes the devastating effects sprawl has on the mentally ill, who after deinstitutionalization in the 1950s and 1970s, have become reliant on their communities and neighborhoods for care in the absence of continuously supervised care by healthcare workers.

The fluidity of today’s economy may be making use districts obsolete (Fulton & Shigley, 2005, pp 129). A wide variety of commercial and industrial uses can be practically housing in the same building. Additionally, working from home has become a more viable employment opportunity, increasing the need for commercial ventures to be allowed in residential neighborhoods.

This blurring of use districts, which could once very distinctly separate the limited number of uses which existed, reflects the current state of American society, which is moving away from a

segregation of uses. The tradition of establishing a strong set of completely different standards for each zone is being challenged. As the economy becomes more fluid and real estate in cities becomes more valuable, the pressure to break down traditional barriers between uses will only increase (Fulton & Shigley, 2005, pp 129). One criticism of traditional zoning ordinances is that they prevent innovative developers from building traditional pedestrian and transit-oriented neighborhoods.

#### *Overregulating Form:*

Regulations such as minimum lot size, building height and setback limits, and floor-area ratios, specify more directly the types and forms of buildings allowed in each of the zones (Hirt, 2012). These requirements create an “envelope” within which any building must fit (Fulton & Shigley, 2005, pp 130). While the intent of these regulations is to ensure the form and massing of buildings is appropriate for the context in which they are being built, too often these regulations are applied too specifically, or too broadly into areas of land where such requirements can be eased without harm to the local built environment. For example, a combination of low maximum building heights (two story), large minimum lot sizes, and generous setback requirements, ensure that only single-family homes can be built in zones with such regulations. Often, in suburban or urban areas, these regulations prohibit larger, more intensive buildings where wide, multi-lane streets and transit service would support increases in density.

Anas, Arnott, and Small (1998) discuss the possibility that minimum lot size zoning can be a factor in the process of excessive suburbanization. Because minimum lot size restrictions are essentially a control on population density, if they are set too high they can have the unintended consequence of adding to sprawl. This is described in Field (2001) in terms of the identity:  $A = NH * A/NH$ . This simply means that total residentially developed area,  $A$ , equals the product of the number of homes ( $NH$ ) and the area consumed by each home ( $A/NH$ ). Minimum lot size restrictions tend to increase the  $A/NH$  term, and therefore increase  $A$ .

Additionally, Geshkov and DeSalvo (2012), in a sample of U.S. urbanized areas, found that minimum lot size zoning and FAR restrictions expand the urban area. In contrast, maximum lot-size zoning, urban growth boundaries, minimum square footage limits, maximum building permit restrictions, minimum person per room controls, and impact fees contract the urban area. In the Boston metropolitan area, Zabel and Dalton (2011) found that minimum lot size restrictions can increase the cost of houses by up to 20% at the highest, that these effects spillover into nearby neighborhoods and towns, and that this increase in costs are only exacerbated over time, increasing to up to 40% after 10 years.

#### *Too Many Performance Requirements:*

The combination and interaction between the three main types of zoning requirements often greatly increases the complexity of creating a development that can conform to all the requirements while remaining a viable investment for developers (Fulton & Shigley, 2005, pp 132). Parking requirements can greatly increase the cost of development, especially in dense, built up environments. This can result in developers reducing the size of a project to reduce the associated costs of developing. Donald Shoup has written extensively about negative impacts parking requirements have on developments in his 2005 book *The High Cost of Free Parking*.

*Results of these Problems:*

Although the problems that Euclidian zoning was originally designed to fix have largely been solved, this type of zoning has created some problems of its own. One problem that has been exacerbated as general shifts in living preferences has caused a resurgence in city growth and housing demand, is that single use zoning reduces the available housing supply by (artificially) limiting the amount of housing that can be built through zoning that prevents denser types of housing from being built to meet market demand. This phenomenon can be referred to as the “zoning tax” (Glaeser, E., Glaeser & Gyourko, 2002). Excessive regulations may increase the cost of new housing by as much as 20% to 35% (Cowden, 1991). One study found that the entitlement process increases the cost of a new single family dwelling by almost \$23,000 in the Bay Area of California (Quigley, Raphael, & Rosenthal, 2008). Restrictions on permitted lot sizes have also been shown to drastically increase the cost of new housing construction (Paciorek, 2011).

While housing costs in California have risen due to a combination of many complex, interrelated factors, including booms in wealth, market bubbles, and a mismatch between what has been built and what is needed, one of the reasons housing costs have risen is sluggish housing production which has not kept up with the demand for new housing (Fulton & Shigley, 2005, pp 279-280).

In practical terms, this means that housing prices have been dramatically rising to the point where large western cities are becoming playgrounds for the rich. Between 1995 and 2015, housing prices in London and San Francisco rose by 441 percent and 231 percent respectively (Harding, 2016). In 2014, the average cost of a one-bedroom apartment in San Francisco was nearly \$3,500 per month, while nearly 70 percent of housing units were selling for more than their asking price, indicating a very strong demand and limited supply (Lind, 2014). Housing costs in cities like New York, Chicago, Los Angeles, and San Francisco have all well-exceeded the standard of 30% of household income to median gross rent (Maciag, n.d.).

While housing costs in North American cities have skyrocketed, Japan’s similarly growing urban areas have remained affordable. In the Minato-ku ward, located in highly desirable central Tokyo, the population has grown by 66% in the past twenty years, while housing prices have only risen by 45%. As a whole, housing prices in Tokyo during the past twenty years have risen by less than 10%, while the population of the city has grown by nearly 2 million (Tokyo Metropolitan Government, n.d.). The solution to North America’s housing crisis may lie in Japan’s land use regulation and zoning codes, which have permitted growth without an excessive increase in cost, while still maintaining high quality urban environments.

#### 2.1.5. Criteria for Comparison

In allowing the creation of dense, mixed-use neighborhoods with an abundant supply of housing, zoning has played an important role in creating Japan’s affordable cities. Similarly, by restricting the supply of housing via use restrictions, regulations on form, and performance requirements that increase the cost of development, zoning in the U.S. has played a role in contributing to the affordable housing crisis. In order to judge the shortcomings of U.S. zoning in comparison to what Japanese zoning does successfully, particularly regarding the creation of affordable, dense, mixed-

use neighborhoods, the following criteria are used to evaluate the three key dimensions of zoning regulations.

1. How zoning regulates use

The way a zoning system regulates use is one of the most important determinants in what is allowed to be built in a city, and the development of a city takes shape. One of the main problems of post-war Euclidian zoning is how use is regulated by allowing only one use in each zone, segregating all of the uses from each other. In its original form, zoning in the United States was “cumulative”, meaning that multiple uses were allowed in each zone as zones increased in intensity. While single-family residential neighborhoods were protected from commercial and industrial encroachment, cumulative zoning still allowed a mix of uses in commercial, industrial, and multi-family residential zones. If dense, mixed-use, and affordable cities are to be created, zoning must allow a mix of uses in each zone.

2. How zoning regulates form

Zoning ordinances regulate the form of buildings by creating an envelope on each lot upon which buildings must fit. They do this by creating requirements such as minimum lot size, building height and setback limits, and floor-area ratios, that specify more directly the types and forms of uses allowed in each of the zones. Large minimum lot sizes, large setbacks, and low maximum heights can all severely limit the density of buildings allowed in a zone. Additionally, certain combinations of these requirements can prohibit development on irregular lots which could otherwise successfully be built upon. In regulating a building’s form, requirements must be flexible to accommodate a variety of types of buildings and shapes. Increasing the flexibility of such regulations may also make the development process less expensive by ensuring projects don’t get stuck in the entitlement process over minor details, and by allowing more of a lot to be built upon, making projects more lucrative for developers where smaller projects would bring less profit with similar amounts of risk.

3. How zoning regulates impact

Regulations such as parking requirements, fence heights, and landscape requirements seek to minimize the negative side effects a building and its uses will have. However, the complexity of these types of requirements often greatly increases the complexity of creating developments that can conform to all the requirements while remaining viable investments for developers (Fulton & Shigley, 2005, pp 132). For example, parking requirements can greatly increase the cost of development, especially in dense, built up environments. This can result in developers reducing the size of a project to reduce the associated costs of developing. There should be as few performance requirements in zoning ordinances as possible, and any performance requirements should be carefully tailored to ensure they do not become a hindrance to new development.



## 2.2. Japanese Zoning

### 2.2.1. History of Japanese Land Use Planning and Zoning

Comprehensive land use planning in Japan dates to the Meiji era in the late 19<sup>th</sup> century. Following a devastating fire in 1872 that destroyed the district of Ginza, the Meiji government issued plans to rebuild Ginza as westernized “Rengagai” or “Bricktown”, designed by the British architect Thomas James Waters (Ginza in the Edo Period, n.d.). The two main goals in rebuilding Ginza were to rebuild the streets to a wider, modern standard, and to construct fireproof, western-style brick buildings. The government spent more than 3% of its national budget rebuilding the city.

The rebuilt Ginza featured main streets 27 meters wide, more than double the width of the streets being replaced, separated in vehicle lanes and pedestrian sidewalks laid with brick. The streets were lined with modern gas lamps and cherry, pine, and maple trees; new brick houses were built in the Georgian architectural style (Fig. 1). The district followed a grid layout, still seen in Ginza today.



**Figure 1: (Illustration of Ginza brickstone in Tokyo No. 2 Landmarks) Hiroshige (3rd) 1874**

Following the modern reconstruction of Ginza, in 1888 the Tokyo Urban Renewal Ordinance instituted the first comprehensive land use regulations in Japan. Then in 1919, the City Planning Act replaced the earlier Tokyo Urban Renewal Ordinance, and was the first piece of legislation to enact land use regulation nationally. The 1919 law introduced a key idea in Japanese planning and zoning called the “City Planning Area” (Tominaga, 2011). According to the law’s guidelines, there are certain areas of land which need to be adjusted, developed, and maintained comprehensively as a unified city. This is the basis on which Japanese land use planning still exists to this day.

After World War II, Japanese cities were devastated. The fire-bombing of Tokyo destroyed roughly half of the city (67 Japanese Cities Firebombed in World War II, n.d.), an area of land equivalent to the size of New York City. Many other cities across Japan experienced similar levels of destruction. Japan's cities would need to be completely reconstructed, and new plans would need to be created to do so.

Post-World War II Japanese land use regulation and zoning was heavily influenced by the American land-use regulations of that time. This was borne out of the post-World War II relationship between Japan and the United States. After Japan's unconditional surrender to the United States, American forces led by General Douglas MacArthur occupied Japan between 1945 and 1952, and enacted political, economic, and social reforms (Office of the Historian, n.d.). Among the reforms made by the occupying Supreme Command of Allied Powers (SCAP), land reform was introduced to reduce the power of rich landowners to the benefit of tenant farmers.

In September 1946, the occupying government enacted the Special City Planning Law, which included a Tokyo Special City Plan for the reconstruction of Tokyo. To finance the massive undertaking of reconstructing the capital, in June 1950 the Capital Construction Law was established making the reconstruction of Tokyo a national project. However, these two laws did not adequately respond to the growing expansion of Japan's urban development into the suburbs. The post-World War II economic boom of Japan, when GDP expanding by more than 10% per year for over a decade, led to a development boom in housing and industry. Reform would be needed to deal with this massive growth, without expanding into what little open land Japan had.

What followed was an almost entirely new approach to land use planning in Japan that still exists today. This approach embraces a regional approach to planning based on existing and future urbanization areas that transcend municipal and prefectural boundaries. The Comprehensive National Land Development Act of 1950 was enacted to guide development to keep up with the rapid economic growth of the era (Tokyo Metropolitan Government).

Many of the problems addressed in the new 1950 law were related to the problems of the Tokyo metropolitan area. As a result, capital region specific plans were written to address the specific needs of the capital region. The 1956 National Capital Region Development Act established a cross-regional, capital-region perspective on development to replace the inadequate Capital Construction Law of 1950. Many changes to this law have been made over time to respond to changes in the existing conditions of the Tokyo metropolitan area. The main problem with the previous law was that the TMG had difficulty dealing with the actual state of the conurbation of Tokyo because it had spread beyond prefectural boundaries. The new Vision for the Capital Region of 1956 embraced a land use planning strategy of one metropolis consisting of seven prefectures (Tokyo, Saitama, Chiba, Kanagawa, Ibaraki, Tochigi, Gunma, and Yamanashi). The Tokyo Metropolitan Government (TMG) further completely revised its existed urban plans; plans for parks and green spaces in 1957, expressways in 1959, and high-speed railways in 1962 were all revised with this new perspective in mind.

In 1968, the landmark national City Planning Act was enacted which still regulates land use and zoning in Japan today. Additionally, parts of the many previous plans have been kept and revised

to better address the current land use patterns and economic conditions in Japan.

### 2.2.2. How Land Use Planning and Zoning Works in Japan

Land Use planning in Japan is designated by national law, rather than strictly delegated to state and local governments as it is in the United States. The national government, under the 1968 City Planning Act, designated “City Planning Areas”, which were subject to comprehensive land use planning and regulation. The creation of the new 1968 law was prompted by the problems associated with Japan’s post-World War II economic and developmental boom. This massive development boom led to a concentrated population in urban areas, which exacerbated problems of poor infrastructure, environmental degradation, and decreased efficiency of urban functions; problems which the foundational 1919 City Planning Act and subsequent revisions were not equipped to deal with.

The objectives of the 1968 Act were:

1. To enact land use plans with legal power.
2. To ensure the supply of building lots in new urban areas.
3. To regulate and guide land use through the Land Development Permission System.
4. To clarify the cost sharing responsibility of public facilities between the government and private sector, and the promotion of public facilities development and improvement.
5. To devolve the regulating powers of city planning to local governments and introduce the democratic process to city planning.

The 1968 Plan was particularly important because it introduced the aim of realizing the “civil minimum”, a phrase used to describe the minimum level of physical infrastructure and facilities that large cities require to function adequately for residents. The 1968 Plan was also envisioned as a way of introducing the “rolling approach” to planning, an approach that entailed the regular and continual revision of plans that continues to the present (Ohsugi, 2010).

The “City Planning Areas” as designated by the new law, are the local areas which the City Planning Act and the comprehensive planning requirements apply. These “City Planning Areas” are not limited or divided by municipality boundaries as administrative units, but apply at the larger multi-jurisdictional and regional level, incorporating regional transportation planning and development, as well as projects at the municipal, prefectural, and national levels of government (Srinivas, n.d.). These areas are not strictly limited or divided by municipalities, but may extend over many to allow regional planning to be done to the extent possible (Tokyo Metropolitan Government). Figure 2 illustrates the structure of the City Planning System, starting with the designation of the “City Planning Area”. Additionally, where city plans are necessary for organizing land use outside of urban planning areas, “Quasi-City Planning Areas” can be designated to respond to these urban needs. Figure 3 illustrates how land use regulations are structured within city planning areas.

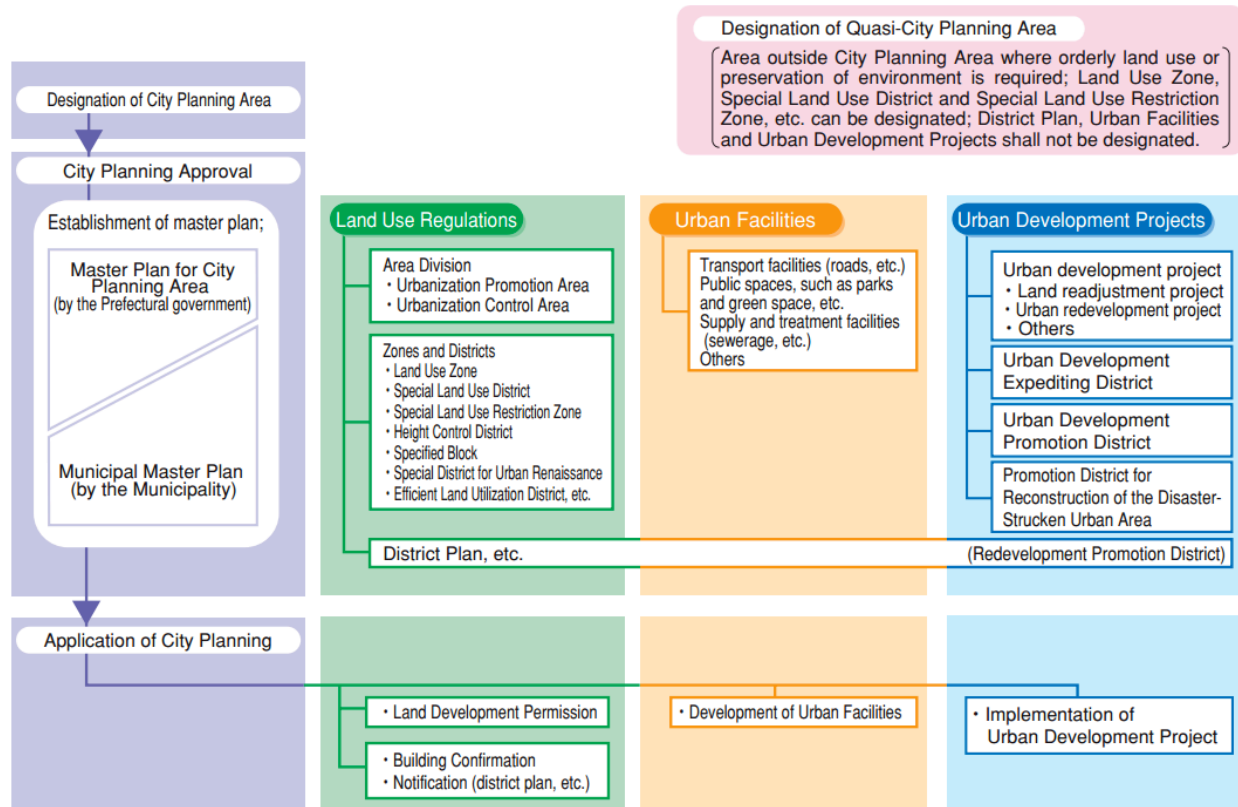


Figure 2: Structure of the City Planning System

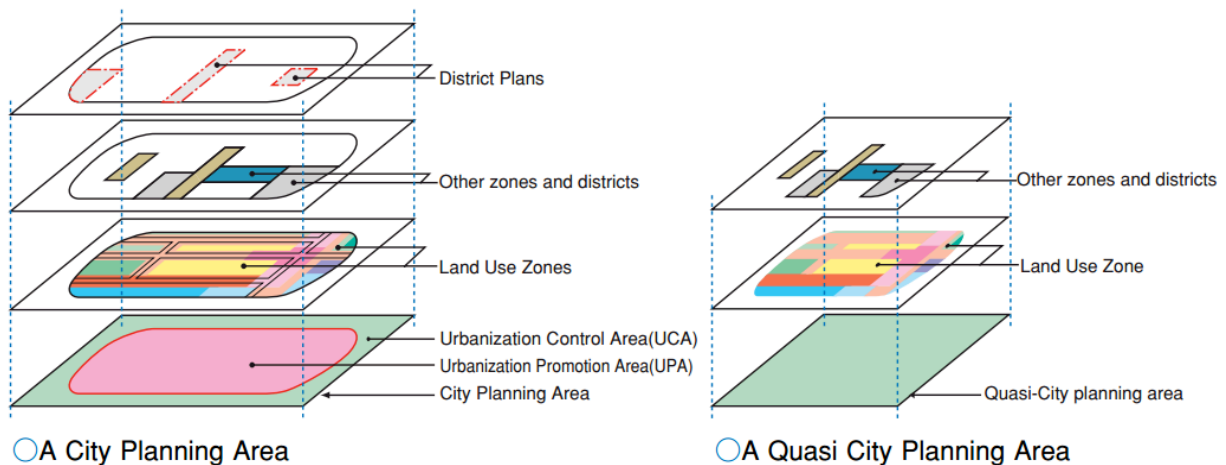


Figure 3: Land Use Regulation Structure

The specific definitions of City Planning Area are as follows:

1. It has 10,000 people in the municipality and 50% of the total employed workers are involved in commerce and industry or urban business categories
2. It can be expected to meet the preceding issue of 1. in 10 years over the pace of development and the prediction of population and industry
3. If the central area of the target municipalities has a population greater than 3,000
4. If a good tourist environment is necessary

5. If there is a need for systematic recovery after a disaster

A Master Plan sets out matters necessary for comprehensive improvement, development and conservation of a city planning area as a single city, in an integrated and comprehensive manner. The plan has the structure to clearly indicate its policy in advance by setting out the policies on improvement, development and conservation of the given city planning area and on this basis, provide for detailed individual city plans. Master Plans for City Planning Areas are required to include:

1. Whether a decision has been made on area classification, and if applicable, the decision-making policy for the said area classification
2. The goals of the city plan
3. The policy for major city planning decisions concerning land use, urban facility improvement and urban development projects

The revised Acts of 2000 entitled prefectures to decide on policies for improvement, development, and preservation of all city planning areas. The Master Plan for City Planning Areas are made by prefectures. These types of plans define the future vision of the city from a long-term perspective and the path to follow to make that vision a reality. Individual city plans such as those for use districts, city-planned roads and urban redevelopment projects is required to be set up in accordance with the Master Plan for City Planning Areas or city redevelopment policy (Tokyo Metropolitan Government).

The content of City Planning Area Master Plans includes:

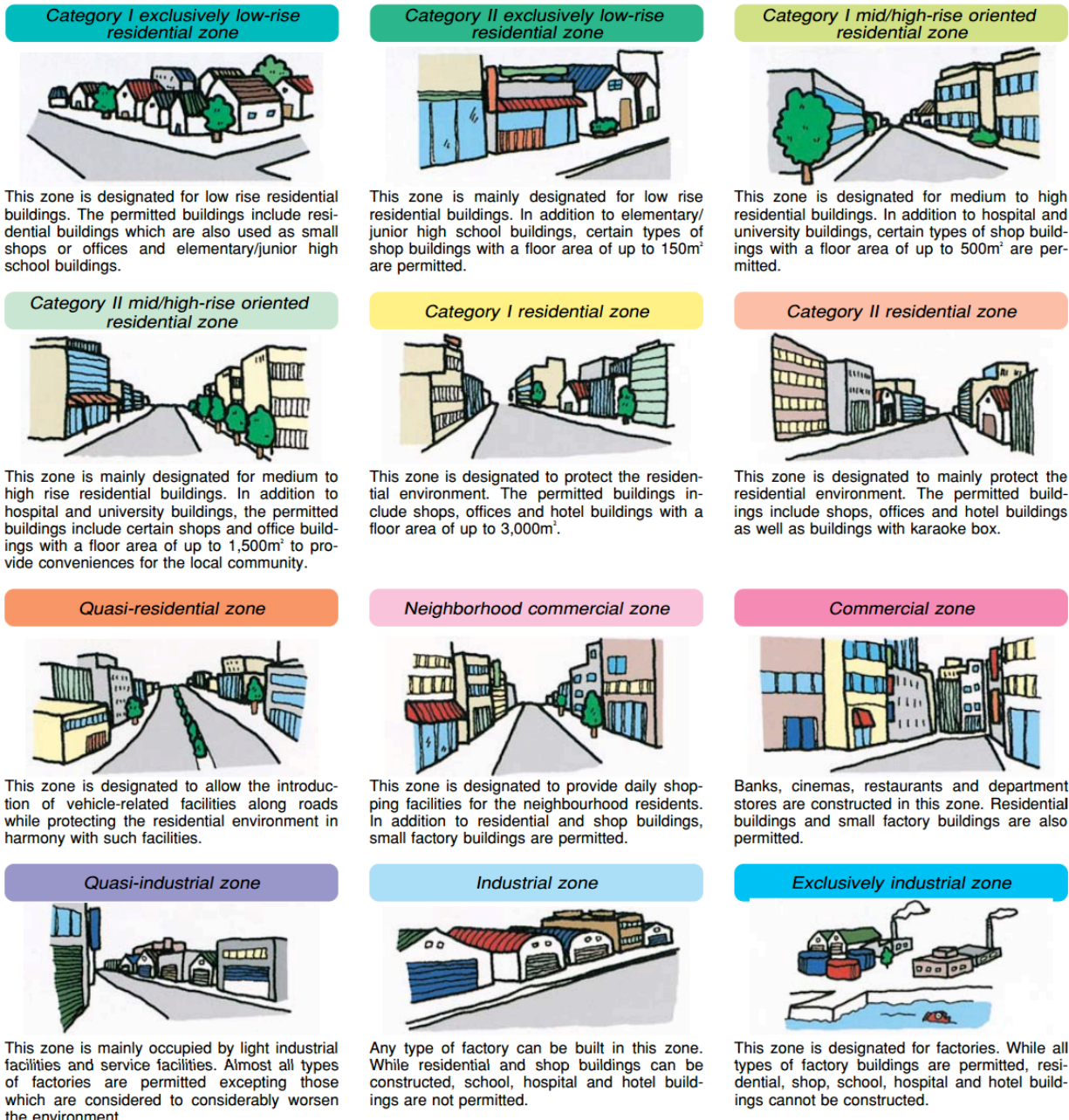
- A) The goals and basic ideas for urban development in the given city planning area and the future vision for each area, with a 20-year perspective
- B) Decisions on area classification status and the policy on area classification in approximate populations and the sizes of industry to be allocated to urbanization promotion and control areas; target years; approximate sizes of urbanization promotion areas; and the relations with areas where urbanization is currently in progress
- C) Policy for decision making on major city plans

The “City Planning Area” is separated into one of two area classifications: “Urbanization Promotion Areas” and “Urbanization Control Areas”. The urbanization promotion areas feature extensive land use planning and are designated for development, while in the urbanization control areas, development is severely restricted to only necessary or extraordinary cases for the preservation of agriculture and open space. Table 1 shows the planning and legal differences between the two areas.

**Table 1: Legal Effects of Area Division**

Item	Urban Promotion Area	Urbanization Control Area
Land use control	Land use is controlled in accordance to Land Use Districts.	Land use is regulated by agricultural plans. Land use districts are not determined.
Public investment	Public facilities such as roads, parks, sewerage, etc. are approved and public investment will be actively carried out.	Public investment for the promotion of agriculture will be actively carried out.
Urban development project	Will be actively done.	Will not be done.
Land development permission	For the development of more than 1000 sq m., approval by the prefectural governor is necessary. Technical standards need to be met.	Except for large-scale developments, which are approved in exceptional cases, the development activities are strictly controlled.
Conversion of farmland	Mere report on the conversion is necessary.	Approval from the prefectural governor is necessary.
City planning tax	City planning taxes may be collected to generate revenue to fund city planning projects.	Cannot be levied.

Zoning is the most important method of classifying land within city planning areas to carry out the types of development intended in the master city plans by imposing restrictions on buildings/structures and the uses they are intended for. The zone regulates the volume and height of buildings, as well as the use of them under the Building Standards Law. There are twelve zones (Fig. 4), as well as numerous other special use zones/districts that complement the twelve main zones.



**Figure 4: The twelve zones of Japanese land use planning**

There are three main ways zones regulate volume, height, and land use in Japan. The first are restrictions on the type of use. The twelve zones denote which types of uses are allowed and which are not allowed in each of the twelve zones. Here, the types of uses are organized in effect by nuisance or intensity level, which range from low density residential, to high density commercial or industrial. In most zones, all types of uses less intense than that of the highest nuisance level allowed, are also allowed. This essentially makes most zones mixed-use zones, as this type of zoning is cumulative rather than exclusive. The only zones where only a single land use is allowed are the exclusively industrial zone, as well as the lowest density residential zones. This is similar

to the original form of U.S. zoning which cities moved away from in the post-war period as suburban development was prioritized over urban development.

As shown in Table 2, as the intensity of the zone increases (columns to the right), lower level uses are still allowed (the upper rows). What changes in more intensive zones, is that more intense uses are allowed; this is done without adding on any other restrictions on less intense or lower level uses, which is typical of American zoning. In practice, this means that in most zones, some form of housing and commercial use is allowed (mixed-use).

One of the primary benefits of this type of zoning is a widespread mix of uses. As a mix of land uses is allowed in almost all zones, large portions of Japanese cities have a wide diversity of housing options mixed throughout neighborhoods, and most neighborhoods maintain a certain degree of walkability, even if they are not located in central cities. In even the least intensive residential zones, small corner stores and home offices are allowed. This is important because zoning restrictions on retail outlets have been estimated to reduce the total number of convenience-store outlets (Nishida, 2014). Where cities designate land for commercial uses, residential uses are also allowed, and inevitable are built in places which aren't suitable for large commercial enterprises. Overall, the potential housing density in a built-out scenario allowed by zoning regulations in Japan far exceeds that of the average American city under American zoning regulations. This widespread availability of land for housing contributes to Japan's reasonable housing costs, along with the promotion of the Japanese building industry as a driver of Japan's economy (Sorensen, 2007).

The second main way zones regulate volume, height, and land use is floor-area ratio and building coverage ratio regulations (Fig. 5). Floor-area ratio is the total floor area of a building divided by the total lot area that the building is built upon (Planning Advisory Service, 1958). For example, if a building is being built upon a 10,000 sq. ft. lot and the maximum floor-area ratio is 1.0, the largest the floor area can be is also 10,000 sq. ft. In the same lot size where the maximum floor-area ratio is 0.5, the largest the floor area can be is 5,000 sq. ft., and if the floor-area ratio is 3.0, the largest the floor area can be is 30,000 sq. ft. Building coverage ratios are the percentage of the total lot surface that can be covered or used up by a building.

Each of the twelve land use zones has a prescribed maximum floor-area ratio and a maximum building coverage ratio (Table 3). These types of regulations ensure that the mass and height of buildings is appropriate for the type of zone they are located in, while also being flexible to a variety of shapes and sizes of buildings. Generally, as the intensity of zone increases, the maximum floor-area and building coverage ratios also increase to allow taller, and bigger buildings to be built.

FAR and BCR succeed in allowing a great amount of flexibility for landowners and developers to construct buildings on their land while still limited building mass and density to levels appropriate for the local context. Setback requirements and minimum lot sizes often prohibit development on very small and irregular lots which could otherwise successfully be built upon. FAR and BCR have succeeded in Japan at allowing the use of many small and irregular parcels of land in Tokyo and other cities.



**Table 2: Control of Land Use by Zones**

							Legend:		= Can be built			= Can't be built	
Examples of buildings	Category I exclusively low-rise residential zone	Category II exclusively low-rise residential zone	Category I mid/high-rise oriented residential zone	Category II mid/high-rise oriented residential zone	Category I residential zone	Category II residential zone	Quasi-residential zone	Neighborhood commercial zone	Commercial zone	Quasi-industrial zone	Industrial zone	Exclusively industrial zone	Areas with no land-use zone designation (Urbanization Control Areas are excluded)
Houses, Houses with other small scale function (store, office, etc.)													
Kindergartens, Schools (Elementary, Junior High, Senior High)													
Shrines, Temples, Churches, Clinics													
Hospitals, Universities													
Stores (mainly selling dairy commodities)/Restaurants with floor space of 150m max. on the first or second floor												D	
Stores/Restaurants with floor space of 500m max. on the first or second floor												D	
Stores/Restaurants not specified above				A	B								
Offices, etc. not specified above				A	B								
Hotels, Inns					B								
Karaoke boxes													
Theaters, Movie theaters							C						
Theaters, Movies theaters, Stores, Restaurants, Amusements facilities and so on, with more than 10,000 m of floor area													
Bathhouses with private rooms													
Independent garage with floor space of 300m max. on the first or second floor													
Warehouse of warehousing company, Independent garage of other types than specified above													
Auto repair shop					E	E	F	G	G				
Factory with some possibility of danger or environmental degradation													
Factory with strong possibility of danger or environmental degradation													

Notes:

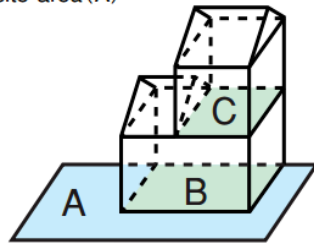
- A: Must not be built on the third floor or higher. Must not exceed a floor area of 1,500 m<sup>2</sup>.
- B: Must not exceed a floor area of 3,000 m<sup>2</sup>.
- C: Audience seating floor area must not exceed 200 m<sup>2</sup>.
- D: Stores and restaurants must not be built.
- E: Floor are must not exceed 50 m<sup>2</sup>.
- F: Floor area must not exceed 150 m<sup>2</sup>.
- G: Floor area must not exceed 300 m<sup>2</sup>.

● Floor-Area Ratio (FAR)

$$\text{FAR}(\%) = \frac{\text{total floor area (B+C)}}{\text{site area (A)}} \times 100$$

● Building Coverage Ratio (BCR)

$$\text{BCR}(\%) = \frac{\text{building area (B)}}{\text{site area (A)}} \times 100$$



**Figure 5: How FAR and BCR are calculated**

The final main way zoning regulates building volume, height, and land use is through restrictions on the shape of buildings. These restrictions limit building heights in proportion to the distance from the farther edge of the roads they face, or from neighboring lot boundaries (Fig. 6). The ratio is lowest in residential zones, and increases for other zones. These ratios can be increased or exempted from with the approval of the local City Planning Council.

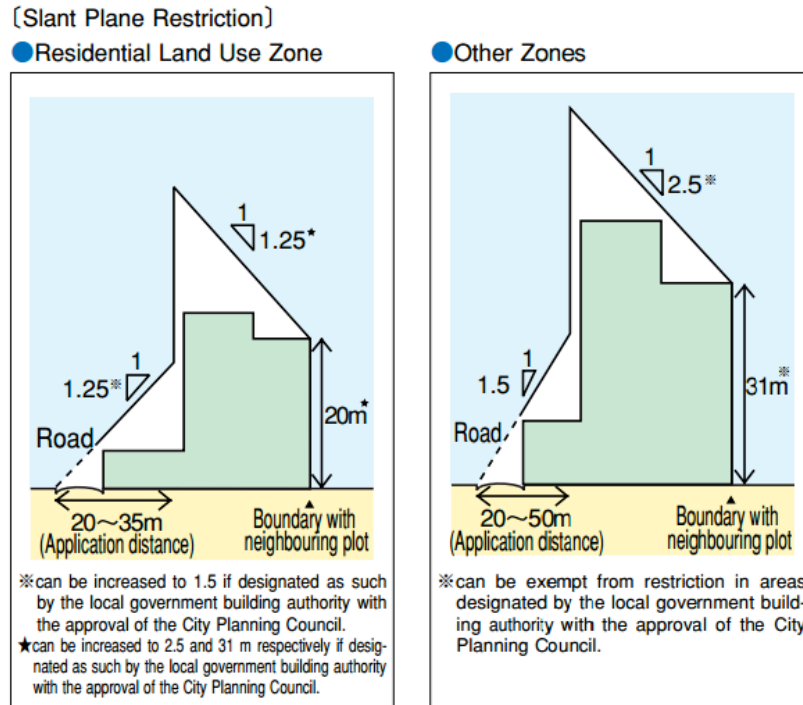
The maximum floor-area ratio of a building which faces a road less than 12 meters wide cannot exceed a value greater than the width of the road multiplied by a factor depending the zone which it is in. Typically, the factor is lowest in low-density residential zones, and increases as zones become more intensive in use. There are also regulations which limit the number of hours per day that the building may cast a shadow on other adjacent buildings. These regulations are specified by local governments in the bylaws of the Building Standard Law.

**Table 3: Maximum FAR and BCR for zones**

Category of Land Use Zone	Maximum floor-area ratios (%)	Maximum building coverage ratios (%)
Category I exclusively low-rise residential zone	50 60 80 100 150 200	30 40 50 60
Category II exclusively low-rise residential zone	50 60 80 100 150 200	30 40 50 60
Category I mid/high-rise oriented residential zone	100 150 200 300 400 500	30 40 50 60
Category II mid/high-rise oriented residential zone	100 150 200 300 400 500	30 40 50 60
Category I residential zone	100 150 200 300 400 500	50 60 80
Category II residential zone	100 150 200 300 400 500	50 60 80
Quasi-residential zone	100 150 200 300 400 500	50 60 80
Neighborhood commercial zone	100 150 200 300 400 500	60 80
Commercial zone	200 300 400 500 600 700 800 900 1000 1100 1200 1300	80
Quasi-industrial zone	100 150 200 300 400 500	50 60 80
Industrial zone	100 150 200 300 400	50 60
Exclusively industrial zone	100 150 200 300 400	30 40 50 60

Slant plane restrictions differ from maximum height restrictions because they are wholly tied to the context in which the building is located. Where maximum height restrictions are applied uniformly to each respective zone, slant plane restrictions for buildings vary only depending on the width of adjacent roads and the boundary between neighboring plots of land. This fulfills the

purpose of height restrictions – to prevent large buildings from towering over smaller buildings and homes – without going too far in limited the height of buildings where increases in height are otherwise appropriate. Prescribed height limits would only be similarly successful to slant plane restrictions if they are extremely finely tuned to the variety of local contexts in which buildings exist.

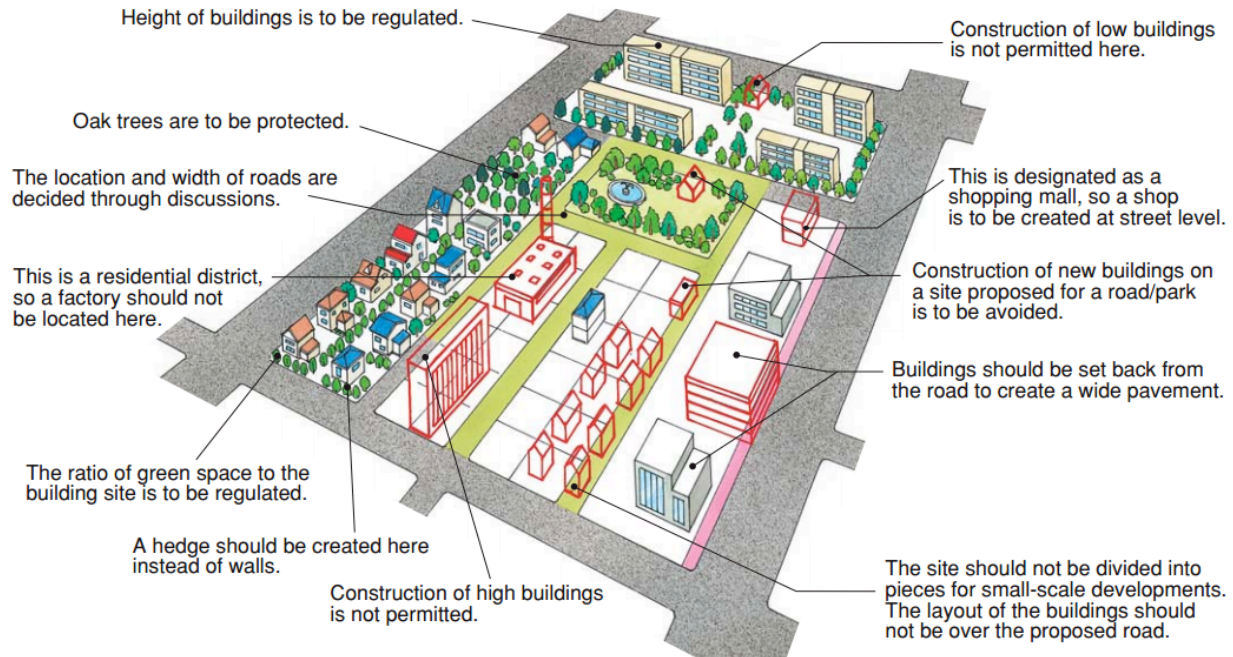


**Figure 6: Slant Plane Restrictions**

### 2.2.2.1. District Plans

Additionally, districts may be created when appropriate. Influenced by the German “Bebauungsplan” system, in May 1980 the “district planning system” was established to fill the gap between the City Planning Act and the Building Standards Act in light of the potential threats of: the deterioration of the living environment, and the disaster prevention function due to the increase in small-scale development and the underdeveloped state of narrow street networks.

The district plan is a system to set restrictions on road/park locations and buildings (Fig. 7) in inhabited areas of certain sizes in order to guide good development and the preservation of the urban environment that is suitable to the characteristics of the entire district from viewpoints of building forms and public facility locations (Tokyo Metropolitan Government). Municipalities that oversee regional administration enact district plans so that the plans adequately reflect residents’ opinions, while the prefectural governors are to give consent to certain parts of the plans.



**Figure 7: A Japanese district plan**

There are a few different types of district plans designed to serve specific purposes. In general, however, the district system can be divided into two categories of districts: control-oriented districts, and deregulation-oriented districts. Control-oriented districts, applying severe regulations, aim to create good quality urban area under a relaxed Japanese zoning system with loose regulations on building forms, while deregulation-oriented districts may be regarded as a kind of incentive zoning.

Roadside district plans are those that develop urban areas in a uniform and comprehensive manner to prevent nuisances arising from road traffic noise and to promote adequate and reasonable land use. Roadside district plans can regulate the roadsides of trunk roads (i.e. roadside development roads) that prefectural governors have designated as those that are expected to experience environmental impacts due to road traffic noise. This type of district plan sets out the roadside development policy, and allocation of buffer spaces (e.g. green spaces), which aim at the formation of buffer zones by promoting the high-level use of buildings facing the roadside while improving the sound insulation of existing buildings, as well as the prevention of nuisances arising from road traffic by allocating buffer spaces at regular intervals for noise mitigation. In addition, as exceptional measures, there can be roadside district plans which dictate appropriate building-bulk distribution type, bonus FAR type, FAR incentive type, townscape formation type and high-level use type, or those in roadside redevelopment promotion areas.

Disaster prevention block improvement zone plans are those that promote improvements in the fire-safety of each block. These district plans improve public facilities and put restrictions on building structures for fire protection within concentrated urban areas that have experienced difficulties preventing fire spreading and evacuating at the time of fire or earthquake due to the shortage of public facilities such as roads and parks.

Rural district plans promote developments with good agricultural management and high quality dwelling environments in rural areas and surrounding farmlands where there is growing urbanization and a decline in agricultural production due to cropland diversion and unregulated development.

Historic scenery maintenance and improvement district plans build towns that value the local history and traditional culture through the utilization of historic buildings for purposes appropriate to historic scenery, regardless of restrictions on use districts in urban areas, with the activities that reflect the unique history and traditions of the people and with buildings of high cultural value. This type of district plan is intended to ensure the maintenance and improvement of historic scenery and reasonable and healthy land use in areas of historic significance. Additionally, historic scenery maintenance and improvement district plans may be used in tandem with townscape formation type plans.

### 2.2.3. Problems Facing Japanese Cities

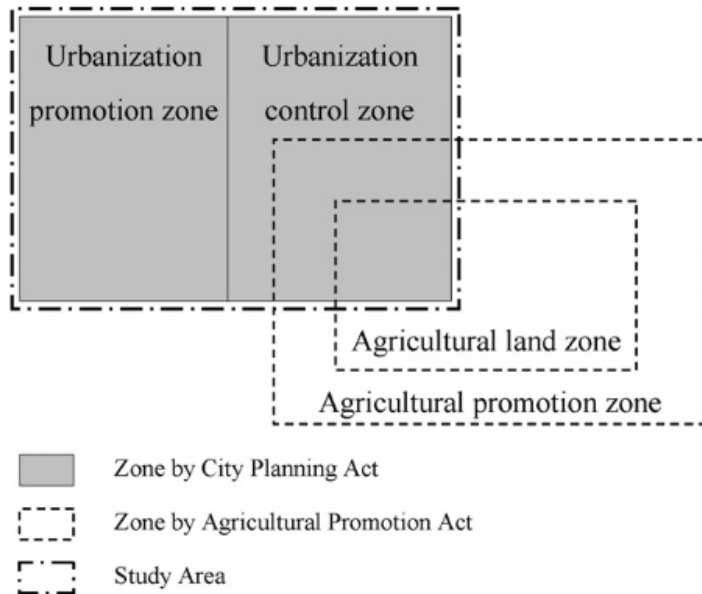
While there are benefits to Japanese style zoning, Japanese cities are not without problems. Issues that Japanese cities are facing include decrepit, low quality housing, underused and vacant land lots, sprawl, systematic issues in methods of planning.

Decrepit and low quality housing is a symptom of the need for rapid and efficient development to keep up with post World-War II growth, as well as the subsequent role of the Japanese construction industry in propping up the lagging Japanese economy of the “Lost Decade”, a long period of stagflation. Japan’s explosive post World-War II growth necessitated that housing be built and quickly and in large quantities. As a result, a tradition of low-quality (in terms of building materials and life span) was ingrained into the Japanese home building industry which still exists to this day. In Japan, it is typical that housing is built as cheaply as possible with a roughly 30-year life span. When property is bought with a house near the end of this life span, it is expected that the new owners tear it down and build a new home. Another side-effect of the need to keep up with Japan’s rapid growth is the emergence of mono-function and mega-scaled commercial environments, which many perceive to lack aesthetic quality (Ishida, 2005).

One well-reported on problem Japanese cities are facing is the phenomenon of underused and vacant land lots, particularly in central areas of cities (Abe et al., 2011). Most commonly found in the form of outdoor parking lots, material storage sites, and vacant homes and lots, the problem with this underused land is the association it has with a loss of business and commercial activity (Oba et al., 2008). Many studies have found a positive relationship in the construction of transit (i.e. rail) and a “Transit Oriented Development” approach, with rejuvenated vacant lands (increased population and commercial density) (Yokobori et al., 2006; Matsunaka et al., 2007; Ishikawa & Tsutsumi, 2006; Dabinett et al., 1999).

Despite the perception that Japanese cities are dense and compact, as well as the fact that Japan is one of the densest large nations on Earth (Statistics Bureau, 2017), urban sprawl has occurred in the urbanization control areas of many Japanese cities (Iwata & Oguchi, 2009). Coordination among different zones, particularly between urban control zones and agricultural promotion zones (Fig. 8), is often a contentious issue where competitive interests concerning land uses are found

(Hatano, 1995). Despite the designation of land on the urban fringes for conservation and agricultural purposes, a large amount of deforestation and conversion from farmland to non-agricultural uses has occurred (Saizen, Mizuno, & Kobayashi, 2006).



**Figure 8: Conflict between Urbanization control zones and Agricultural promotion zones**

Sprawl in Japanese cities has had a detrimental effect on the quality of life of many suburban households, creating a severe separation between the central city, where most of the jobs are located, and the far-flung suburban housing estates (Edgington, 1999). However, in cities such as Kyoto, the land acquisition system to preserve historical landscapes (Special Law for the Preservation of Historical Features in Ancient Capitals) has succeeded in keeping green areas surrounding the city untouched (Morimoto, 2011), resulting in residents' levels of satisfaction with greenery very high (Nagayama et al. 1992).

While western style greenbelts have generally not been successful in managing the encroachment of urban sprawl into the surrounding countryside, one possible way of controlling sprawl in Japan is to create a new preservation area within the area demarcation system (promotion and control areas) by combining the Preservation Districts stipulated in the Ancient Cities Preservation Law, the Law concerning the Preservation of Green Space in Suburban Areas of the National Capital Region, and the Urban Green Space Conservation Law. Closing loopholes which allow building in existing urbanization control zones where they conflict with agricultural promotion zones is also a way of curtailing sprawl by strictly enforcing the current system of land use planning.

Yorifusa (n.d.) has written about systematic problems in Japanese land use planning, including the lack of an institutionalized land use master plan system to present visionary perspectives on the future of land use; contradictory land use regulations; and the lack of ability to effectively manage local land use problems appropriately.

The first problem is somewhat outdated; since the 1990s Master Plans have been institutionalized as the first step in the planning process after designating a planning area. However, it may still be true that as a whole the Japanese planning process remains a practical and pragmatic one, lacking the visionary capacity seen in Western plans.

Each of the three levels (area demarcation, zoning, and districts) of land use planning in the Japanese system has the legal power to restrict urban land use. Unfortunately, as a side-effect of this, regulations and restrictions are often contradictory between levels. One example of this in practice is that the abuse of deregulation oriented district plans often make designated zoning plans meaningless.

Despite the possibility of contradictions, many scholars have argued that Japan's centralized, hierarchical development system is responsible for Japan's economic growth and spatial development patterns which have maintained large cities as vibrant places to live and work (Jacobs, 2002). One of the most important ways Japan's development patterns have differed from American development patterns, is that despite a decline in manufacturing in both nations, rather than seeing a decline and depopulation of former industrial cities like in America, Japan's former industrial cities have remained at the center of regional activity and have grown in population and economic growth.

One great example of this is the manufacturing heavy prefecture of Aichi. Aichi's largest city, Nagoya, is the fourth largest city in Japan, the home of Toyota, the world's largest car manufacturer. Despite a decline in manufacturing employment of more than 130,000 jobs between 1969 and 1996, Nagoya more than made up for this loss by gaining more than 400,000 new jobs in the same time period. Much of this growth in employment came from the redevelopment of existing sites into office and commercial uses, alongside the growth of the wholesale, retail, and service sectors. In the same time period, when industrial cities such as Chicago, Detroit, and Philadelphia's population declined by more than 430,000 residents each, Nagoya increased in population. The hierarchical consistency of Japan's land use planning system is one of the most important reasons why Japan's industrial cities have remained vibrant and livable despite losses in the manufacturing economy.

Historically, since the Japanese land use planning system is designated by national law, there have not been appropriate methods to manage local land use problems effectively. However, the more recent additions of the district system, as well as special use zones which can be applied locally, have provided local governments with better tools to deal with local specific land use problems.

## **2.3 Case Study: Land Use Planning in Tokyo**

Tokyo is governed by the Tokyo Metropolitan Government (TMG), a regional government encompassing 23 special wards, and 39 municipalities (Fig. 9); 26 cities (*shi*), 5 towns (*machi*), and 8 villages (*mura*) (Tokyo Metropolitan Government, n.d.). The administrative and financial systems for the metropolitan government and its municipalities are the same as those for other prefectures. The government and its individual municipalities work on equal footing in performing their respective functions: the former handling the broader administrative work and the latter providing services closer to the everyday lives of residents (Tokyo Metropolitan Government, n.d.). However, due to the complexities of administering a regional government over a vast metropolitan area, a unique administrative system exists between the metropolitan government and the wards, which differs from the typical relationship between prefectures and municipalities.

This system balances the need to maintain unified administration and control across the whole of the ward area and the need to have the local ward governments, which are nearer to the residents, handle everyday affairs. Specifically, in the 23 wards, the metropolitan government takes on some of the administrative responsibilities of a “city,” such as water supply and sewerage services, and firefighting in order to ensure the provision of uniform and efficient services, while the wards have the autonomy to independently handle affairs close to the lives of the residents such as welfare, education, and housing.

Plans on a national level which affect land use within Tokyo are discussed in Section 3.3.1. Local, Metropolitan level plans are detailed in Section 3.3.2.

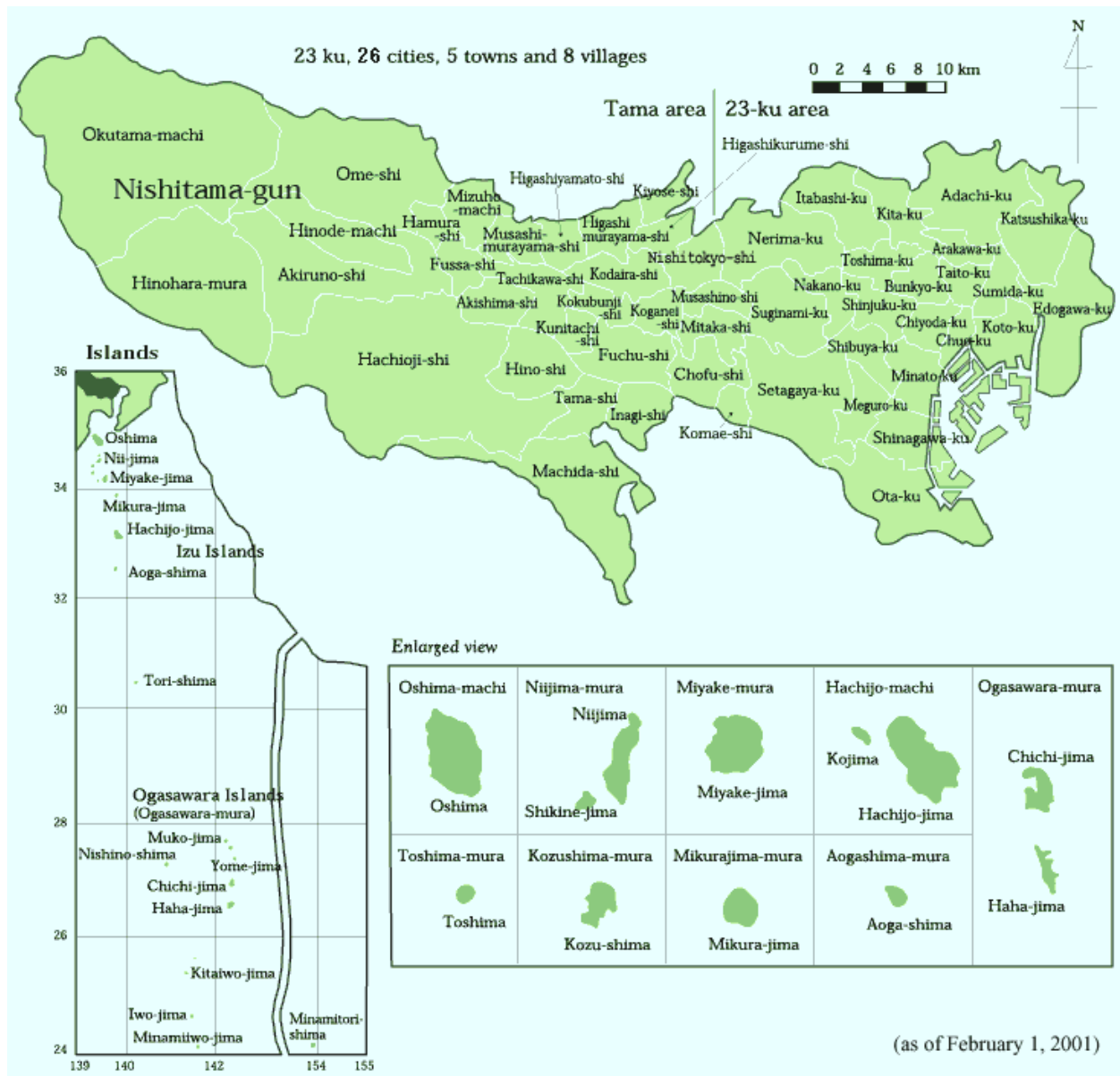
### **2.3.1. Plans at the National Level**

#### **2.3.1.1. Master Plan for City Planning Areas**

The Tokyo Metropolitan Government decided on the area classification of urbanization promotion areas and urbanization control areas in December 1970 and designated eight use districts in 1973 (Tokyo Metropolitan Government). Afterwards, against a background of social and economic circumstances as well as changes in residents' awareness, the TMG carried out the first and second reviews in 1981 and 1989. Moreover, in light of soaring land costs and falling occupancies, the City Planning Act and the Building Standards Act were revised in June 1992 to introduce more detailed subdivisions into the residential use districts and to expand the special use district system. The TMG carried out the third review in May 1996.

The area classification of the Tama City Planning Area was publicly noticed in August 1997 because it was planned to be decided simultaneously with the Area's land adjustment project that was subject to environmental impact assessment. Afterwards, the TMG Governor consulted the Tokyo City Planning Council on the “basic policy on land use in Tokyo” in October 2001 and obtained the report in March 2002. Based on this, the TMG formulated the “guidelines and standards for the designation of use districts” in July 2002 and reviewed districts, zones and use districts across Tokyo in June 2004. This review took into account the City Planning Vision for Tokyo formulated in October 2001 and responded to the partial revisions of the City Planning Act and the Building Standards Act that were enforced in January in 2003.

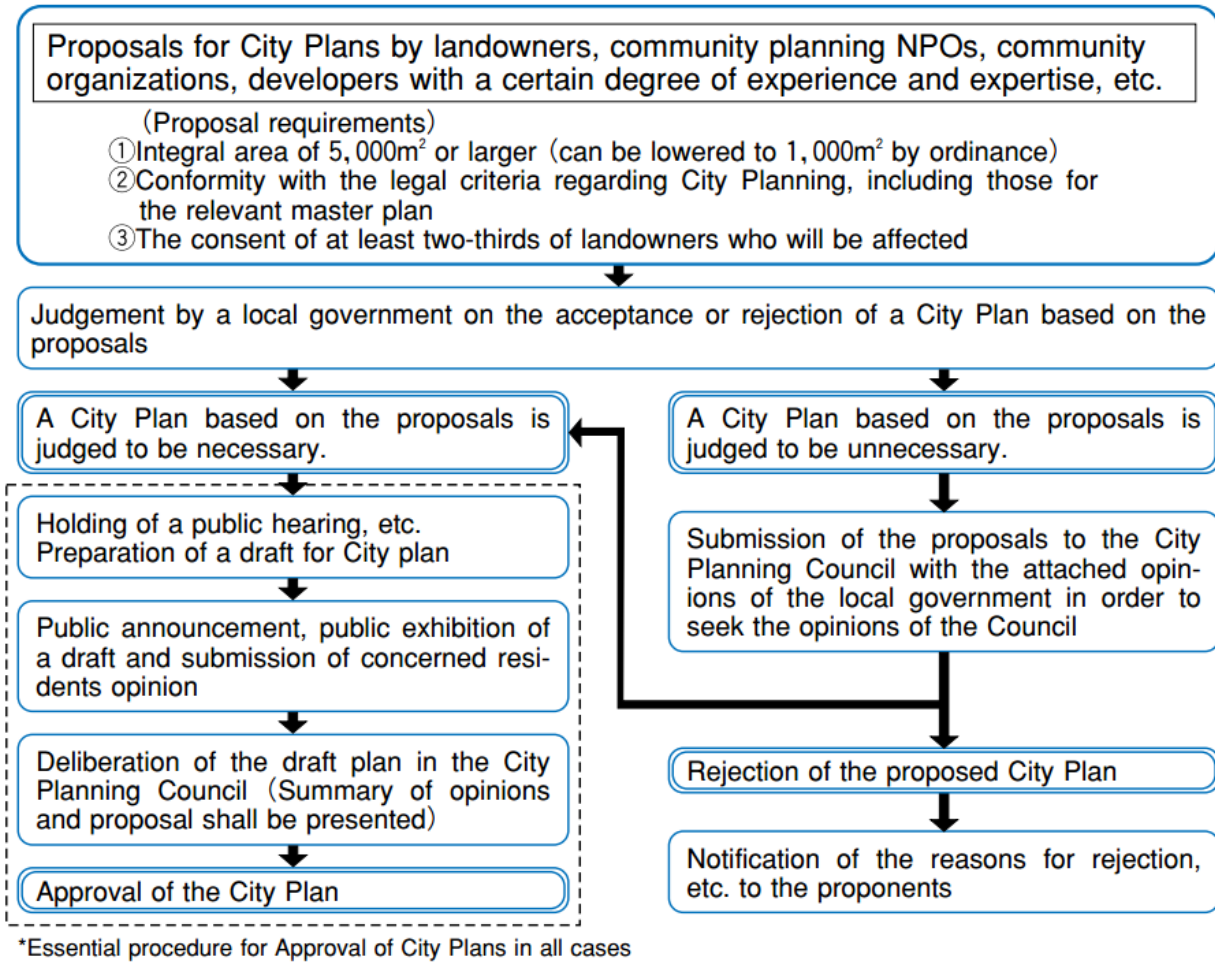




**Figure 9: Tokyo Administrative Districts**

The TMG formulated Master Plans for City Planning Areas for 25 city planning areas (except the Plan for Miyake Village that had still suffered from a volcanic eruption) in April 2004 and afterwards for the Miyake City Planning Area (Miyake Island) in March 2008. As a result, Master Plans for City Planning Areas have been formulated for all of the 26 city planning areas in Tokyo.

In the Tokyo City Plan (23 Wards), areas except major rivers (e.g. Tamagawa, Arakawa and Edogawa), river beds and sea surfaces have been designated as Urbanization Promotion Areas. Also, in the Tama area, the urban environment has been preserved by classifying it as an Urbanization Control Area in order to control the expansion of unregulated urbanization. Of the greater urban planning area of Tokyo, only 25% is designated as an Urbanization Control Area.



**Figure 10: The City Planning approval process**

The Tokyo City Plan (23 Wards) and the City Plans of 14 city planning areas in Tama area (Hachioji, Tachikawa, Musashino, Mitaka, Fuchu, Chofu, Ome, Machida, Koganei, Hino, Kodaira, Kokubunji, Higashimurayama and Nishi Tokyo) set forth “city redevelopment policies” as the master plans that organize comprehensively and on a long-term basis the urban-area redevelopment measures that are required under the Urban Renewal Act. 20 of the City Plans set forth the “policies for development of residential urban areas” as master plans for good urban development, reflecting the “Tokyo Metropolitan Housing Master Plan.”

### 2.3.1.2. Tokyo Metropolitan Government Land Use Plan

In addition to the National Land Use Plan, there is a separate TMG Plan covering the Tokyo metropolitan region. The first and second plans were formulated in 1983 and 1990, respectively. The Plan is based on the National Land Use Planning Act, which gives comprehensive and basic direction for land use planning and is positioned as a superior plan for overall coordination of various land use plans. It also provides the basis for the implementation of measures concerning land transaction control and unused land based on the National Land Use Planning Act, as well as implementation of land use planning through each control law. The Plan designates areas for urban districts, agriculture, forests, natural parks, and nature conservations within the administrative

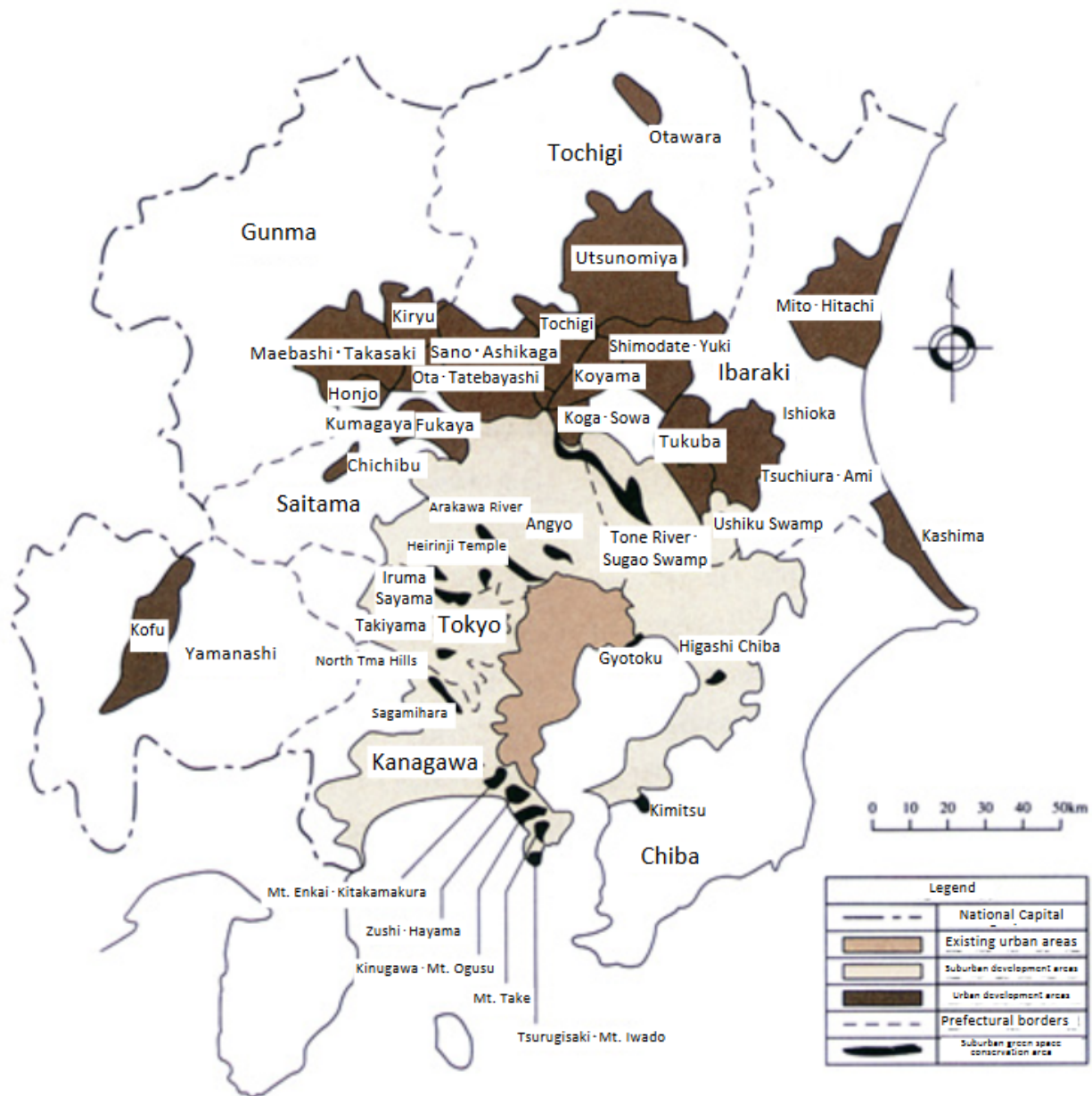
districts of TMG, and sets out matters concerning adjustment of land use for the cases of overlapping designation of these areas.

Based on the National Land Use Strategies (First Phase, May 1976), the provisional TMG Land Use Master Plan was published in August 1976, setting out five area classifications by reference to the regional designation under the individual control laws. Afterwards, along with the formulation of the TMG National Land Use Plan (First Plan, March 1983), the TMG reviewed the Land Use Master Plan so that it could fulfill its original function of land use adjustment, which was followed by revision in September 1986 and partial amendments in February 1988, February 1990 and April 1991.

During the formulation of the TMG National Land Use Plan (Second Plan), the TMG partially revised the Land Use Master Plans in April 1992 and made a partial amendment to the basic directions of land use in April 2011 based on the National Land Use Plan (Fourth National Plan, July 2008) and the revisions of the City Planning Vision for Tokyo (July 2009). Additionally, there have been partial amendments to the five area classifications in April 1993, April 1994, April 1996, April 1997, April 1999, June 2004, March 2006, March 2007, August 2009 and April 2011.

#### 2.3.1.3. National Capital Region Development Act

Along with the restructuring of the National Land Plan System carried out in July 2005, the National Capital Region Development Act was partially revised; the National Capital Region Development Plan into “Basic” and “Development” sections while the previous project plans were abolished. Figure 11 shows the Capital Region policy areas.



**Figure 11: Map of Capital Region policy areas**

a. Basic

Although this section used to be formulated as the framework of the Capital Region Development Plan before the revision of the Act, under the new Plan, it has become a guideline for plans concerning the capital regional development that clarifies the basic policy concerning future development of the Capital Region, the future vision for the Region to aim for and the direction of efforts towards the realization thereof.

b. Development

Based on the Basic section, the Development section sets out what should be the foundation concerning the development of facilities specified in the National Capital Region Development Act for Roads, Railways, etc. in built-up areas (the 23 Wards, Musashino City and part of Mitaka

City in Tokyo), Suburban Development Zones (areas except built-up areas, Okutama Town, Hinohara Village and the Island Region in Tokyo), and urban development areas.

This section indicates that the TMG (1) divide the Capital Region into six regions (e.g. central Tokyo and suburb areas), and promote regional development according to the characteristics of each region, (2) reorganize and develop the urban spaces by enhancing advanced urban functions and reinforcing residential functions in central Tokyo, and (3) form highly-independent in suburbs by developing core business cities and promoting proper role sharing between these cities and central Tokyo.

#### 2.3.1.4. National Capital Regional Plan

The National Capital Regional Plan of August 2009 for one metropolis and seven prefectures (i.e. the Kanto region and Yamanashi Prefecture) is a visionary plan that sets out the key concept of “developing regions that are stately enough to lead the global economy and community”, with the focus on three roles that the Capital region should fulfill in the twenty-first century: the roles as (1) a leading region in the world, in particular, in East Asia, (2) the region with Japan’s national capital functions and (3) a place where diverse people (approximately 42 million) live and work (Tokyo Metropolitan Government).

In order to fulfill these roles, the Plan provides the following five directions that the new capital region should aim for and take measures on these bases. The directions are:

1. The enhancement of international competitiveness of the Capital region that leads the entire Japan
2. The realization of a beautiful region where about 42 million people can comfortably live
3. The realization of a disaster-proof region where a safe and secure life is guaranteed
4. The conservation and creation of good environment
5. The realization of a region with more active exchange and cooperation between diverse entities. In this regard, the Plan focuses on regional coordination and cooperation particularly towards the common goals and is to include and intensively promote 24 strategic regional projects (e.g. “enhancement of an international business base,” “measures against global warming”) that will be carried out over about 10 years.

#### 2.3.2. Metropolitan Planning

##### 2.3.2.1. Use Zoning

Roughly speaking, Tokyo's 23 wards area can be divided into three regions in terms of Use Zone designation: a) Shogyo-kei Yoto-chiiki (commercial type use zones) in the central business district and subcenters, b) Jukyo-senyo-kei Yoto-chiiki (exclusive residential type zones) in the western and southern Yamanote, and c) Kogyo-kei Yoto-chiiki (industrial type zones) in the eastern Shitamachi and the waterfront area (Yorifusa, 1996).

This pattern has remained basically the same for over 100 years since 1879 when the then Governor, Masataka Kusumoto, proposed a land use prospect for Tokyo (Ishida, 1987b) and

through the first zoning plan of Tokyo which was designated in 1925 (Ishida, 1987a). However, there are currently 12 land use zones in Tokyo, in accordance with the 1992 revision of the Urban Planning Law, in which the number of zones increased from the 8 originally envisioned to 12.

The Jukyo-chiiki zone (residential zone) and Jun-Kogyo-chiiki zone (light industrial zone) which are of mixed use character covered almost 35.5% of total area in 1991. Generally, in the narrow strip about 20 or 30 meters wide along arterial and auxiliary roads, zoning intensity is mitigated when compared to main boulevards, even in the residential areas designated as Dai-1-shu Jukyo-senyo-chiiki (category 1 exclusive residential zone). These cases of zoning designation often cause land use conflicts.

The Dai-1-shu Jukyo-senyo-chiiki (category 1 exclusive residential zone) which is the only zone where floor spaces for office use are restricted covered only 20.9% of the 23 wards area in 1991. The zone designated mainly in Yamanote area and very small acreages are in the central area. For examples, in Chiyoda, Chuoh, Minato and Shinjuku wards 113 ha or 2% of total area are designated as the Category 1 Exclusive Residential Zone. In other words, this means that throughout the special 23 wards, the land use zoning is very intense, with little land zoned as exclusively residential; mixed-use is the norm in Tokyo.

To critique zoning in Tokyo, the first established criterion asks, "Are mixed-uses allowed?" Zoning in Tokyo succeeds in allowing a mix of uses. Only about 20% of the total land area of the 23 wards in Tokyo was zoned for a single use, meaning mixed uses are allowed in approximately 80% of the city – a very high percentage compared to U.S. cities.

Throughout the 23 wards of Tokyo, very high Yoseki-ritsu (FAR) are assigned, and actual FAR is also high. The highest FAR is 1000% in the CBD and in the Shinjuku subcenter. However, the total area with an FAR of 1000% is only 114 ha or 0.2% of the 23 wards. Ratios of over 400% are assigned to 9.2% of the 23 wards area. Ratios of between 200% to 400% are assigned to 66.4% or two thirds of the 23 wards area (this covers all eastern Tokyo and the waterfront area). As a result of the 1989 reassignment of ratios, the percentage of area with a FAR below 100% has significantly decreased. This reassignment resulted in the average FAR of 251.9% for the entire ward area, a 9% increase since 1988. The highest of ward average is 560.4% in Chuoh ward. The density of Tokyo, in terms of FAR, has a trend of sharply increasing over time.

The high FAR in Tokyo is a result of pressure from landowners and real estate developers. When the FAR system was first introduced to Tokyo in 1963 by Yoseki-chiku seido (FAR zoning, which was replaced with a new system and repealed in 1969 by the enforcement of 1968 Urban Planning Law), leading real estate companies and developers forced the Ministry of Construction and planning authorities to guarantee a maximum FAR of 1000% which they regarded as the 'vested' right in the CBD area (Ishida, 1992a).

The average FAR actually realized in the Tokyo's ward area is 104.6% in 1990 or 41.5% of the legally permitted FAR of 251.6. The average realized FAR increased remarkably from 90.6% in 1983 to 104.6% in 1990.

Jusoku-ritu (literally means fill ratio or use ratio and is calculated by  $[\text{realized FAR}] / [\text{designated FAR}] \times 100\%$ ) differs from 91.3% in Chiyoda ward to 31.4% in Edogawa ward. Generally, Jusoku-ritu are high in the areas where assigned FARs are higher than 700% or lower than 150%. On the other hand, areas with FARs of 200% to 400% (the majority of Tokyo. Covers about two-thirds of the 23 wards area) have Jusoku-ritu of less than 40%.

While the average Jusoku-ritu for total acreages of building sites in the Tokyo's 23 wards area is very low as mentioned above, it is worth to mention that total floor areas in the same area already have exceeded the limit of total floor area to the transportation capacity which according to the estimation in the 1960s is 30,000ha (Town Planning Bureau, TMG., 1991).

The second criterion to judge zoning in Tokyo asks, "Are building envelope and form requirements flexible?" Tokyo succeeds in this regard, regulating form using FAR, BCR, and slant plane restrictions – permitted FARs in Tokyo are 251.6 and can reach up to 1000 in the densest areas. The trend in Tokyo has seen increases in FARs as demand for new construction make increases in density desirable.

The third criterion to judge zoning in Tokyo asks, "Are there as few performance requirements as possible?" Performance requirements in Tokyo's zoning ordinance are largely nonexistent. The most popular form of performance requirement in the U.S., parking requirements are set very low where they exist at all (Asian Development Bank, 2011, pp x). This keeps the costs of development to a minimum, making large, dense, developments more enticing for builders. Solutions to the impacts of development are largely left up to market forces.

#### 2.3.2.2. Special Use Zoning

Special use zoning is a system meant to supplement the content of use control imposed by the Use Zoning system. Since the Use Zoning system applied nationwide, the Special Zoning system is devised and determined by municipalities to meet local demands. Under the present legal system, however, the types of special zones are stipulated in the Building Standard Law and their contents only are determined by local ordinances.

Two special zones for Tokyo and other large cities were added in the 1992 amendment of the Building Standard Law and the Urban Planning Law: those are Chukoso-kai Jukyo-senyo-chiku (zone where the middle- to top-floors of buildings should be used for residential purposes) and Shogyo-senyo-chiku (exclusive commercial zone). The former zone will be designated by Chiyoda and other central wards widely.

One of the oldest special zones is Bunkyo-chiku (educational zone). The creation of this zone arose out of a case in Tokyo where citizens demanded to drive brothels out of the surrounding area of a primary school in the commercial zone by designating it as an Educational Zone.

If all landowners in the area agreed, such restrictions could be included in a building covenant. At the present, most of building control measures by the Special Zoning system can be included in a district plan. This overlap in the roles of the Special Zoning system and the District Plan system has introduced some confusion within the Japanese land use planning system.

As a result of citizen's movement in the 1960s, Height Control Areas have been widely designated since 1963 in Tokyo's residential areas to guarantee sunlight to houses infringed by neighboring high-rise buildings. Tokyo's method of designating Height Control Areas is to supplement the content of control in every zone imposed by the Use Zoning system. Essentially, the Height Control Area in Tokyo can be regarded as a part of the Zoning system.

#### 2.3.2.3. Parks and Open Space

In 1939, Tokyo completed a comprehensive parks and open space master plan. The plan included parks and open space throughout the 9600 km<sup>2</sup> of the Greater Tokyo Metropolis, from urban parks, cemeteries and allotments gardens in the central district, to scenic beauty areas and national parks in remote mountains. The plan is regarded as one of the most ambitious plans in the history of parks and open space plans in Japan (Yokohari et al., 1996).

The plan included a greenbelt on the boundary of the Ward Area of Tokyo, based on the 1924 Amsterdam Declaration which identified the need for establishing greenbelts when planning for urban expansion. The 136 km<sup>2</sup> greenbelt, consisting of farm and woodlands, was planned at a 15-km radius around Tokyo to restrict the disordered expansion of urban development. The belt was associated with radial green corridors planning along riparian corridors flowing into downtown Tokyo. Recreational paths such as pedestrian and horse riding trails were planning along these corridors (Minomo, 1992).

Succeeding the 1939 plan, a new open space plan for Tokyo was decided in 1943 to meet the needs of air defense during World War II. The concept of the plan was to create open areas and green corridors to stop the spread of fire caused by bombing and to provide refuge and escape routes. In addition to the greenbelt, an inner circular corridor was planned on a 10-km radius to surround the urbanized area at the time by connecting major urban parks planned in the 1939 plan.

The air defense open space plan was terminated and succeeded by the post-war rehabilitation open space plan of 1947. In this plan, the focus was again given to the creation of circular and radial corridors (Mori, 1992). The double-ring circular green corridors, including a greenbelt and a network of radial green corridors along trunk roads, rivers and railroads were planned to connect urban parks.

If the plan was fully implemented, central Tokyo might have been one of the richest green cities in the world with over 200 km<sup>2</sup> of green spaces in the central district. However, as the urban landscape of Tokyo today clearly represents, the plan was poorly implemented. Only a few fluvial corridors were realized, while the circular green corridor gradually decreased and completely abolished in 1969 (Ishida, 1992). Today, only 4%, 24 km<sup>2</sup>, of the Ward Area is ceded as parks and open space.

#### 2.3.3. Problems facing Tokyo

One of the most positive signs of the effectiveness of Japanese land use planning is that despite growth in urban areas, housing remains affordable for the average person. This is largely a result



of the permission zoning and building requirements that allow for a constant, steady stream of new construction to keep up with market demand for housing. In 2014, there were 142,417 housing projects either completed or under construction in the city of Tokyo (Harding, 2016). This is more than the amount of housing permits issued in the entire state of California (83,657), and in the entire country of England (137,010) during the same period. The sheer amount of housing construction is reflected by the cost of housing; housing prices in all of Tokyo have barely risen at all from 1995-2015, a period in which housing prices rose 231% and 441% in San Francisco and London, respectively. Even in Tokyo's fastest growing, in demand ward of Minato, housing prices have only risen 45% between 1995-2015.

Tokyo has a history of construction booms which occur in the wake of changes in land use restrictions and the reaction to those changes by the construction industry in responding to market demands. After the removal of the 30-meter building height limit in 1970 (due to engineering advances in making tall buildings earthquake resistant) Tokyo experienced a rush to redevelop low and medium-rise residential areas within the inner city known as the "manshon boom" (manshon means condominium). Despite a decade long economic slump, cumulative changes in building and land use regulations created another boom in Tokyo, this time in the construction of high-rise residential buildings.

The trend of "deregulation" around the world in the 1980s also occurred in Japan, primarily as a legacy of Prime Minister Nakasone's administration from 1982-1987. Slant-plane restrictions were eased to allow buildings of greater bulk. Changes in the way FAR was calculated as well as increases in allowed FAR permitted increased density. The new district zoning system, as well as upzoning of previously exclusive residential zones, all contributed to a system of regulations which now permitted much taller, larger buildings of much greater density. The result was a boom in the construction of high-rise residential buildings (Sorensen, Okata, & Fujii, 2009). During the same period, large western cities struggled to keep up with market demands for housing, because land use and zoning restrictions have not allowed these cities to keep up with the pace of growth, resulting in expensive housing costs.

While some of the amount of housing construction is due to the zoning system which allows residential uses in almost all its twelve zones, another reason for the high number of housing starts is the strong system of landowner's rights. Similar to Land Use Law in the United States, land use in Japan may only be restricted in cases where *Kokyo no Fukushi* (the welfare of the public) is at stake (Yorifusa, 1996). However, the interpretation of this is stricter in Japan than in the United States, and in Japan every land owner has the absolute right to use their land for urban use freely, and these rights should only be restricted in exceptional cases.

What this means practically, is that the planning and construction of housing is not impeded by the objections of neighbors. Because of Japan's strong landowner's rights, everyone has the right to use their land, so neighbors have no right to stop development and construction. As a result, housing construction is constant, even in otherwise quiet residential neighborhoods. Frequently, when a family buys an older house, they tear it down and build a new home on the property, rather than remodeling or renovating the old house.

Part of the reason this culture of tearing down and reconstructing home exists is a unique combination of strong landowner's rights, as well as the history of Japan's rapid growth into a developed, industrial nation. During Japan's period of rapid growth after World-War II through the 1960s, Japan's land use planning system focused on economic development and promoting economic development by constructing infrastructure. Little priority and investment was given to "social capital" and public goods such as parks, local roads and sidewalks, especially in residential areas (Sorensen, 2003). As a result, a tradition of cheap, quickly constructed housing was created, with a limited lifespan that necessitates the need for reconstruction in about 30 years.

One result of the deregulated, rapid growth of Japanese cities and especially Tokyo, is the lack of attention paid to aesthetics, the relation of buildings to their context, and a lack of green space, all of which contribute to an urban environment which, while functional, many consider ugly. Historically, in the need to develop rapidly, Japan's cities gave up their tradition architecture and urban form, resulting in an unordered cityscape (Hein, 2010).

Tokyo's problems regarding a lack of green space date back all the way to the first wave of urbanization in the early 20<sup>th</sup> century (Megacities, 2011). Despite efforts to create a greenbelt region to control suburban expansion, by the end of the 1960s, a lack of enforcement of existing regulations and implementation of plans resulted in continued problems; the rapid economic growth in the 1960s only exacerbated Tokyo's green space problems by focusing the government's land use planning and development authority to promote the rapid construction of homes and commercial buildings, without regard for green and open spaces.

Although the 1968 City Planning Law introduced Urbanization Control Areas to control the spread of urban development into rural and agricultural lands, the relaxed enforcement of development rules hindered the intentions of the law. Additionally, the lack of any open space or green space regulations in Japanese land use planning (you won't see open space or green space zones), while park, forestry, and agricultural land use regulations are regarded totally separately, had tended to result in any areas designated as urban to be completely developed. Yokohari et al. (2000) suggest a possible remedy to Tokyo's lack of green space by moving away from the western concept of greenbelts and controlling the mix of urban and rural land uses by incorporating vegetated open spaces, including agricultural lands, into urban areas. This may have the benefit of building on the traditional forms of Japanese land use mentioned by Hein (2010), also contributing positively to the perception of the city as aesthetically pleasing.

In Tokyo's growing suburbs, a land development technique called "Land Readjustment" has been used for decades to promote development while preventing sprawl. Land Readjustment is a method whereby an irregular pattern of agricultural land holdings is re-arranged into regular building plots and equipped with basic infrastructure such as roads and sewers. A percentage of each landowner's holding is contributed to provide land for roads and parks, and for some plots to sell to pay the costs of the project. While the impacts of Land Readjustment vary because it is so widely used, Sorensen (2000) found that Land Readjustment projects contribute to increased sprawl at the regional scale, while largely failing to prevent sprawl at the local scale.

## 2.4. Case Study: Los Angeles and the Wilshire Community Plan

### 2.4.1. Overview of Land Use Planning in Los Angeles

Los Angeles has a unique system of land use planning, where rather than a single land use element covering the whole of the city limits, the land use element consists of the city's 35 community plans, each covering a different neighborhood or district of the city (Los Angeles Department of City Planning, n.d.). A map of the 35 community plan areas is shown in Figure 12.

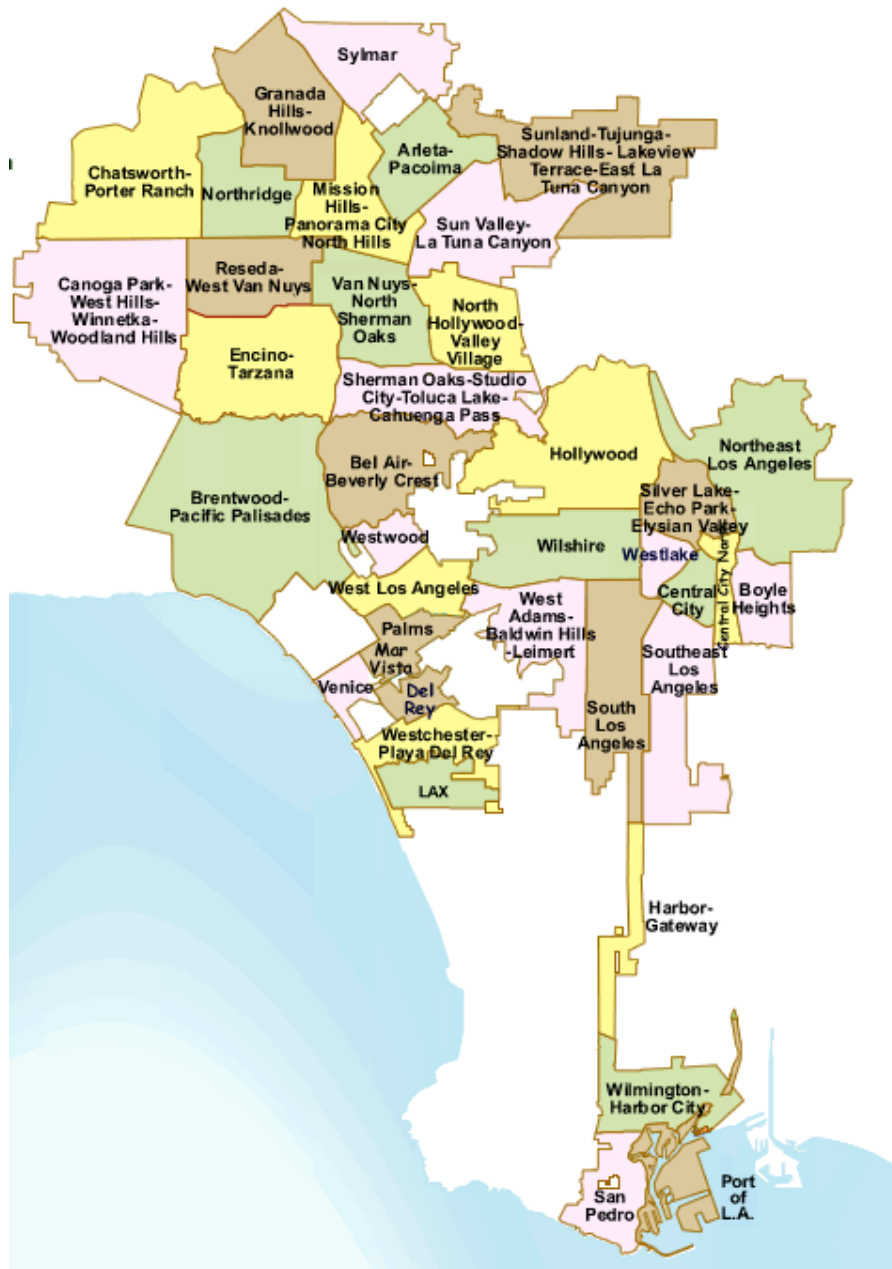


Figure 12: Community Plan Areas (Los Angeles Department of City Planning, n.d.)

The current zoning regulations in Los Angeles include eight major zone types split into 46 different zones, as well as seven height districts into which each of the zones is placed, and 11 supplemental use districts (Los Angeles Department of City Planning, 2006). In each zone, the regulations specify maximum height, required yards, minimum area, minimum lot width, and parking requirements.

Los Angeles' zoning code is an implementation of the city's land use designations specified in the city's General Plan. However, unlike typical general plans which usually designate land use in a single land use element, Los Angeles' land use element collectively consists of 35 community plans which cover the entire territory of the city. The basic types of land use are defined in Chapter 3 of the city's General Plan Framework, which includes the goals, objectives, and policies for land use throughout the entire city as a whole (Los Angeles Department of City Planning, n.d.). Each land use designation has a corresponding zone or zones, as well as permitted densities.

Each of the 35 community plans covers a separate area that together covers the entire city of Los Angeles. Included within each community plan is a land use map which designates general land uses as described in the City's General Plan Land Use Framework.

#### 2.4.2. Problems facing Los Angeles

One of the greatest problems facing the Los Angeles metropolitan area is the high cost of housing. In 2014, data showed that Los Angeles and Orange counties combined are the least affordable places to live in the country; a family earning the median household income of \$59,424 would need to spend 47.9% of their income to afford a median priced rental apartment, and 42.6% to afford a median priced house (Logan, 2014).

While a complex combination of factors at the national, state, and local levels have contributed to the lack of affordable housing in Los Angeles, including wealth booms, the fiscal impacts of Proposition 13, and the availability of credit for home buying (Kroll & Singa, 2008), one of the key factors contributing to Los Angeles' chronic housing shortage over the past 25 years are zoning policies which represented the rise in power of antigrowth advocates over developers as the prime determinants of land use policy (Whittemore, 2012). In the 1970s, it was estimated that the existing zoning regulations would allow enough residential units to house 9.9 million people (Los Angeles Department of Planning, 1972). The state-mandated GPZCP, as well as the passing of Proposition U in 1986, in restricting development, drastically lowered this amount.

In the 1970s, Los Angeles' Planning Director Calvin Hamilton, swayed by the city's antigrowth advocates, endorsed a density rollback study. The final 1972 study advocated a zoning capacity reduction of 35%, close to a population capacity goal of 4.1 million. Much of the reduction in potential development intensity came in areas zoned for residential use, mostly in the multifamily residential zones of R3, R4, and R5. Eventually making its way into the city's General Plan, the density rollbacks were slow to be implemented into the city's zoning code. While the State of California required in 1971 that cities and counties zoning must enforce their general plans by 1974, the city of Los Angeles took the position that the mandate only applied to General Law cities, which would exclude Los Angeles.

However, in 1978 the state legislature passed Assembly Bill 283. The Bill required that zoning conform to local General Plans by July 1, 1981, in charter cities larger than 2 million; the only city this law applied to was Los Angeles. What followed throughout the 1980s was a wave of downzoning known as the General Plan Zoning Code Consistency Program (GPZCP).

Additionally, a ballot proposition officially titled “Reasonable Limits on Commercial Buildings and Traffic Growth”, also known as “Proposition U”, passed in 1986. Proposed by antigrowth council members Zev Yaroslavsky and Marvin Braude, Proposition U lowered the potential density of vast zones of Los Angeles by reducing the maximum allowable FAR, halving the allowable size of new commercial and industry buildings throughout much of the cities borders. Antigrowth sentiment has recently been revived in the form of “Measure S”, a 2017 ballot proposition which if passed, would impose a moratorium on construction that increases development density for up to two years, prohibiting project-specific amendments to the city's general plan, requiring a public review of the city's general plan every five years, requiring city staff—not developers or project applicants—to perform environmental impact reports, and establishing other changes to the city's general plan laws (City of Los Angeles, 2017).

While scholars such as Mukhija et. al. (2010) and Hayden (2007) argue for inclusionary zoning as a means of making housing more affordable in Los Angeles, even if more affordable housing was required as a part of new developments, more residential development is needed to have a substantial effective on housing costs. Gabbe (2016) and Manville (2013) have shown that more permissive or less regulations would increase the amount of new development, either by allowing it where it was previously prohibited, or by reducing the costs of development making it economically feasible for developers. Additionally, Levine (1999) found that growth-control measures in California between 1979 and 1988 (such as those in Los Angeles discussed above), significantly displaced new construction and may have exacerbated the spread of urban areas into rural land.

In assessing Los Angeles’s zoning by the criteria established in Section 2.1.5., it is clear that Japanese zoning practices would help solve Los Angeles’s affordable housing crisis if they are applied in appropriate areas. While a mix of uses is already allowed in many of Los Angeles’s more dense zones, restrictions regulating building mass go too far in restricting density where it is otherwise desirable and appropriate (see criteria used to identify areas appropriate for Japanese zoning in Section 2.4.4). Additionally, performance requirements, mainly in the form of parking requirements, make development costlier than it could be if such development impacts were left to be solved by market forces as they are in Japan and Tokyo.

The need for greater residential density in Los Angeles is something which Japan’s planning and zoning codes excel at allowing. Japanese style zoning would allow a much greater amount of housing to be built, reversing the growth control measures of the 1970s and 1980s in Los Angeles, which would alleviate market demand for housing, and in doing so make it more affordable. However, principles from Japan are not universally applicable over the entirety of Los Angeles. Japan’s land use planning and zoning system is most successful at creating dense, mixed-use neighborhoods, with a variety of transit options, while ensuring such neighborhoods remain affordable to live in. Regulations successful at creating such neighborhoods are not necessarily appropriate for less dense, residential neighborhoods which exist throughout Los Angeles.

Therefore, it will be necessary to identify specific areas within Los Angeles which are both appropriate for the application of Japanese style land use planning and zoning regulations, and where an easing of land use restrictions will be acceptable to residents and other stakeholders. Section 3.4.3 will identify areas within the Wilshire Community Plan of Los Angeles which are suitable for the application of some Japanese land use planning and zoning regulations.

#### 2.4.3. The Wilshire Community Plan

##### *Overview:*

The majority of the Wilshire Community Plan Area consists of gently sloping plains and includes about 8,954 acres (about 14 square miles), which is approximately 3 percent of the total land in the City of Los Angeles. Located in what is generally referred to as the Mid-City section of Los Angeles, the eastern edge of the approximately 2.5-mile wide by 6-mile long Wilshire Community Plan Area is about 6 miles west of downtown Los Angeles, while the western edge abuts the City of Beverly Hills. The plan area is bounded by Melrose Avenue and Rosewood Avenue to the north; 18th Street, Venice Boulevard and Pico Boulevard to the south; Hoover Street to the east; and the Cities of West Hollywood and Beverly Hills to the west.

Wilshire is surrounded by the City of Los Angeles community plan areas of Hollywood to the north; South Central Los Angeles and West Adams-Leimert-Baldwin Hills to the south; Silverlake-Echo Park and Westlake to the east; and West Los Angeles to the west.

The plan area is generally southwest of the Hollywood Freeway (U.S. 101), which is oriented northwest-southeast across the northeast corner of the Plan Area at Vermont and Rosewood Avenues. The Hollywood Freeway is the only freeway within the Wilshire plan area. The Harbor Freeway (I-110) is located one mile to the east; the Santa Monica Freeway (I-10) is located one mile to the south; and the San Diego Freeway (I-405) is approximately five miles to the west of the community boundaries. The Metro Red Line subway serves the Wilshire Community Plan area, running along portions of Wilshire Boulevard and Vermont Avenue. The southern edge of the Plan area is at its closest just over one mile from the newly constructed Metro Expo Line.

##### *Existing and Planned Land Uses:*

The Wilshire Community Plan Area has a pattern of low to medium density residential uses interspersed with areas of higher density residential uses. Long narrow corridors of commercial activity can be found along major streets including Wilshire, Pico, La Cienega, Western and Vermont. The plan area east of Western Avenue contains large concentrations of higher-density residential neighborhoods surrounding the regional commercial area known as Wilshire Center.

Existing residential land use totals 4,568 acres – about half the area of the Community Plan – including approximately 116,575 dwelling units. The overwhelming majority of these housing units are multi-family (86%), yet single family units comprise 42 percent of the total residential land area, with average net single family densities of eight units per acre. The Plan designates 4,592 acres for residential land uses, accommodating a projected 134,300 dwelling units (Table 8).

**Table 8: Wilshire Community Plan Population and Dwelling Unit Capacity**

Residential Land Use Category	DU's Per Net Acre Midpoint (Range)	Net Acre	Number of Dwelling Units	Persons Per Dwelling Unit	Reasonable Expected Population (2010)
Very Low I	2 (1 to 3)	24	48	2.98	143
Very Low II	3.5 (3 to 4)	287	1,004	2.98	2,992
Low I	4.5 (4 to 9)	111	499	2.98	1,487
Low II	7 (4 to 9)	1,494	10,458	2.98	31,164
Low Medium I	13.5 (9 to 18)	550	7,425	2.53	18,164
Low Medium II	23.5 (18 to 29)	291	6,838	2.53	17,300
Medium	42 (29 to 55)	1061	44,562	2.45	109,177
High Medium	82 (55 to 109)	773	63,386	2.45	155,296
<b>Totals</b>	-	<b>4,592</b>	<b>134,300</b>	<b>2.51</b>	<b>336,344</b>

The Wilshire Community Plan Area includes several neighborhoods that consist almost exclusively of duplexes, most notably areas between La Brea Avenue and Fairfax Avenue from Melrose to Third Street, between Olympic and Pico Boulevards from Rimpau Boulevard to Redondo Boulevard, and along Crescent Heights Boulevard.

A combination of low to mid-rise multi-family units and areas containing a mix of mid to high-rise buildings are concentrated along the Wilshire corridor between Vermont Avenue and Wilton Place, in aggregate forming the area known as Wilshire Center.

Residential areas with a mix of high and medium densities are generally found adjacent to commercial corridors in the area bounded by Third Street on the north and Eighth Street on the south. The remainder of the area is largely low-rise residential homes and apartments.

Scattered mid-rise residential areas are located elsewhere throughout the plan area, with building heights exceeding eight stories in Park La Brea and along Rossmore Avenue. The average net multi-family density is 42 units per acre, one of the highest in the city, with the average net density for all housing types at 25 units per acre.

Existing commercial land uses comprise 1,054 acres. There is approximately 40,004,300 square feet of existing commercial development. Planned commercial land use as designated in the Community Plan totals 1,129 acres, with a projected developed commercial total of 41,833,820 square feet.

Wilshire Boulevard between Hoover Street and Western Avenue includes a substantial number of mid-rise buildings, generally with minimal setbacks or setbacks that increase the sidewalk width

along the boulevard and some with ground floor shops and services. This highly urbanized section of the boulevard experiences considerable pedestrian activity and is supported by Metro Red Line subway service. The urban character along Wilshire Boulevard moving west from Wilton Place to Highland Avenues changes to predominantly low-rise freestanding buildings with landscaped setbacks and limited ground floor retail use. The Park Mile Specific Plan governs development in this area.

Low-rise commercial buildings consisting of a mix of building types occur along most of the boulevards except within Hancock Park. Corridors east of Hancock Park include the following: Pico Boulevard; Olympic Boulevard east of Crenshaw Boulevard; Eighth Street east of Western Avenue which includes higher commercial intensities in Koreatown; Sixth Street; Third Street; Beverly Boulevard and Melrose Avenue between Hoover Street and Western Avenue; Temple Street, consisting of largely zero-setback blank wall buildings; Vermont Avenue; and Western Avenue. Corridors west of Hancock Park include the following: Third Street; Beverly Boulevard; Melrose Avenue, Robertson Boulevard, and La Brea Avenue, consisting primarily of one-story pedestrian-oriented street fronts; and La Cienega and Pico Boulevards which include a mix of building types.

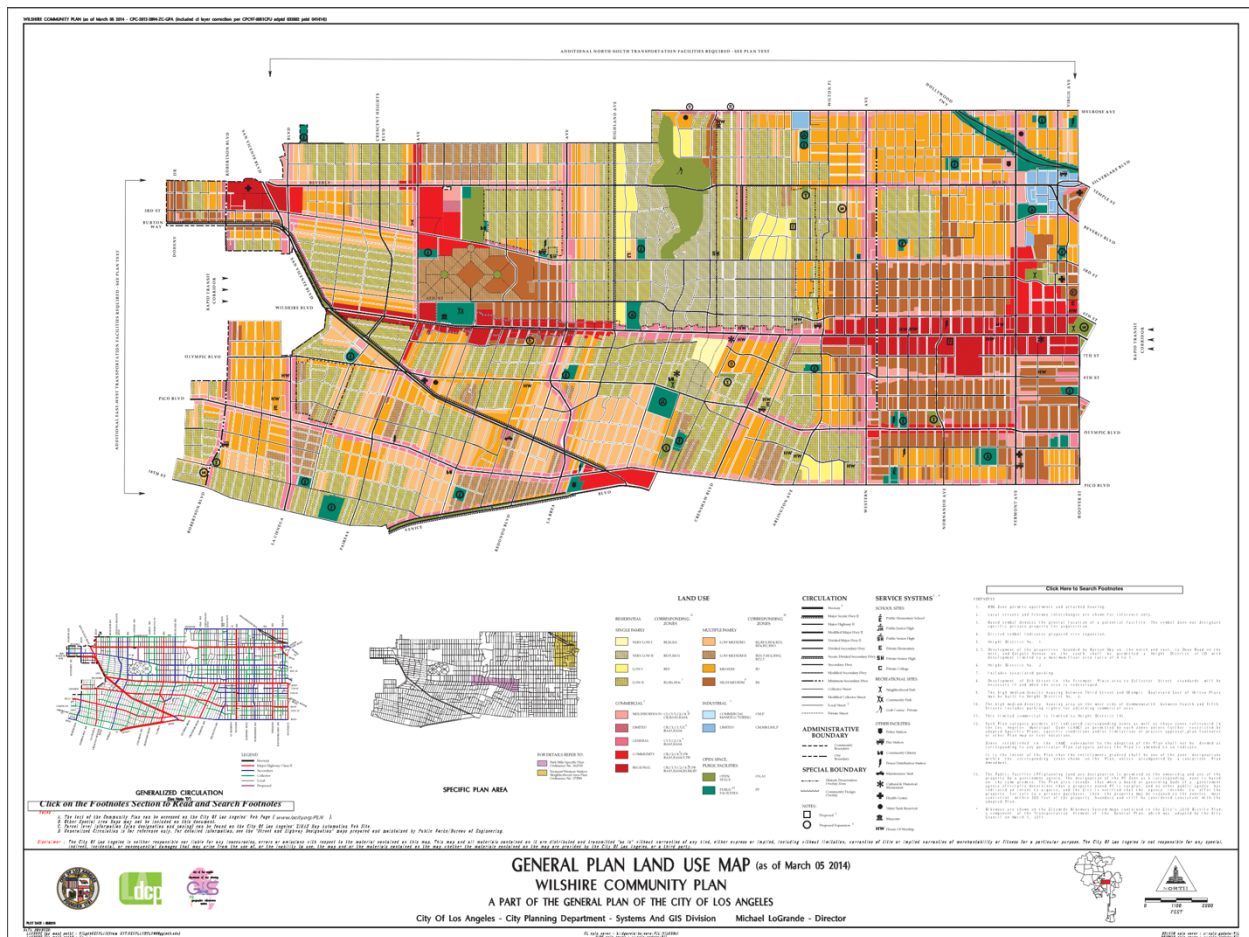


Figure 13: Wilshire General Plan Land Use Map (Los Angeles Department of City Planning, 2014)



Only a small portion of Wilshire features industrial uses – 50 acres. There is approximately 1,527,800 square feet of existing industrial development. Planned industrial land use designated in the Community Plan is 38 acres, with a build-out projection equal to current conditions. Most of Wilshire’s low intensity industrial land uses are located around the intersection of Beverly Boulevard and Virgil Avenue, and along Pico Boulevard between Vermont and Western Avenues. These business park-style developments provide limited employment bases. They consist of small and medium scale automobile repair businesses, wholesale/retail distribution outlets, and storage operations.

About 191 acres of land within the Wilshire Community Plan is designated as open space. This category represents 2.1 percent of total land acreage in the Wilshire Community.

The street pattern in the Wilshire area is primarily a grid. Most of the street network is oriented on primary compass points with few exceptions. Notably, south of Wilshire Boulevard and west of Wilton Place, the street grid shifts uniformly towards a northeast/southwest alignment, while east/west streets shift somewhat to a northwest/southeast orientation.

#### 2.4.4. Where Japanese Zoning Practices can be applied in the Wilshire neighborhood

Japanese zoning excels at allowing the construction of dense, mixed-use neighborhoods via relaxed regulations which permit the efficient use of land without regulations such as required setbacks, yards, and minimum lot sizes. While such regulations are useful in limiting the conflicts between developments in areas where the highest density is not desired, a relaxation of regulations can be beneficial in encouraging intense development in contexts where it is appropriate and desirable.

Much of Wilshire’s 4,592 acres of residential uses are suburban in character; 42 percent of the total residential land area consists of single family units, with an average net density of 8 dwelling units per acre. A relaxation of restrictions following Japanese zoning practices would not be appropriate in these contexts, and would result in the substantial alteration of the character of such neighborhoods to the detriment of residents.

However, there are areas within the Wilshire Community Plan which are suitable for a revision of zoning regulations following Japanese zoning practices. Such a revision would bring many of the benefits of Japanese zoning, such as decreased housing costs, increased walkability, and improved street vitality.

The following areas of Wilshire have been identified for the application of Japanese zoning practices based on the following criteria:

1. Is density desired?

There is no use in applying zoning strategies designed to increase density if such a result is not desired. Assessing whether density is desired in a certain area can be done a few different ways. The first is looking at applicable goals, policies, objectives, and implementation measures in the Wilshire Community Plan. This is the official document which provides the direction for the development of the Wilshire community going forward. However, the Wilshire Community Plan

has not been updated since 2000, so it may not best reflect the current desires of residents, business owners, and other users. The City's Zoning Ordinance also offers insight into which areas of the city are the focus of more dense development. Another way of assessing whether density is desired is by looking at the actual conditions of the urban environment in question. Areas where density already exists can indicate at least that density is acceptable, if not desired, by residents and users. The community's vision for itself will need to be reassessed via a general plan amendment, which would include community outreach to best reflect the vision residents and other important stakeholders have for the future of the community.

## 2. Does the infrastructure support increased density?

Increases in density cannot be allowed where infrastructure does not exist to support greater concentrations of people and all the required services which accompany them. Streets must be appropriately wide (number of lanes) to support increases in traffic. Public transit, in the form of bus service or Metro lines are necessary to accommodate increases in residential density. Los Angeles's General Plan Circulation Element as well as the Wilshire Community Plan detail the state of transportation infrastructure in Los Angeles. Additionally, it is appropriate to look at LA Metro bus routes and rail lines to see where extensive public transit service currently exists or is planned. Other types of infrastructure and services necessary for any significant increase in municipal population include parks, public schools, sewage, and water supply.

## 3. Are adjacent uses and massing compatible with an increase in density?

Increases in density must be appropriate with their surrounding contexts. For example, a medium or high-rise apartment building is not appropriate to be located in a single-family residential neighborhood. This criterion relates back to the hierarchy of uses described in both cumulative zoning and Japanese zoning. Some uses are more suitable for increases in density (apartments) while others are to be protected from increases in density (single family homes).

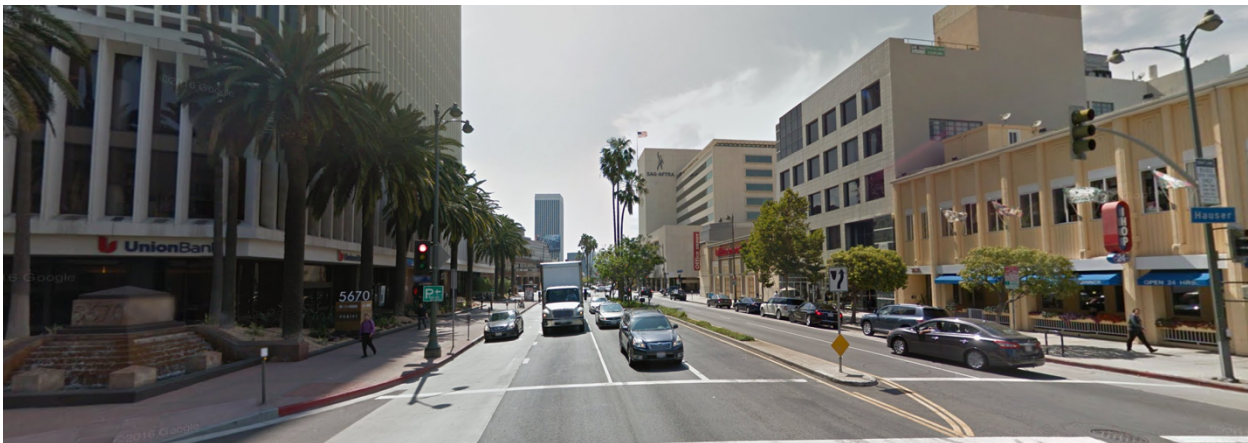
Additionally, increases in density require increases in the mass of buildings, and often result in aesthetic changes to growing neighborhoods. Similar to incompatible adjacent uses, the massing and aesthetics of newly constructed buildings must be appropriate with their surround contexts. For example, high-rise apartment blocks or large office buildings can dwarf low or medium density homes, apartments, and businesses.

## 4. Does a mix of uses already exist?

Areas of the City where a mix of uses already exists are more suitable for increases in density because of the inherent relationship between mixed-uses and density: each creates better urban qualities of life when they are supported by one another. High density areas without a mix of uses can lack street and pedestrian activity, and can seem empty outside the hours of their primary use. Areas of low density that feature mixed uses often lose one of the main benefits of mixed-uses which is the improved ability to support pedestrian activity.

The first of the areas of Wilshire which Japanese zoning can be applied to is the dense commercial corridor along Wilshire Boulevard and adjacent streets, east of the LA County Museum of Art and

perpendicular to La Brea Avenue. This area features a mix of mid and high-rise buildings, and primarily commercial uses facing the busy four-lane Wilshire Boulevard, as seen in Figure 14. The commercial uses are categorized as Regional Commercial, while the adjacent residential uses are primarily categorized as High Medium and Medium multiple family residential. The ability to support increased populations will be improved with the construction of the Metro Purple Line extension, which when completed will extend the Purple Line along Wilshire Boulevard from Hoover St to the UCLA campus in Westwood.



**Figure 14: Wilshire Boulevard & Hauser Boulevard**

Another area within the Wilshire Community Plan appropriate for Japanese style zoning is the area bounded by West 6<sup>th</sup> and West 8<sup>th</sup> Streets to the north and south respectively, and South Western Avenue and Hoover Street to the west and east respectively. Known as Wilshire Center, but also encompassing parts of Koreatown, this area of Wilshire features both dense Regional and Community commercial uses along the main corridors, and High Medium residential uses on adjacent streets as seen in Figure 15. Well served by the Metro Purple Line which runs along Wilshire Boulevard, this is the area of Wilshire closest to downtown Los Angeles and most suitable for high-density development.

Both commercial and residential uses within this area of Wilshire currently feature levels of density, as well as appropriately wide streets, for the application of Japanese zoning practices including the elimination of required lot sizes, setbacks, and height limits in favor of maximum building coverage ratio and floor-area ratios, as well a slant plane restrictions to ensure the height of taller buildings does not infringe on neighboring buildings.



**Figure 15: West 6<sup>th</sup> Street & South Serrano Avenue**

Additionally, some of the less intensive commercial corridors within the Plan Area may benefit from Japanese style zoning, such as West Pico Boulevard and South La Brea Avenue. These corridors are zoned for Neighborhood Commercial uses, and adjacent residential streets are primarily zoned for Low Medium and Medium levels of density. While these corridors consist of primarily low-rise commercial uses, the scale and width of streets, existing build coverage ratios, and transit coverage would support an increase in the density and variety of uses (Fig. 16). Building height limits can be increased and residential uses can be allowed which would increase the housing supply as well as improve the pedestrian environment on the street.



**Figure 16: West Pico Boulevard (eastbound)**

Figure 17 is an example of one of the neighborhoods within the Plan Area which are not suitable for the application of Japanese zoning practices. These areas of Wilshire not suitable for such zoning practices are primarily the single family residential neighborhoods which comprise 42 percent of the total residential land use area of the Wilshire Community Plan and about one quarter of the total Plan Area. These areas are zoned for single family residential uses ranging in intensity between Very Low and Low densities.



**Figure 17: South Lucerne Boulevard**

#### 2.4.5. Appropriate Japanese Zoning Practices for identified neighborhoods

##### 1. *Simplified regulations*

Rather than prescribe required yards and minimum lot sizes, building density in each zone can be regulated by prescribing maximum Floor Area Ratio and maximum Building Coverage Ratio. In Japanese cities, each of the twelve land use zones has a prescribed maximum floor-area ratio and a maximum building coverage ratio. These types of regulations ensure that the mass and height of buildings is appropriate for the intensity of zone they are in, while also being flexible to a variety of shapes and sizes of buildings. Generally, as the intensity of zone increases, the maximum floor-area and building coverage ratios also increase to allow taller, and bigger buildings to be built, such as apartment buildings. The increased flexibility allowed by simple FAR and BCR regulations rather than minimum lot sizes and required yards, can allow for more efficient land use by allowing developers and homeowners to build on lots which would previously be deemed unsuitable for housing. They would also provide the opportunity for increased density rather than large yards where such a preference exists.

Finally, rather than specify maximum height limits, height can be regulated by slant plane restrictions. Heights are limited in proportion to the distance from the farther edge of the roads they face, or from neighboring lot boundaries. The maximum proportion will vary depending on the density of the zone. The ratio is lowest in residential zones, and increases for other zones. These restrictions limit building heights to prevent encroachment upon neighboring buildings and ensure large buildings do not cast shadows on smaller adjacent buildings. The benefit of slant plane restrictions rather than specific height limits is that slant plane restrictions are bound to the context in which each building is located; specific height limits over broad areas of land use can arbitrarily prevent taller buildings from being build where they might otherwise be allowed based on the neighborhood context.

##### 2. *Increasing the allowable density in specific residential zones*

The permitted density of certain residential zones should be increased to a level suitable to a city the size of Los Angeles. The current permitted density in many of the least intensive residential zones ranges between 1 to 12 dwelling units per acre; this level of density is appropriate for suburbs but not a large city such as Los Angeles (Steuteville & Langdon, 2009). Appropriate densities for a large city – especially close to downtown - should range from a minimum of 20 to 40 dwelling units per acre, all the way up to over 200 dwelling units per acre (San Diego Planning Department, n.d.).

The previously identified residential areas in the Wilshire Community Plan appropriate for the application of Japanese zoning practices, range from the Low Medium to High Medium residential land use categories. These categories range in density from 9 DU per acre at the lowest, to 109 DU per acre at the highest (Table 8). Particularly in the areas designated as Low Medium, targeted densities will need to be increased to allow a greater supply of housing.

Care will have to be taken to ensure an increase in density will not negatively affect the quality of life of current residents and that the benefits of density are clear to those who live in neighborhoods facing changes. Aside from lower housing costs associated with an increased amount of residential development, one of the key benefits of density that is immediately tangible to those who live in such communities is an enhancement of what is known as “life within walking distance” (Nyren, 2016). This includes opportunities for recreation, shopping, eating, and other services within walking or biking distance. Compact neighborhoods are also associated with improved physical and mental health outcomes (Ewing & Kreutzer, 2006), and can better create a sense of community than sprawling, suburban neighborhoods (Haughey, 2005).

### *3. Allowing residential uses in Commercial Zones*

Currently there are seven commercial zones which regulate commercial land use in Los Angeles, which generally range in intensity to appropriately regulate use within the neighborhood context. Although residential uses are allowed in many of these commercial zones, they are still regulated by required yards, and minimum lot sizes and widths, which should be eased as previously described. Residential uses should be allowed in these zones, with FAR, BCR, and slant plane restrictions corresponding to residential zones of similar density. Densities would scale up as the intensity of the commercial zone increases. Many of the requirements for yards, minimum lot sizes, and minimum lot widths for commercial zones are already the same as those of residential zones, making the integration of residential uses within these zones much simpler – only rather than required yards, minimum lot areas and lot widths, building coverage ratios and floor-area ratios would regulate building density (Los Angeles Department of City Planning, 2006).

The main benefit of allowing residential uses in commercial zones is an increase in the amount of land in which residential uses are allowed, and correspondingly an increase in the zoning capacity of residential uses; this would better allow developers to keep up with market demand for housing in neighborhoods where the housing supply has been restricted. In practice, this also eliminates the needs for mixed-use zones, by making all commercial zones mixed-use.

Another benefit of mixing residential uses and commercial uses, is a greater diversity of housing types within residential neighborhoods. Increased housing diversity provides opportunities for aging in place, increased proximity to destinations within walking or biking distance, and is associated with improved physical and mental health outcomes, as well as greater sustainability (Healthy Active by Design, n.d.).

## **2.5. Conclusion**

Zoning plays an important role in either allowing the creation of dense, mixed-use environments, or prohibiting it by segregating uses, heavily restricting the form of buildings, or mandating expensive performance requirements which make development costlier. Altogether, zoning influences the cost of housing, and in California and Los Angeles has contributed to the current affordable housing crisis. In contrast, zoning in Japan and Tokyo has allowed a continuous supply of new housing contributing to the affordability of housing in Japanese cities.

Zoning can be critiqued based on the following criteria which determine the extent zoning allows the creation of dense, mixed-use environments.

1. How zoning regulates use:

If dense, mixed-use, and affordable cities are to be created, zoning must allow a mix of uses in each zone.

2. How zoning regulates form:

In regulating a building's form, requirements must be flexible to accommodate a variety of types of buildings and shapes.

3. How zoning regulates performance:

There should be as few performance requirements in zoning ordinances as possible, and any performance requirements should be carefully tailored to ensure they do not become a hindrance to new development.

Zoning in Los Angeles falls short in meeting these criteria, while zoning in Tokyo meets these criteria. It follows that one way to improve the affordable housing situation in Los Angeles, zoning codes can be changed following Japanese zoning practices. However, not all areas of Los Angeles are suitable for the creation of high density, mixed-use neighborhoods. Criteria for identifying neighborhoods which are suitable for the application of Japanese zoning practices include:

1. Is density desired?

Zoning strategies to increase density should only be applied where increased density is desired. The first way to assess whether density is desired in a certain area is looking at applicable goals, policies, objectives, and implementation measures in the Wilshire Community Plan. Another way of assessing whether density is desired is by looking at the actual conditions of the urban environment in question. The community's vision for itself will need to be reassessed via a general plan amendment, which would include community outreach to best reflect the vision residents and other important stakeholders have for the future of the community.

2. Does the infrastructure support increased density?

Increases in density should not be allowed where infrastructure does not exist to support greater concentrations of people and all the required services which accompany them. Streets must be appropriately wide (number of lanes), and public transit service is necessary to support increases in traffic related to increasing density. Other types of infrastructure and services necessary for any

significant increase in municipal population include parks, public schools, sewage, and water supply.

3. Are adjacent uses and massing compatible with an increase in density?

Increases in density must be appropriate with their surrounding contexts. This criterion relates back to the hierarchy of uses described in both cumulative zoning and Japanese zoning. Some uses are more suitable for increases in density (apartments) while others are to be protected from increases in density (single family homes).

Additionally, increases in density require increases in the mass of buildings, and often result in aesthetic changes to growing neighborhoods. Similar to incompatible adjacent uses, the massing and aesthetics of newly constructed buildings must be appropriate with their surround contexts.

4. Does a mix of uses already exist?

Areas of the City where a mix of uses already exists are more suitable for increases in density because of the inherent relationship between mixed-uses and density: each creates better urban qualities of life when they are supported by one another. Existing uses can be determined by examining relevant plans as well as looking at the actual uses on the ground.

The staff report to the Los Angeles City Planning Commission and attached background report identify areas of the Wilshire Community Plan which are suitable for the application of Japanese zoning practices to allow the construction of dense, mixed-use environments, while helping to alleviate the affordable housing crisis by increasing the amount of housing construction allowed.



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# LOS ANGELES DEPARTMENT OF CITY PLANNING STAFF REPORT TO THE CITY PLANNING COMMISSION

**CITY PLANNING COMMISSION:**

**DATE:** March 17, 2017

**TIME:** After 8:30 a.m.\*

**PLACE:** City Hall, Room 1010  
200 North Spring Street  
Los Angeles, CA 90012

**PROJECT:** CPC-2017-XXXX

**LOCATION:** Wilshire

**COUNCIL DISTRICT:** 4, 10

**PLAN AREA:** Wilshire

**SUMMARY:** The American style of land use planning and zoning, particularly the practices of single-use zoning, low-density development, and other regulations that address form, has led to a high cost of housing in large cities, as well as forcing such cities to sprawl into previously rural or undeveloped lands. This document examines some of the differences between American and Japanese land use planning and zoning, ways that respective implementation has effected the urban environments of Los Angeles and Tokyo, and ways that the problems of high housing costs may be alleviated by making changes to the General Plan and Zoning Code to apply Japanese zoning practices in appropriate neighborhoods of Los Angeles.

**RECOMMENDATIONS:**

1. **Initiate** an amendment of the Wilshire Community Plan
2. **Initiate** a related amendment to the Los Angeles Planning and Zoning Ordinance
3. **Consider** the further study of Japan as a model in the application of zoning

**STAFF:** Anthony C Petrillo Jr, City Planning Associate

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Appendix A/Background Report

Attached

**BACKGROUND:**

In the past twenty years, western cities have experienced a tremendous increase in housing costs which are the result of a combination of land use restrictions, alongside pressure from increased migration into city centers which were formerly undesirable places to live (McIlwain, 2010, p. 16). This is a reversal of the post-World War II trend of Americans moving outside of city centers into newly built suburbs.

If housing costs are to be reduced to a more affordable level, one of the approaches that cities need to consider is an increase in the supply of housing via new construction, or reduce the pressure of migration into central cities. To allow new construction to keep up with market demand for housing, changes in land use and zoning regulations are required to allow more growth in cities where pressure for growth exists. One model of land use and zoning regulations which has kept cities affordable by allowing growth to keep up with market demand is Japan.

As large cities have become more desirable places to live, zoning and land use restrictions that limit density have hindered the ability of developers to keep up with the pace of growth with new construction. The result has been an explosive growth in housing costs. Between 1995 and 2015, housing prices in London and San Francisco rose by 441 percent and 231 percent respectively (Harding, 2016). In 2014, the average cost of a one-bedroom apartment in San Francisco was nearly \$3,500 per month, while nearly 70 percent of housing units were selling for more than their asking price, indicating a very strong demand and limited supply (Lind, 2014). Housing costs in cities like New York, Chicago, Los Angeles, and San Francisco have all well-exceeded the standard of 30% of household income to median gross rent (Maciag, n.d.). One of the other consequences of restrictive land use and zoning regulations is sprawl.

Studies have found that land use restrictions such as single-use and low-density zoning reduce the available housing supply by (artificially) limiting the amount of housing construction permitted, which prevents an increase in residential density to meet market demand. This phenomenon can be referred to as the “zoning tax” (Glaeser, E., Glaeser & Gyourko, 2002). Excessive regulations may increase the cost of new housing by as much as 20% to 35% (Cowden, 1991). One study found that the entitlement process increases the cost of a new single family dwelling by almost \$23,000 in the Bay Area of California (Quigley, Raphael, & Rosenthal, 2008). Restrictions on permitted lot sizes have also been shown to drastically increase the cost of new housing construction (Paciorek, 2011).

Action must be taken to ensure Los Angeles is an affordable city in which to live. Currently, the residential zoning capacity for Los Angeles does not permit enough housing construction to keep up with demand for new housing, let alone permit enough new construction to reduce housing costs. In 2014, Los Angeles and Orange counties combined were the least affordable places to live in the country; a family earning the median household income of \$59,424 would need to spend 47.9% of their income to afford a median priced rental apartment, and 42.6% to afford a median priced house

(Logan, 2014). If business as usual continues, housing prices in Los Angeles are likely grow less affordable. The result is a city that only the rich can afford, to the exclusion of a diverse range of residents, which help make communities desirable places to live.

Although business as usual means that housing prices will continue to rise, on way to limit of reverse this trend would be changes to Los Angeles' General Plan Land Use Element, and Planning and Zoning Code. The example set by Japan has resulted in cities that can keep up with growth and remain affordable places to live. Between 1995 and 2005, although Tokyo grew by about 15%, housing prices only slightly risen; even in Tokyo's fastest growing ward of Minato, housing prices have only risen 45% between 1995-2015, less than the rate of population growth (Harding, 2016).

The report will identify some of the locations within the Wilshire Community Plan Area of Los Angeles which are suitable for the application of context appropriate Japanese zoning practices. Attached to this report is Appendix A: Background Report. The Background Report first describes the history of U.S. zoning, then how Japanese land use planning and zoning works, particularly in the creation of dense, mixed-use neighborhoods. The report reviews the implications for affordable housing of Japan's approach to zoning. It examines the cities of Tokyo and Los Angeles as case studies in the practical application of zoning. The report reviews Japanese practices of mixed-use, building coverage ratios, floor-area ratios, and slant plane restrictions in comparison to the U.S. practices of single-use zones, large lot setbacks, minimum lot sizes, and prescribed height limits. The report then reviews areas within the Wilshire Community Plan of Los Angeles which may be suitable for the application of Japanese zoning practices. The recommended zoning changes will increase the density in specific neighborhoods by allowing an increase in residential construction, which will help alleviate the problem of unaffordable housing caused by an insufficient supply of housing.

### **PROPOSAL:**

The Land Use Element of Los Angeles' General Plan is not a single document, but consists of 35 "Community Plans" which collectively cover the entire city limits. The City's General Plan Land Use Framework describes the general land uses that make up the City, as well as the specific use designations, and corresponding zones and densities. Each Community Plan then designates the land uses within the specific area of the city it regulates.

The majority of the Wilshire Community Plan Area consists of gently sloping plains and includes about 8,954 acres (about 14 square miles), which is approximately 3 percent of the total land in the City of Los Angeles. Located in what is generally referred to as the Mid-City section of Los Angeles, the eastern edge of the approximately 2.5-mile wide by 6-mile long Wilshire Community Plan Area is about 6 miles west of downtown Los Angeles, while the western edge abuts the City of Beverly Hills. The plan area is bounded by Melrose Avenue and Rosewood Avenue to the north; 18th Street, Venice Boulevard



and Pico Boulevard to the south; Hoover Street to the east; and the Cities of West Hollywood and Beverly Hills to the west.

The following three recommended zoning changes will necessitate a revision of Los Angeles' Community Plans to ensure the General Plan and Zoning Code are consistent with each other. These recommended changes would apply only to the areas identified as appropriate for the application of Japanese zoning practices.

#### 1. Simplified regulations

Rather than prescribe required yards and minimum lot sizes, building density in each zone can be regulated by prescribing maximum Floor Area Ratio and maximum Building Coverage Ratio. In Japanese cities, each of the twelve land use zones has a prescribed maximum floor-area ratio and a maximum building coverage ratio. These types of regulations ensure that the mass and height of buildings is appropriate for the intensity of zone they are in, while also being flexible to a variety of shapes and sizes of buildings. Generally, as the intensity of zone increases, the maximum floor-area and building coverage ratios also increase to allow taller, and bigger buildings to be built, such as apartment buildings. The increased flexibility allowed by simple FAR and BCR regulations rather than minimum lot sizes and required yards, can allow for more efficient land use by allowing developers and homeowners to build on lots which would previously be deemed unsuitable for housing. They would also provide the opportunity for increased density rather than large yards where such a preference exists.

Finally, rather than specify maximum height limits, height can be regulated by slant plane restrictions. Heights are limited in proportion to the distance from the farther edge of the roads they face, or from neighboring lot boundaries. The maximum proportion will vary depending on the density of the zone. The ratio is lowest in residential zones, and increases for other zones. These restrictions limit building heights to prevent encroachment upon neighboring buildings and ensure large buildings do not cast shadows on smaller adjacent buildings. The benefit of slant plane restrictions rather than specific height limits is that slant plane restrictions are bound to the context in which each building is located; specific height limits over broad areas of land use can arbitrarily prevent taller buildings from being build where they might otherwise be allowed based on the neighborhood context.

#### 2. Increasing the allowable density in specific residential zones

The permitted density of certain residential zones should be increased to a level suitable to a city the size of Los Angeles. The current permitted density in many of the least intensive residential zones ranges between 1 to 12 dwelling units per acre; this level of density is appropriate for suburbs but not a large city such as Los Angeles (Steuteville & Langdon, 2009). Appropriate densities for a large city – especially close to downtown - should range from a minimum of 20 to 40 dwelling units per acre, all the way up to over 200 dwelling units per acre (San Diego Planning Department, n.d.).

The identified residential areas in the Wilshire Community Plan appropriate for the application of Japanese zoning practices range from the Low Medium to High Medium residential land use categories. These categories range in density from 9 dwelling units per acre at the lowest, to 109 dwelling units per acre at the highest. Particularly in the areas designated as Low Medium, targeted densities will need to be increased to allow a greater supply of housing.

### 3. Allowing residential uses in Commercial Zones

Currently there are seven commercial zones which regulate commercial land use in Los Angeles, which generally range in intensity to appropriately regulate use within the neighborhood context. Residential uses should be allowed in these zones, with FAR, BCR, and slant plane restrictions corresponding to residential zones of similar density. This would mean that in the least intensive commercial zone “Limited Commercial”, residential uses would be allowed at a density of the least intensive residential zone. Densities would scale up as the intensity of the commercial zone increases. Many of the requirements for yards, minimum lot sizes, and minimum lot widths for commercial zones are already the same as those of residential zones, making the integration of residential uses within these zones much simpler (Los Angeles Department of City Planning, 2006).

The main benefit of allowing residential uses in commercial zones is an increase in the amount of land in which residential uses are allowed, and correspondingly an increase in the zoning capacity of residential uses; this would better allow developers to keep up with market demand for housing in neighborhoods where the housing supply has been restricted. In practice, this also eliminates the needs for mixed-use zones, by making all commercial zones mixed-use.

Another benefit of mixing residential uses and commercial uses, is a greater diversity of housing types within residential neighborhoods. Increased housing diversity provides opportunities for aging in place, increased proximity to destinations within walking or biking distance, and is associated with improved physical and mental health outcomes, as well as greater sustainability (Healthy Active by Design, n.d.).

Areas appropriate for the application of Japanese zoning practices:

The following areas of Wilshire have been identified for the application of Japanese zoning practices based on the following criteria discussed in Section 2.4.4. of the background report:

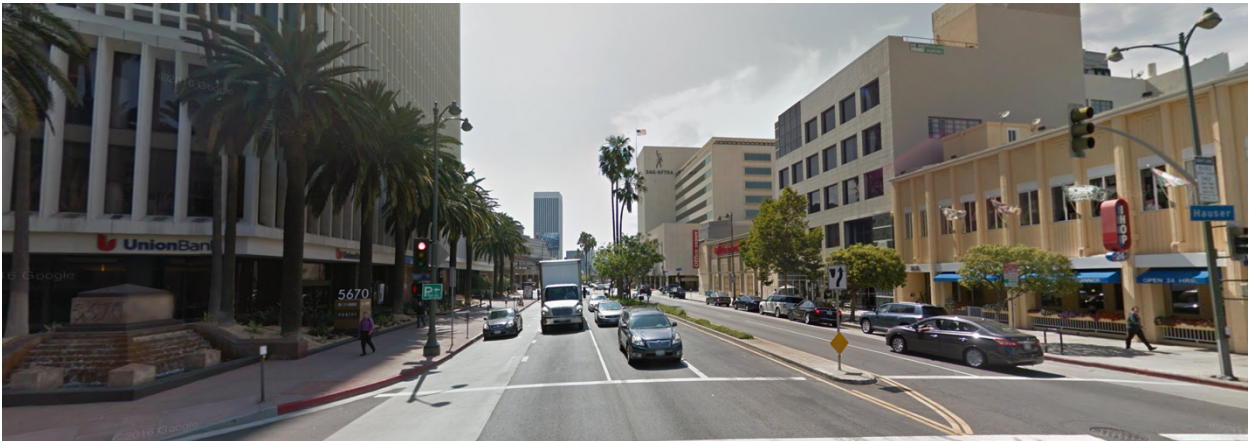
1. Is density desired?
2. Does the infrastructure support increased density?
3. Are adjacent uses and massing compatible with an increase in density?
4. Does a mix of uses already exist?

The first of the areas of Wilshire which Japanese zoning can be applied to is the dense commercial corridor along Wilshire Boulevard and adjacent streets, east of the LA County Museum of Art and perpendicular to La Brea Avenue. Increased density in this

area of Wilshire aligns with the direction given in the Wilshire Community Plan. One of the objectives of the Wilshire Community Plan is to “provide affordable housing and increased accessibility to more population segments”. One of the policies to help accomplish this objective is to “Encourage multiple family residential and mixed use development in commercial zones”.

The ability to support increased populations will be improved with the construction of the Metro Purple Line extension, which when completed will extend the Purple Line along Wilshire Boulevard from Hoover St to the UCLA campus in Westwood. The area is also well served by existing bus routes, and four-lane Wilshire Boulevard functions as a major local avenue.

This area features a mix of mid and high-rise buildings, and primarily commercial uses facing the busy four-lane Wilshire Boulevard, as seen in Figure 1. The commercial uses are categorized as Regional Commercial, while the adjacent residential uses are primarily categorized as High Medium and Medium multiple family residential. Additionally, a mix of uses already exists to some degree.



**Figure 1: Wilshire Boulevard & Hauser Boulevard**

Another area within the Wilshire Community Plan appropriate for Japanese style zoning is the area bounded by West 6<sup>th</sup> and West 8<sup>th</sup> Streets to the north and south respectively, and South Western Avenue and Hoover Street to the west and east respectively. Known as Wilshire Center, but also encompassing parts of Koreatown, this area of Wilshire features both dense Regional and Community commercial uses along the main corridors, and High Medium residential uses on adjacent streets as seen in Figure 2. Both commercial and residential uses within this area of Wilshire currently feature levels of density, as well as appropriately wide streets, for the application of Japanese zoning practices. Well served by the Metro Purple Line which runs along Wilshire Boulevard, this is the area of Wilshire closest to downtown Los Angeles and most suitable for high-density development.



**Figure 2: West 6<sup>th</sup> Street & South Serrano Avenue**

Additionally, some of the less intensive commercial corridors within the Plan Area may benefit from Japanese style zoning, such as West Pico Boulevard and South La Brea Avenue. Increases in density would be supported by the Wilshire Community Plan objective and related policies to “Promote distinctive commercial districts and pedestrian-oriented areas.” These corridors are zoned for Neighborhood Commercial uses, and adjacent residential streets are primarily zoned for Low Medium and Medium levels of density. While these corridors consist of primarily low-rise commercial uses, the scale and width of streets (these are major local avenues), existing build coverage ratios, and transit coverage would support an increase in the density and variety of uses (Fig. 3). Building height limits can be increased and residential uses can be allowed which would increase the housing supply as well as improve the pedestrian environment on the street. Additionally, some residential uses are already allowed in these zones.



**Figure 3: West Pico Boulevard (eastbound)**

Figure 4 is an example of one of the neighborhoods within the Plan Area which are not suitable for the application of Japanese zoning practices. These areas of Wilshire not suitable for such zoning practices are primarily the single family residential neighborhoods which comprise 42 percent of the total residential land use area of the Wilshire Community Plan and about one quarter of the total Plan Area. These areas are

zoned for single family residential uses ranging in intensity between Very Low and Low densities.

Increased density is not desired in these neighborhoods. Multiple objectives, policies, and programs in the Wilshire Community Plan make it clear that the preservation of stable single family and low density residential neighborhoods is a priority, including Policy 1-1.1 which states that the City should “Protect existing stable single family and low density residential neighborhoods from encroachment by higher density residential uses and other uses that are incompatible as to scale and character, or would otherwise diminish quality of life.” Additionally, such neighborhoods are not well suited for increases in density because of the lack of public transit to service a significant increase in population, as well as single lane roads which could not accommodate large increases in road traffic associated with increased density and a mix of uses.



**Figure 4: South Lucerne Boulevard**

**CONCLUSION:**

Staff recommends that the City amend the Wilshire Community Plan, and Planning and Zoning Ordinance, in the identified areas within the Wilshire Community Plan. The primary purpose of the amendment should be increasing residential density, with the ultimate goal of making Los Angeles a more affordable and desirable place to live. The goals of the general plan and related Planning and Zoning Ordinance amendment would be to: 1) Increase residential density in areas within the Plan determined to be appropriate; 2) Expand mixed-use areas within the Plan; and 3) Reconsider the zoning regulations that address and limit form.

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