

Los Angeles Building & Housing Stock Analysis

Completed March 2022

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Introduction & Approach



LA Building & Housing Stock Analysis

Background and Summary of Project

The City of Los Angeles is home to over four million people and has roughly one million buildings, the majority of which are single-family homes. LA began working with the Building Electrification Institute (BEI) in 2020, as a partner through the Bloomberg American Cities Climate Challenge, to help the City identify opportunities to reduce greenhouse gas (GHG) emissions from its building stock. As part of [LA's Sustainable City pLAN](#) ("LA's Green New Deal"), the City is committed to achieving 100% carbon neutral buildings by 2050 and a 44% reduction in energy use intensity (EUI) by 2045.

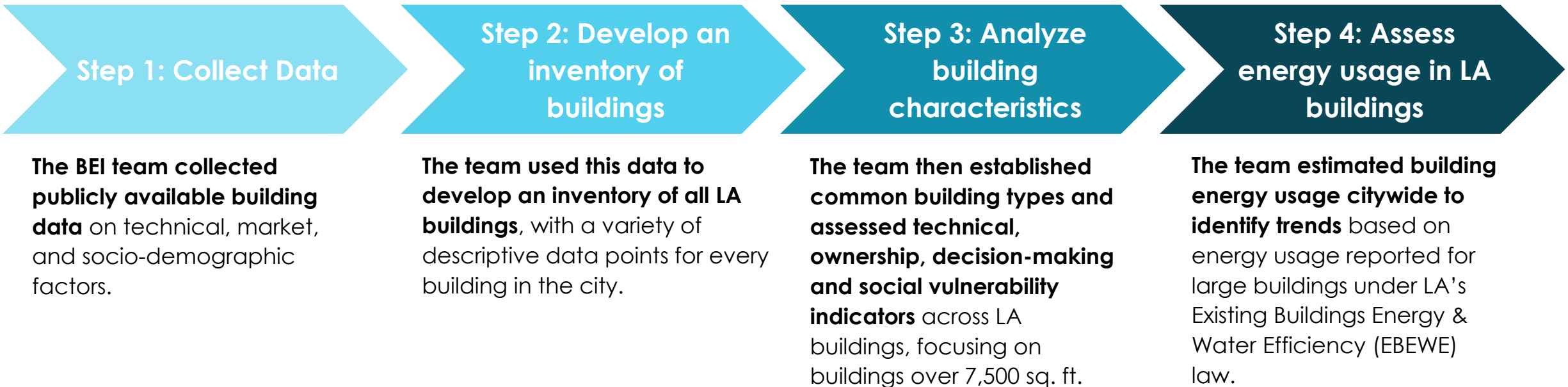
BEI completed this Building and Housing Stock Analysis for LA to help identify key considerations and pathways to achieve the City's goals. This study focuses primarily on medium and large-sized buildings over 7,500 sq. ft. due to the City's policy priorities at the time. The analysis identifies common building types and assesses technical, ownership, decision-making, and social vulnerability indicators that can help inform potential program and policy design for these buildings. Additional analysis will be needed to identify strategies for smaller buildings.



Building & Housing Stock Analysis | Approach

To complete LA's Building & Housing Stock Analysis, BEI and its technical consultants, Cadmus and Steven Winter Associates, completed a 4-step process.

Building & Housing Stock Analysis Analysis Process



Following the completion of this analysis, LA will share findings with key community stakeholders to support development of new programs, policies, and strategies to equitably reduce emissions across different building segments.

Building & Housing Stock Analysis | Approach

Data Collection Details

To begin, several datasets were merged to consolidate publicly available information about buildings in LA.

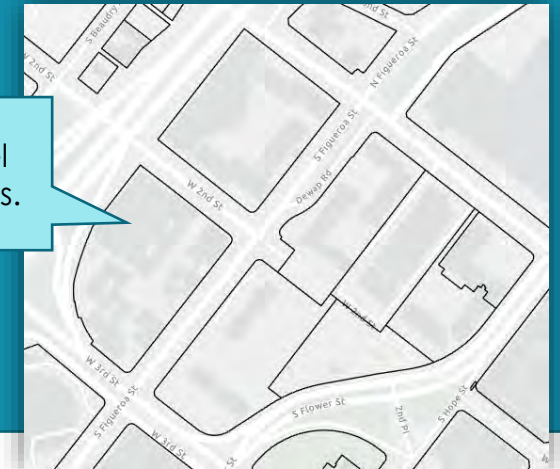
These datasets were:

- County tax assessor parcel dataset
- County tax assessor GIS dataset
- Citywide building footprint geometry
- EBEWE benchmarking & reporting data
- US Census American Community Survey 1-Yr 2019 Data

Parcels versus Buildings

The building inventory was created from County tax assessor data, which is a parcel-level dataset, rather than a building-specific dataset. If multiple buildings are on one parcel (see example below), the data for these buildings are summarized into parcel totals. This analysis integrated GIS building footprint data with this parcel-level data. Throughout this report, "Building Count" will refer to the number of building footprints (rather than the number of parcels), excluding small structures under 300 sq. ft., to avoid counting unheated garages and sheds.

Example of 1 parcel with several buildings.



Building & Housing Stock Analysis | Approach

BEI assessed three types of indicators that can help LA understand the potential opportunities and impacts of future policies and programs in LA.

Technical Indicators

Help identify opportunities for upgrades due to technical elements such as building type, construction method, and/or energy usage. This includes:

- Building characteristics: number of units, building height, vintage, size, occupancy type, building count, etc.
- Prioritized EBEWE energy usage trends

Ownership & Decision-Making Indicators

Help identify owners or decision-makers who may need different types of support to upgrade their buildings. This includes:

- Buildings with specific decision-making structures, such as affordable housing, co-ops, and condos
- This analysis focuses on affordable housing due to interest and available data.

Social Vulnerability Indicators

Help identify buildings that may need greater assistance and/or public investments to make upgrades. This includes:

- Buildings in low-income areas and/or serving low-income populations, including unsubsidized affordable housing
- Communities disproportionately impacted by the current and future effects of climate change

Citywide Building Stock Analysis



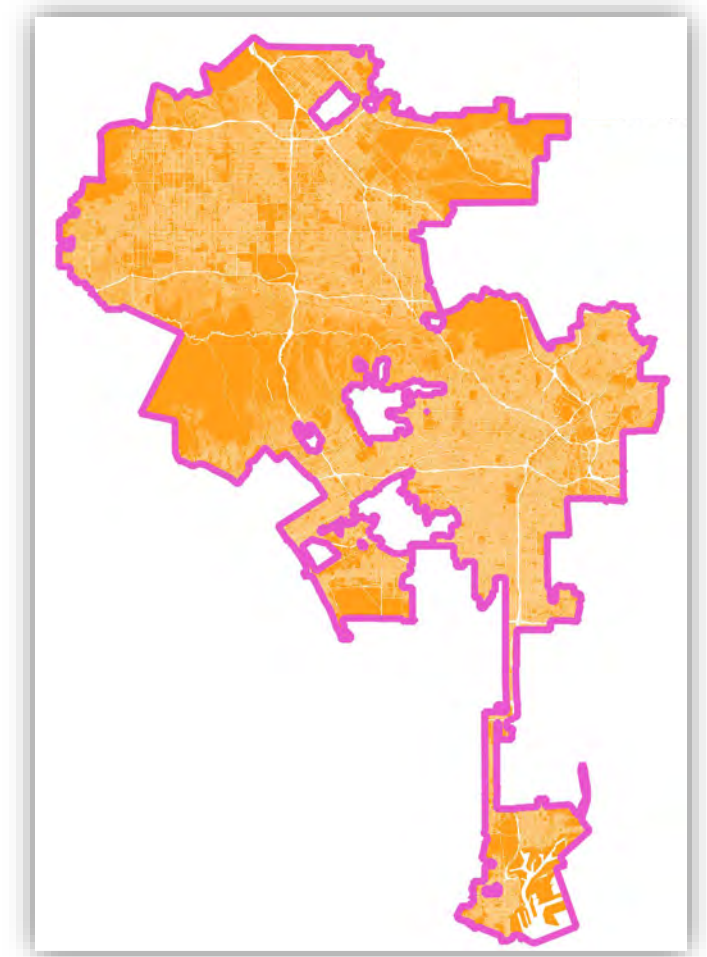
Citywide Building Stock

While most of the analysis focuses on medium and large-sized buildings over 7,500 sq. ft., BEI completed analysis of basic details about all buildings citywide.

LA Citywide Totals

Total Parcel Count:	765,130 parcels
Total Building Count:	966,671 buildings
Total Built Square Footage:	2.58B sq. ft.
Total Residential Unit Count:	1.43M units

City of LA Boundary



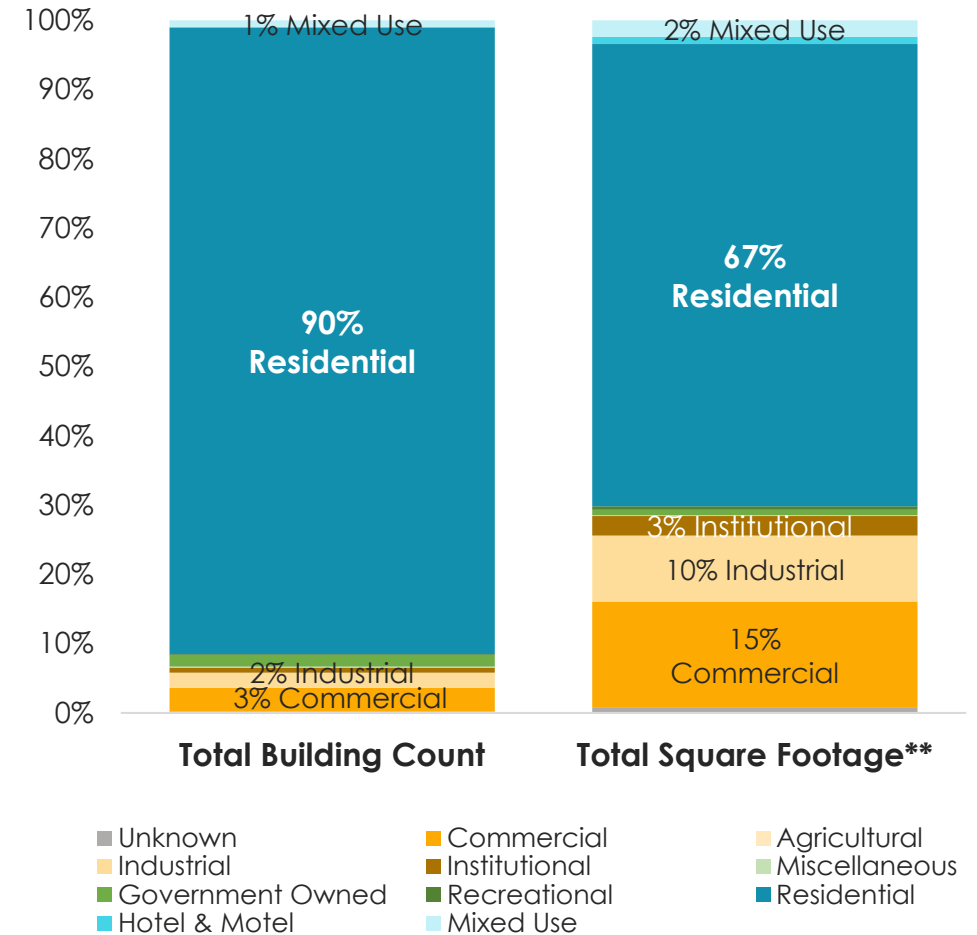
Citywide Building Stock | Building Use

There are nearly one million buildings in LA, and over 90% are residential buildings. Non-residential buildings comprise 8.5% of buildings and 30% of square footage citywide.*

Building Use – All Buildings

Building Use	Total Building Count	Total Square Footage**	Total Unit Count
Unknown	1,898	18.5 M	---
Commercial	33,358	397.2 M	---
Agricultural	68	0.05 M	---
Industrial	20,945	245.3 M	---
Institutional	7,090	73.1 M	---
Miscellaneous	1,367	3.1 M	---
Government Owned	16,161	19.9 M	---
Recreational	1,247	13.5 M	---
Residential	874,467	1,723.6 M	1,374,409
Hotel & Motel	1,138	27.2 M	31,790
Mixed Use	8,932	60.7 M	24,686
Grand Total	966,671	2,582.4 M	1,430,885

Citywide Buildings by Use



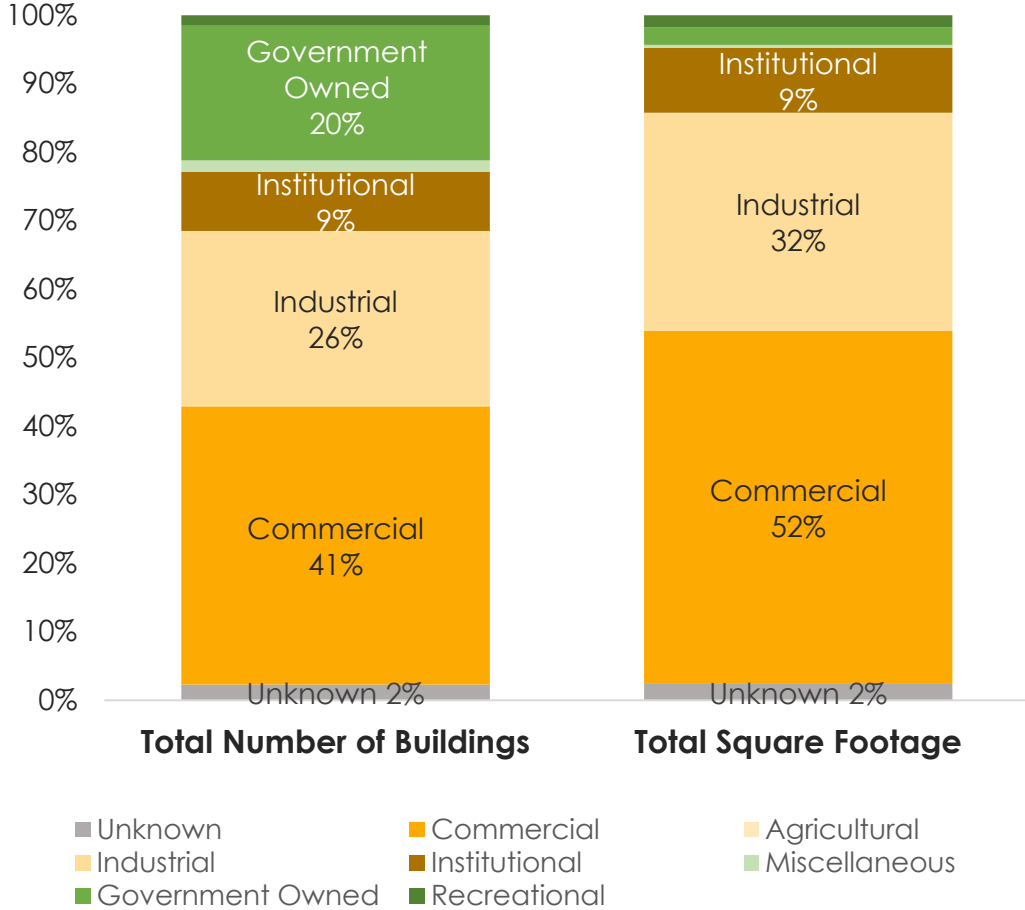
Citywide Building Stock | Non-Residential Buildings

Commercial and industrial buildings represent most of the non-residential buildings and square footage in LA, accounting for more than three-quarters of non-residential buildings and over 80% of the built square footage.

Non-residential Building Types

Building Use Type	Total Building Count	Total Square Footage
Unknown	1,898	18.5 M
Commercial	33,358	397.2 M
Agricultural	68	0.05 M
Industrial	20,945	245.3 M
Institutional	7,090	73.1 M
Miscellaneous	1,367	3.1 M
Government Owned	16,161	19.9 M
Recreational	1,247	13.5 M
Grand Total	82,134	770.8 M

Non-Residential Buildings by Use



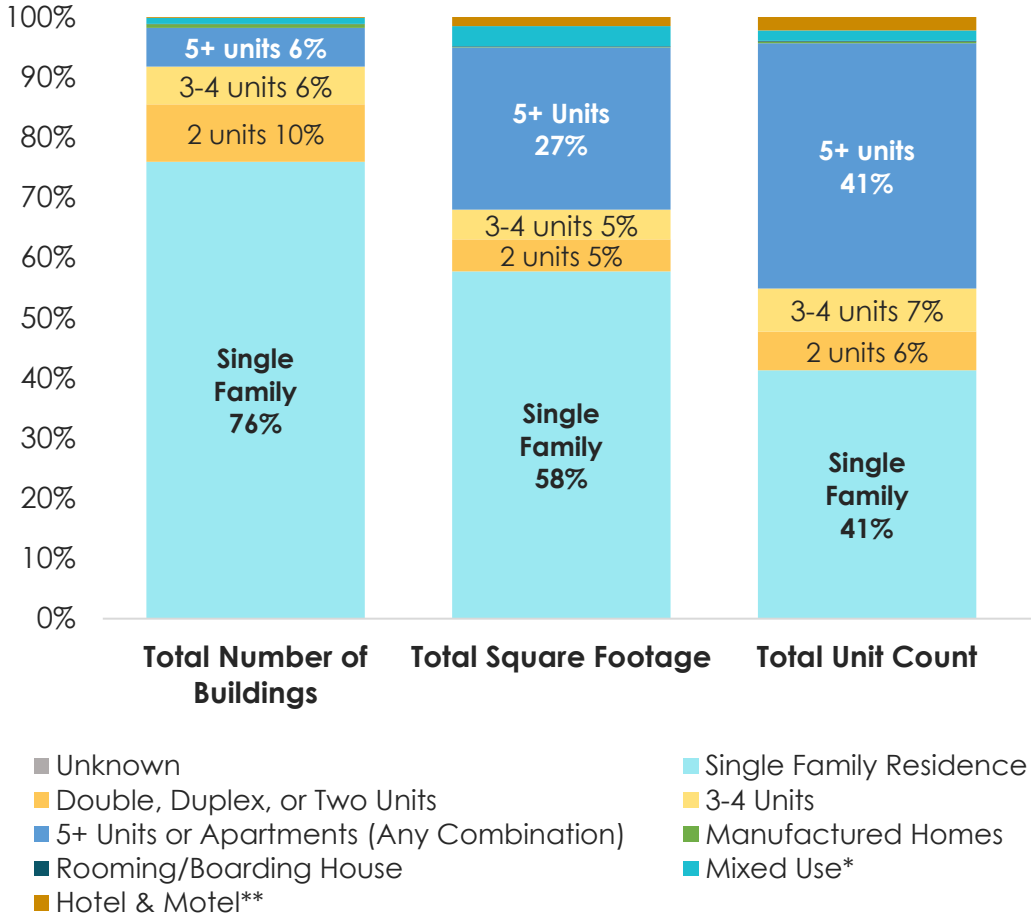
Citywide Building Stock | Residential Buildings

The majority of residential buildings are single family homes, although multifamily buildings with 5+ units account for a substantial portion of built square footage and residential units.

Residential Building Types

Residential Building Type	Total Number of Buildings	Total Square Footage	Total Unit Count
Unknown Residential	6	0.04 M	50
Single Family Residence	671,779	1,045.7 M	590,975
Double, Duplex, or Two Units	84,419	96.2 M	91,819
3-4 Units	55,420	89.7 M	102,441
5+ Units or Apartments (Any Combination)	56,927	488.7 M	583,220
Manufactured Homes	5,426	1.2 M	4,133
Rooming/Boarding House	490	1.9 M	1,771
Mixed Use*	8,932	60.8 M	24,686
Hotel & Motel**	1,138	27.2 M	31,790
Total Residential & Mixed Use	884,537	1,811.5 M	1,430,885

Residential Buildings by Housing Type



*Mixed Use categories are counted as residential buildings, but are likely undercounted in tax assessor data. There may be additional mixed use buildings present in residential and commercial use types.

**Hotel & Motel use type included here due to similar occupancy use and energy needs to residential buildings.

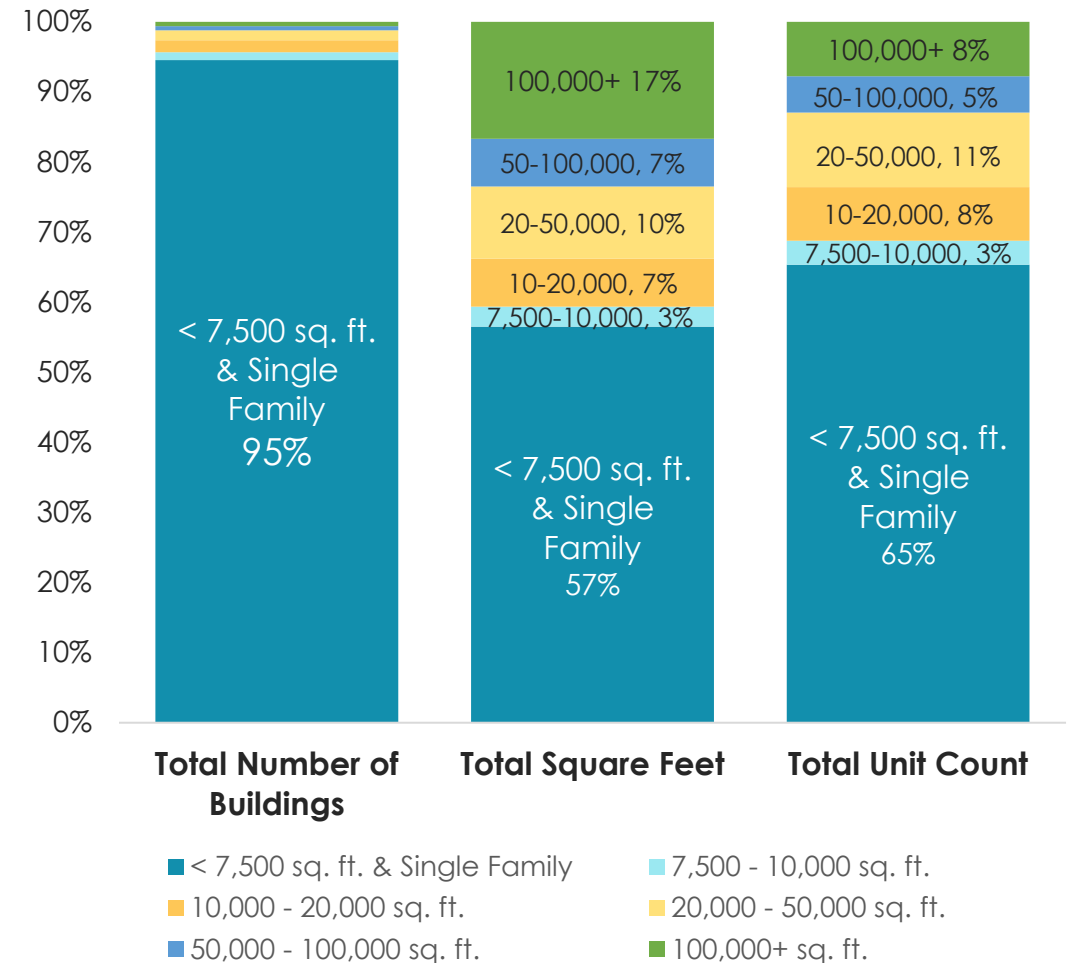
Citywide Building Stock | Building Size

Medium and large buildings (over 7,500 sq. ft.)* represent just 5% of total buildings, but accounts for 43% of building square footage and 35% of residential units.

Buildings by Size Threshold

Size Threshold	Total Number of Buildings	Total Square Feet	Total Unit Count
7,500 - 10,000 sq. ft.	10,795	73.3 M	49,051
10,000 - 20,000 sq. ft.	16,639	177.3 M	109,601
20,000 - 50,000 sq. ft.	13,677	265.4 M	152,089
50,000 - 100,000 sq. ft.	5,677	176.0 M	74,237
100,000+ sq. ft.	5,965	430.9 M	111,059
< 7,500 sq. ft. & Single Family	913,918	1,459.4 M	934,848
TOTAL	966,671	2,582.4 M	1,430,885

Citywide Buildings by Size



*All single family homes are included in the category of buildings <7,500 sq. ft. to make the dataset more applicable for policy and program design considerations.

Data Source: BEI building inventory, based on tax assessor data.

Medium & Large Buildings Analysis



Medium & Large Building Breakdown

Medium & Large Buildings Criteria

This analysis focused on medium and large buildings in LA, specifically buildings greater than 7,500 sq. ft. Building data was further cleaned and segmented to help inform potential policy and program design considerations.

Buildings were considered “medium and large buildings” if they met any of the following criteria:*

Buildings on parcels with any individual building >7,500 sq. ft.

OR

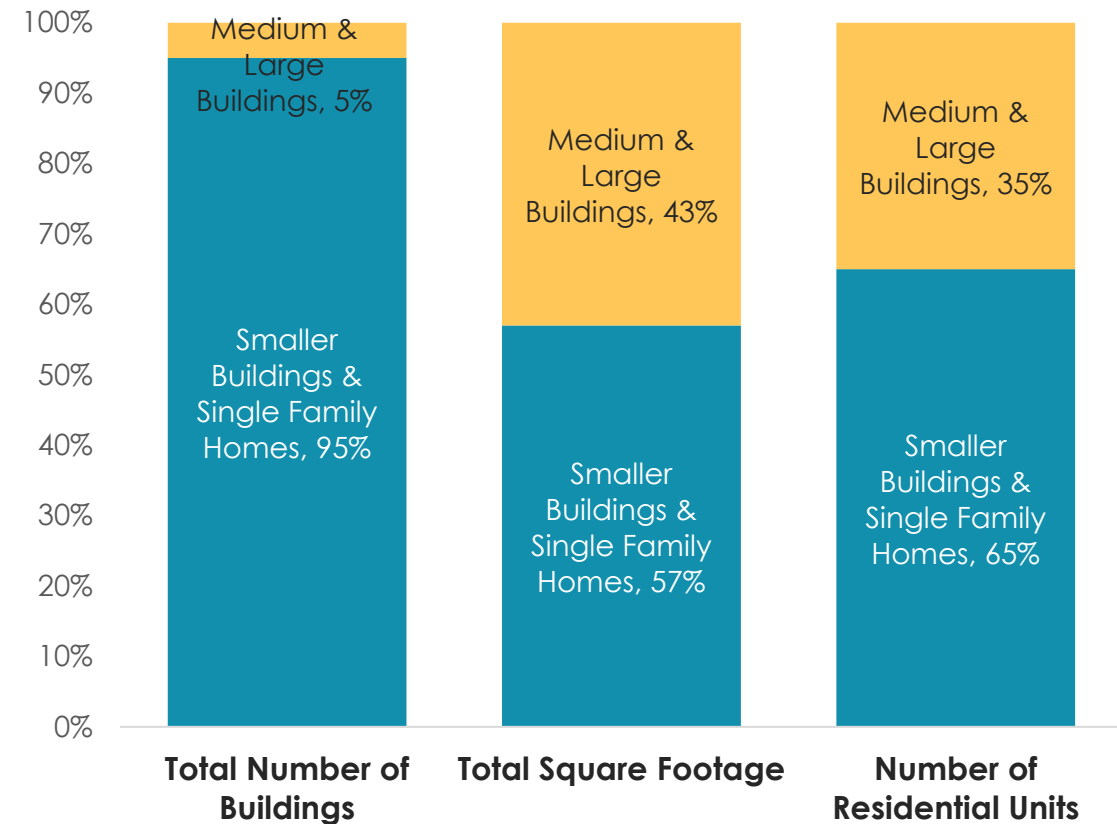
Buildings on parcels with >20,000 sq. ft. of total built square footage, even when individual buildings were <7,500 sq. ft.

OR

All buildings covered under LA’s “Existing Buildings Energy & Water Efficiency” (EBEWE) policy**

The dataset of medium and large buildings prioritized for this analysis account for 5% of total buildings, over 40% of the built square footage, and roughly one-third of residential units in LA.

Citywide Buildings by Analysis Criteria



Medium & Large Buildings Analysis: Technical Indicators



Medium & Large Buildings | Technical Indicators

Technical Indicators

- Building Use
 - Non-residential
 - Residential
- Building Size
- Building Occupancy Types
- Building Vintage

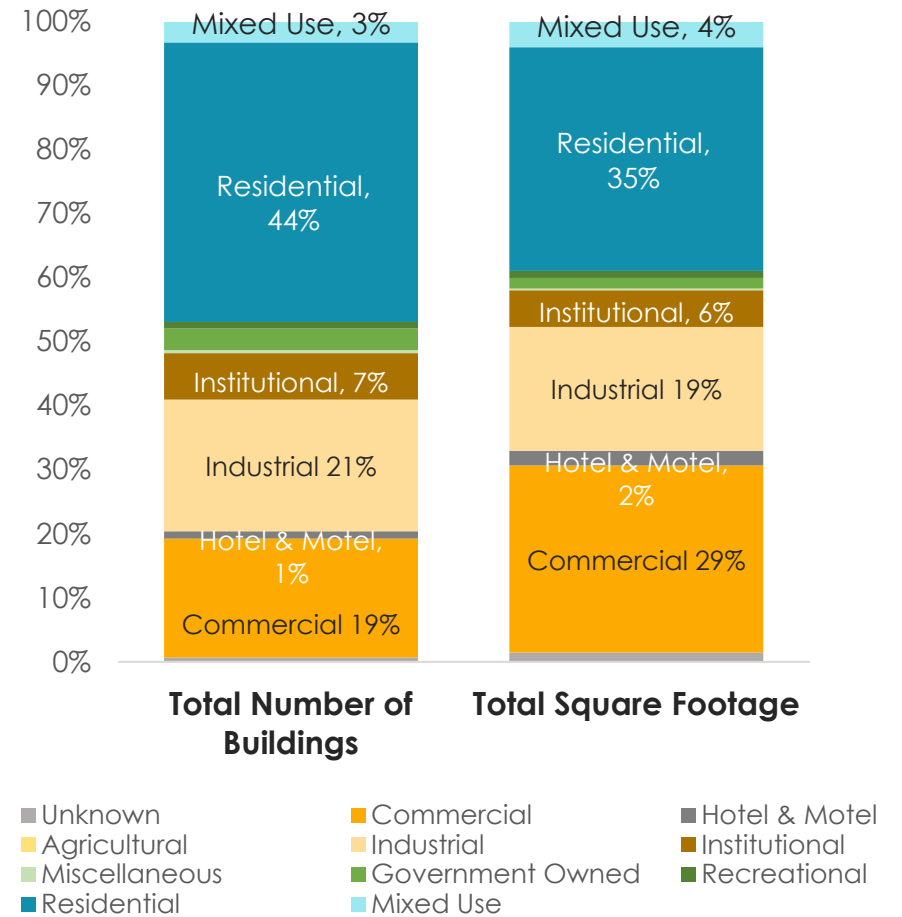
Medium & Large Buildings | Building Use

Over half of medium and large buildings are non-residential buildings, which is a much higher proportion than citywide.

Medium and Large Buildings by Use

Building Use Type	Total Building Count	Total Square Footage	Residential Units
Unknown	369	16.4 M	---
Commercial	9,791	328.3 M	---
Hotel & Motel	606	25.7 M	27,811
Agricultural	3	0.03 M	---
Industrial	10,858	217.3 M	---
Institutional	3,824	64.5 M	---
Miscellaneous	245	2.9 M	---
Government Owned	1,780	18.5 M	---
Recreational	546	12.3 M	---
Residential	23,040	392.7 M	449,363
Mixed Use	1,691	44.3 M	18,863
Total	52,753	1,122.9 M	496,037

Medium & Large Buildings by Use

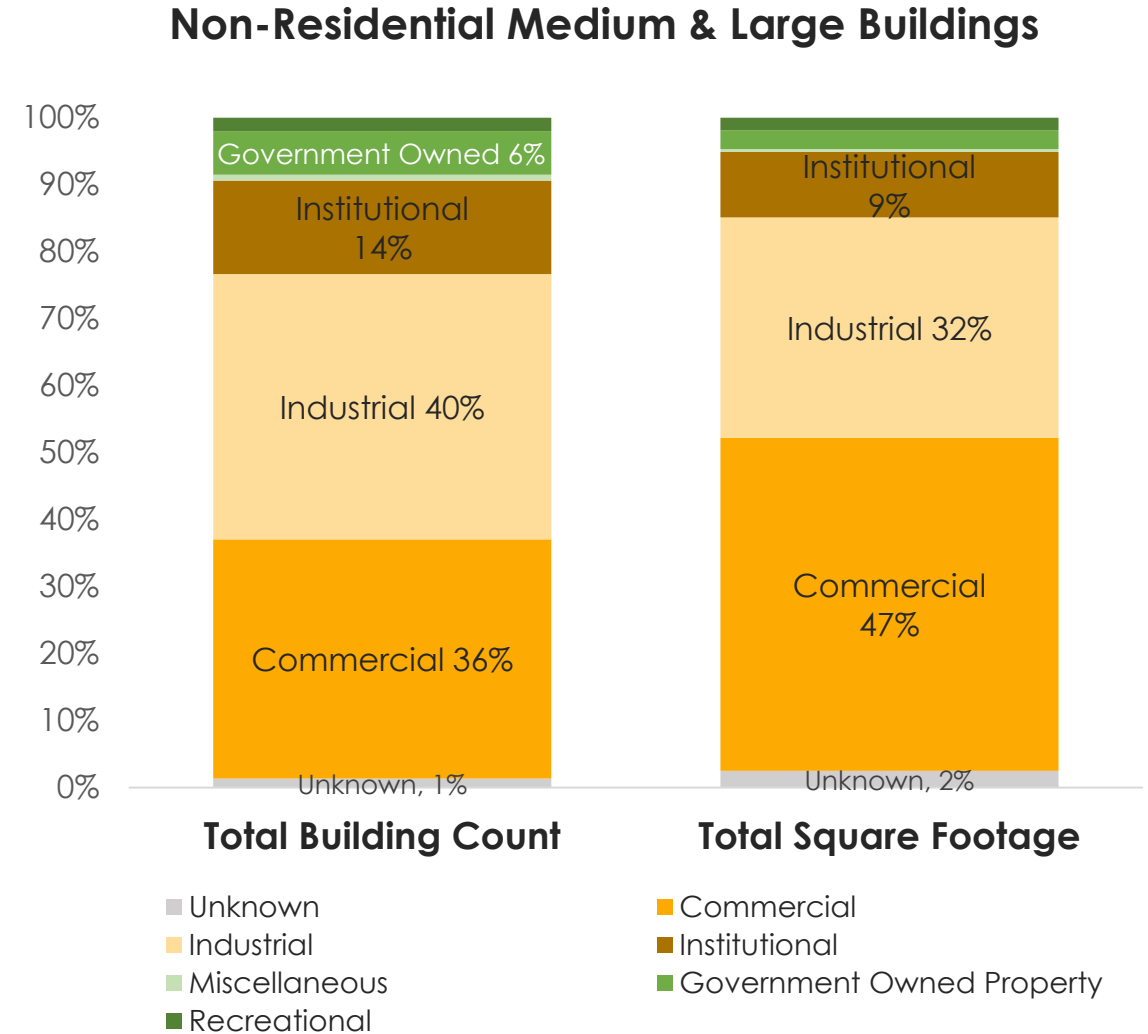


Medium & Large Buildings | Non-Residential Buildings

Commercial and industrial buildings account for most non-residential medium and large buildings, making up over 75% of the buildings and nearly 80% of the built square footage.

Non-residential Medium & Large Buildings

Building Use Type	Total Building Count	Total Square Footage
Unknown	369	16.4 M
Commercial	9,791	328.3 M
Agricultural	3	0.03 M
Industrial	10,858	217.3 M
Institutional	3,824	64.5 M
Miscellaneous	245	2.9 M
Government Owned Property	1,780	18.5 M
Recreational	546	12.3 M
Total	27,416	704.5 M



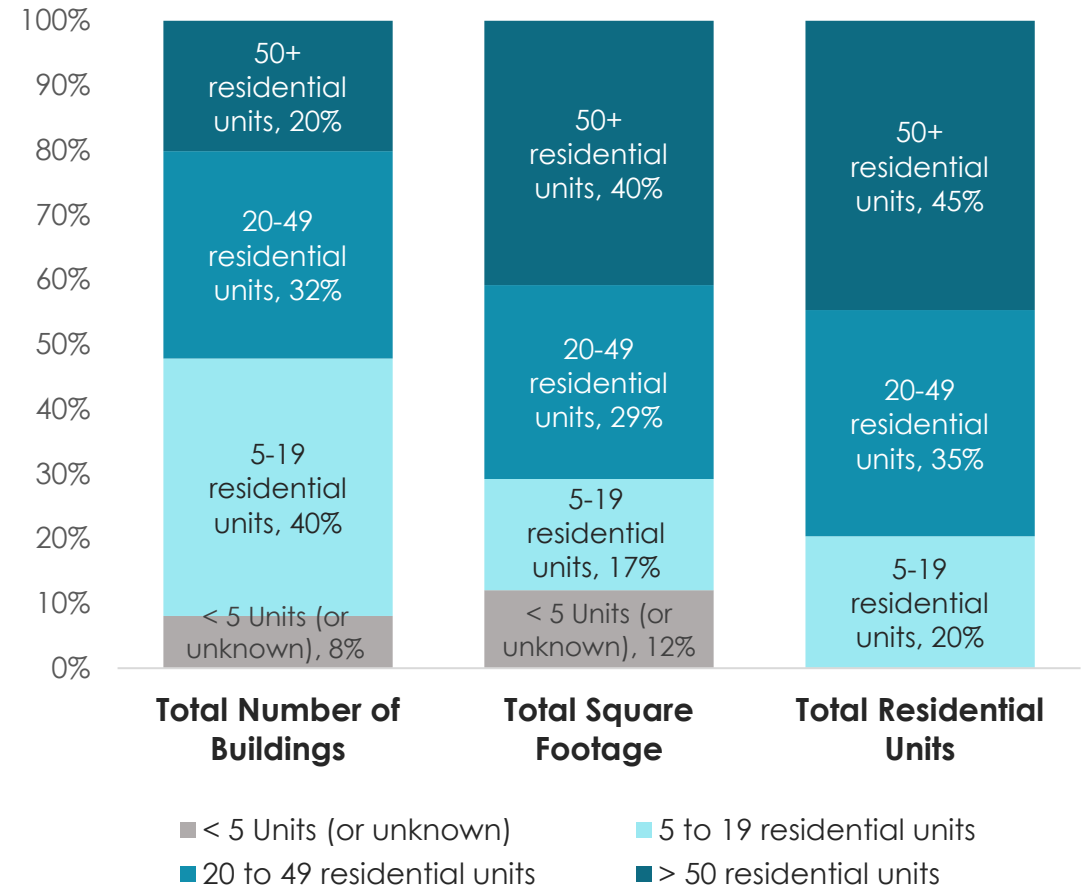
Medium & Large Buildings | Residential Buildings

More than 25,000 medium and large residential buildings account for nearly 500,000 residential units in LA. Roughly 45% of these units are in very large buildings that have 50 units or more.

Residential Units in Medium & Large Buildings

Unit Thresholds	Total Number of Buildings	Total Square Footage	Total Residential Units
< 5 Units (or unknown)	2,065	56.1 M	304
5 to 19 residential units	10,186	80.0 M	100,579
20 to 49 residential units	8,203	139.4 M	173,035
50+ residential units	5,157	190.1 M	221,178
Total Residential & Mixed Use	25,611	475.6 M	495,096

Residential Medium & Large Buildings by Unit Count



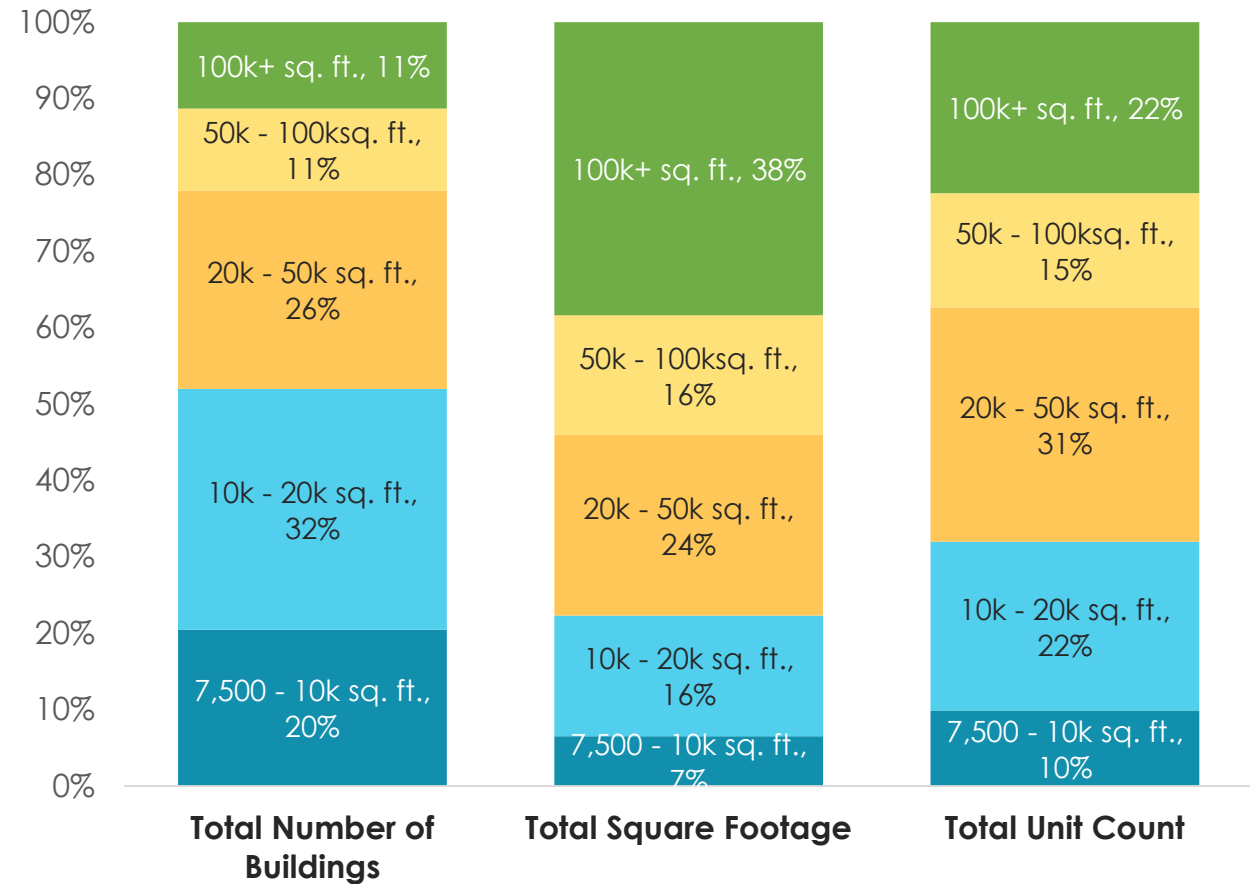
Medium & Large Buildings | Building Size

A majority of medium and large buildings (52%) are **7,500-20,000 sq. ft.** However, buildings over 20,000 sq. ft. account for most of the built square footage and residential units.

Medium & Large Buildings by Building Size Threshold

Size Threshold	Total Number of Buildings	Total Square Footage	Total Unit Count
7,500 - 10k sq. ft.	10,795	73.3 M	49,051
10k - 20k sq. ft.	16,639	177.3 M	109,601
20k - 50k sq. ft.	13,677	265.4 M	152,089
50k - 100ksq. ft.	5,677	176.0 M	74,237
100k+ sq. ft.	5,965	430.9 M	111,059
Total	52,753	1,123 M	496,037

Medium & Large Buildings by Size Threshold



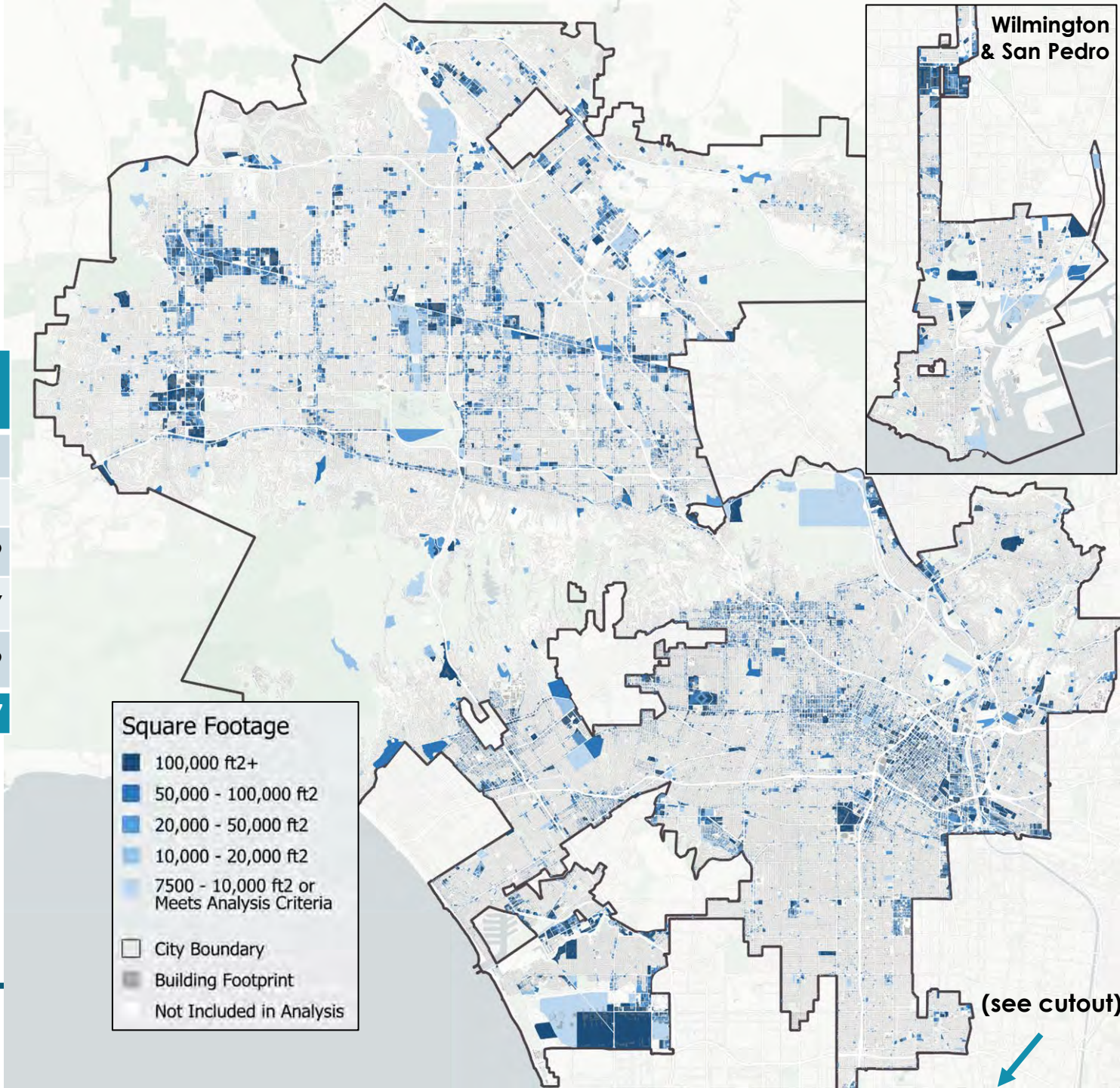
Medium & Large Buildings

Buildings by Size and Location

Medium & Large Buildings by Building Size Threshold

Size Threshold	Total Building Count	Total Square Footage	Total Unit Count
7,500 - 10k sq. ft.	10,795	73,313,614	49,051
10k - 20k sq. ft.	16,639	177,343,599	109,601
20k - 50k sq. ft.	13,677	265,383,627	152,089
50k - 100ksq. ft.	5,677	176,028,127	74,237
100k+ sq. ft.	5,965	430,880,171	111,059
Total	52,753	1,122,949,138	496,037

Note: Entire parcels are highlighted on map, as opposed to the building footprints.
 Data Source: BEI building inventory, based on tax assessor data

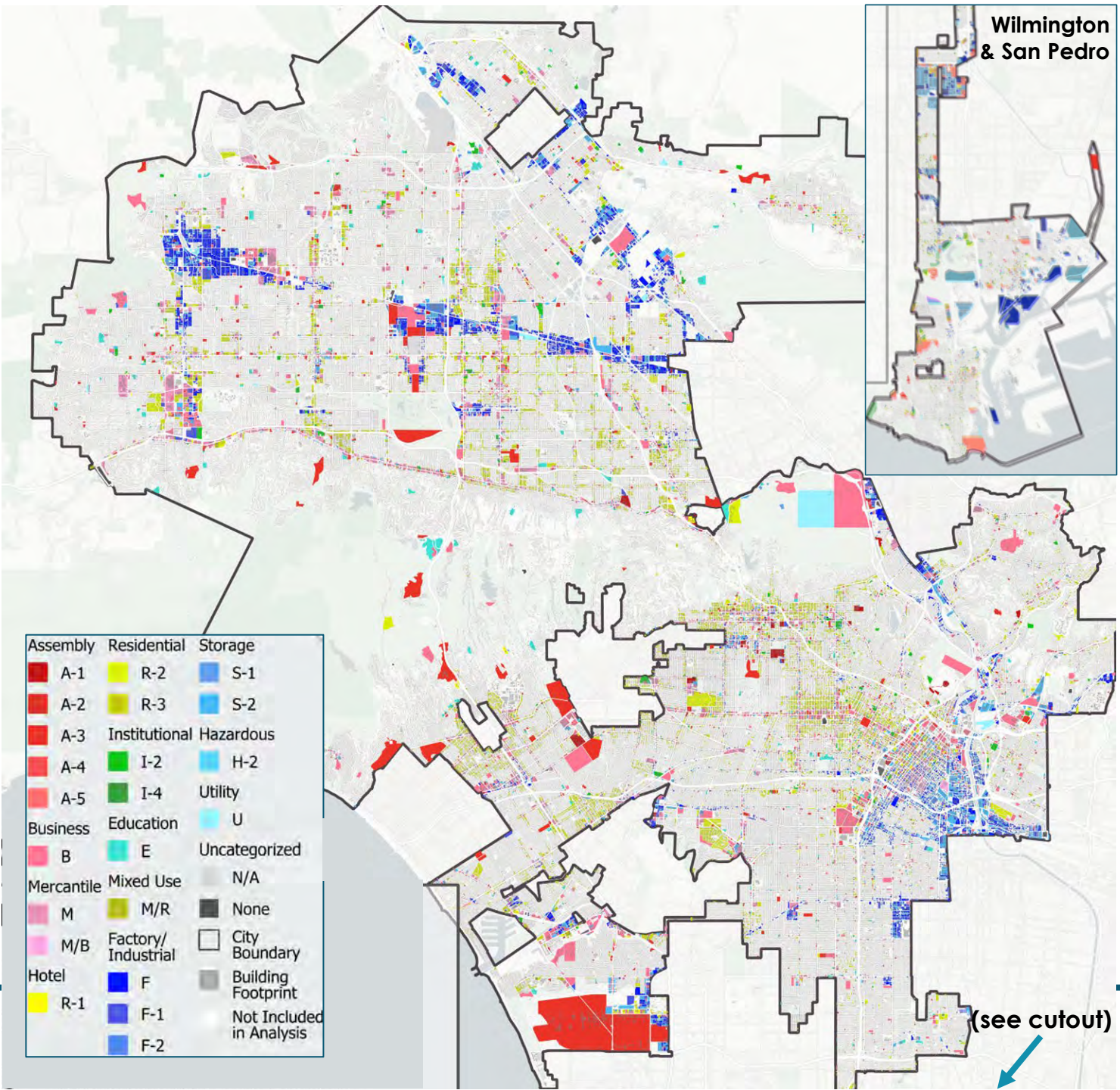


Medium & Large Buildings

Building Occupancy Types

Building Occupancy Type*	# of Bldgs	Total sq. ft.
Assembly & Restaurants (A-1 thru A-5)	2,973	41.9 M
Business & Offices (B)	4,783	190.8 M
Mercantile/Retail (M, M/B)	4,722	103.0 M
Hotel (R-1)	606	25.7 M
Residential (R-2, R-3)	23,026	391.9 M
Mixed Use (M/R)	827	27.2 M
Factory/Industrial (F, F-1, F-2)	7,121	127.1 M
Storage (S-1, S-2)	5,254	152.0 M
Hazardous (H-2)	673	712 M
Utility (U)	377	6,154.1 M
Institutional (I-2, I-4)	754	27.2 M
Education (E)	1,172	12.0 M
Uncategorized (N/A)	465	17.2 M

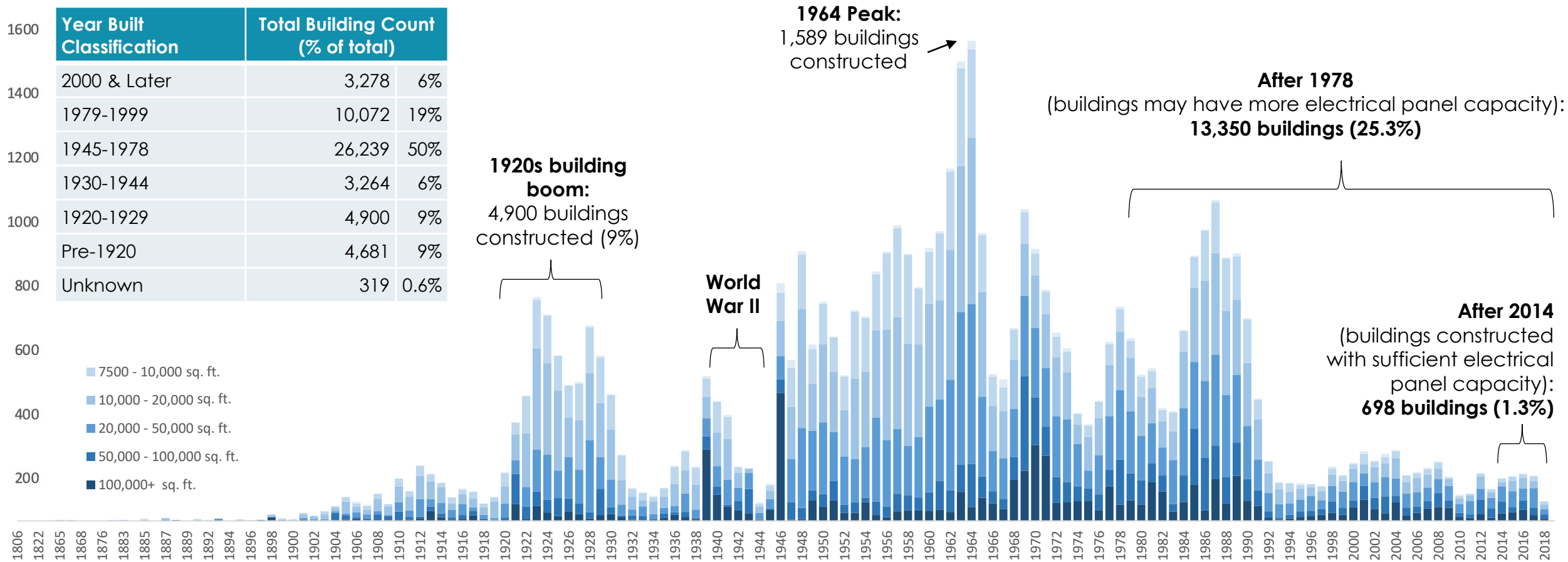
*Building occupancy types are pulled from the California Building Code.



Medium & Large Buildings | Vintage

Medium & Large Buildings by Year Built and Size Threshold

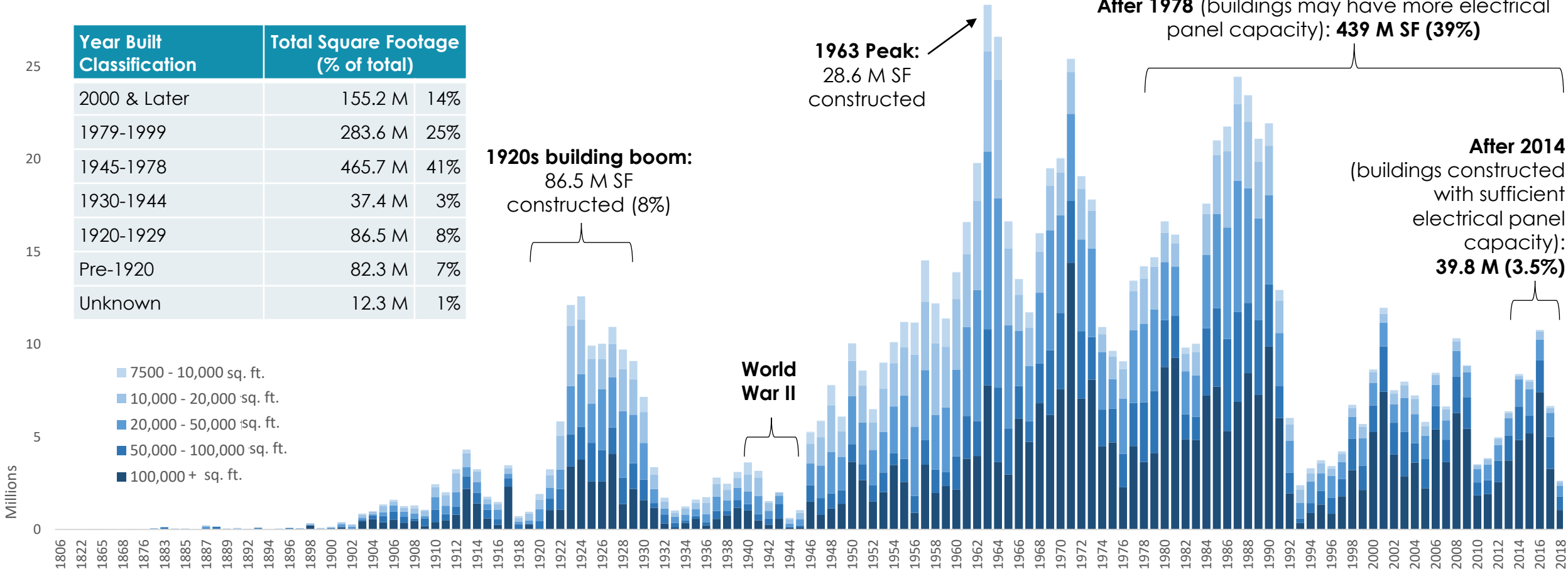
Year Built Classification	Total Building Count	(% of total)
2000 & Later	3,278	6%
1979-1999	10,072	19%
1945-1978	26,239	50%
1930-1944	3,264	6%
1920-1929	4,900	9%
Pre-1920	4,681	9%
Unknown	319	0.6%



Medium & Large Buildings | Vintage

Medium & Large Building Square Footage by Year Built and Size Threshold

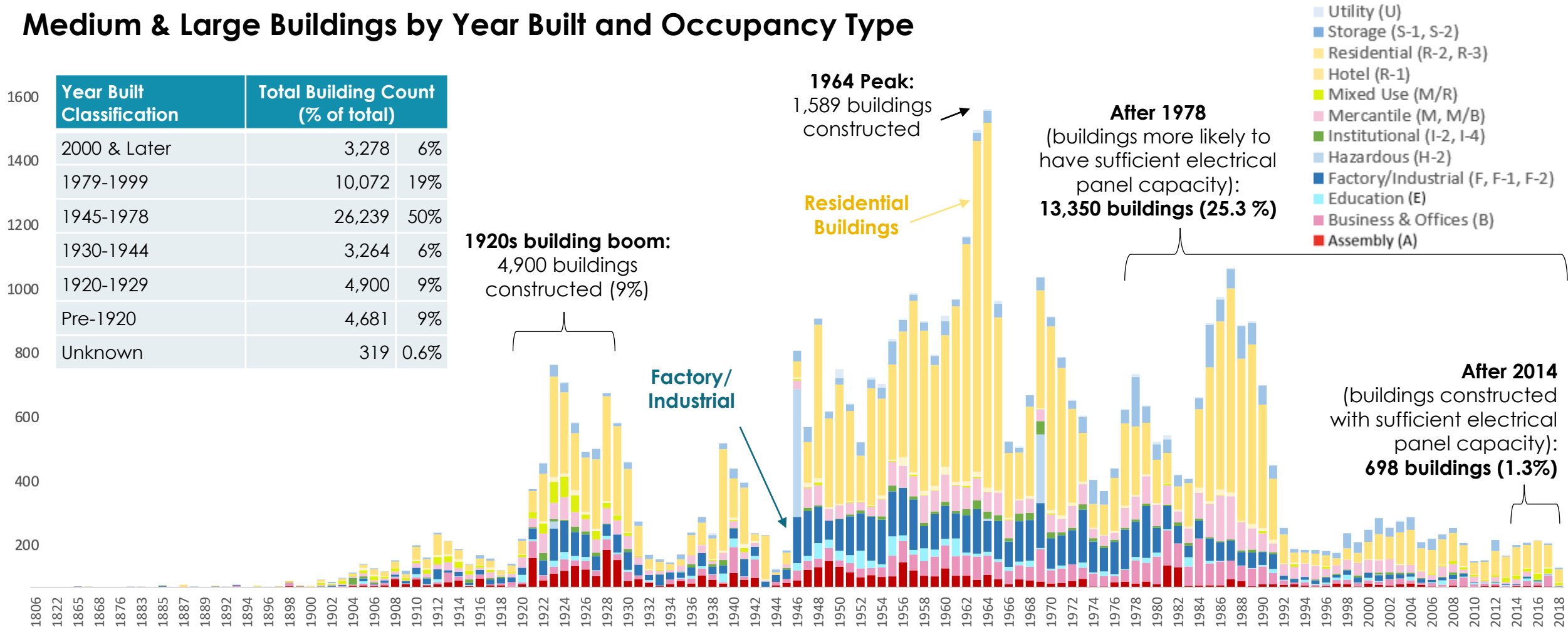
Year Built Classification	Total Square Footage (% of total)
2000 & Later	155.2 M 14%
1979-1999	283.6 M 25%
1945-1978	465.7 M 41%
1930-1944	37.4 M 3%
1920-1929	86.5 M 8%
Pre-1920	82.3 M 7%
Unknown	12.3 M 1%



Medium & Large Buildings | Vintage

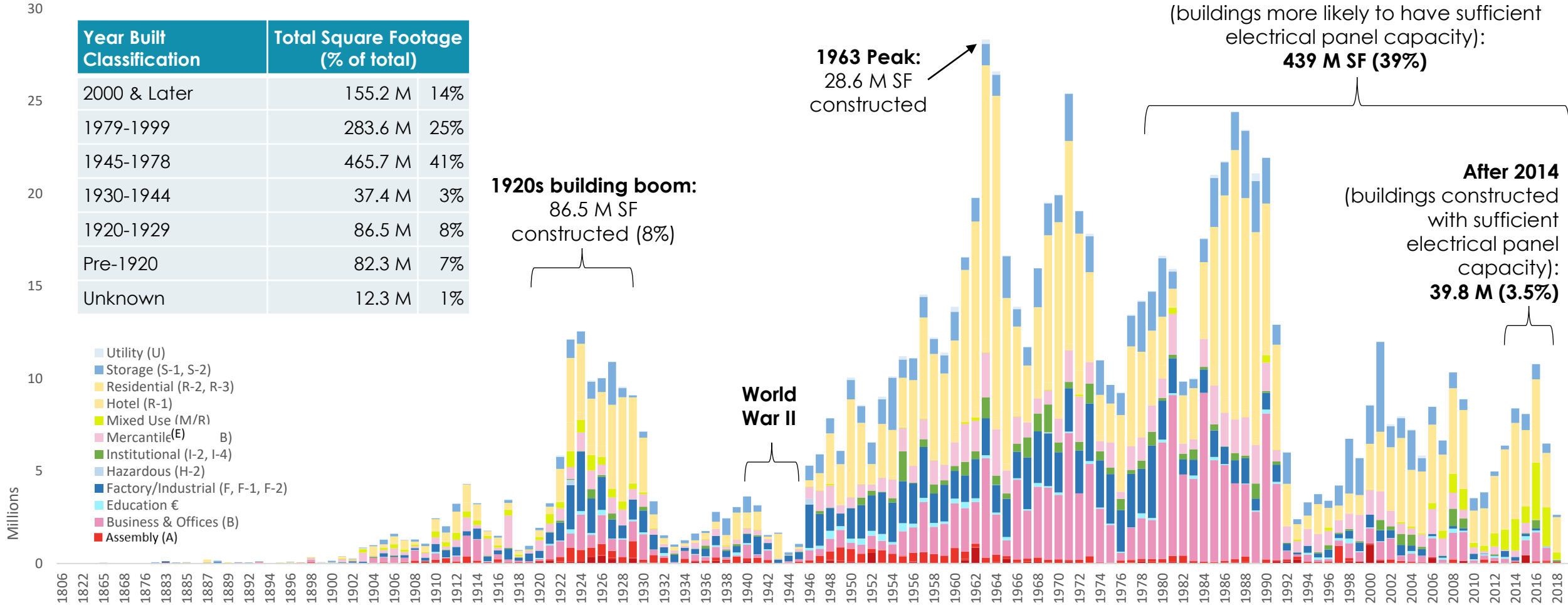
Medium & Large Buildings by Year Built and Occupancy Type

Year Built Classification	Total Building Count	(% of total)
2000 & Later	3,278	6%
1979-1999	10,072	19%
1945-1978	26,239	50%
1930-1944	3,264	6%
1920-1929	4,900	9%
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Medium & Large Buildings | Vintage

Medium & Large Building Square Footage by Year Built and Occupancy Type



Medium & Large Building Vintage

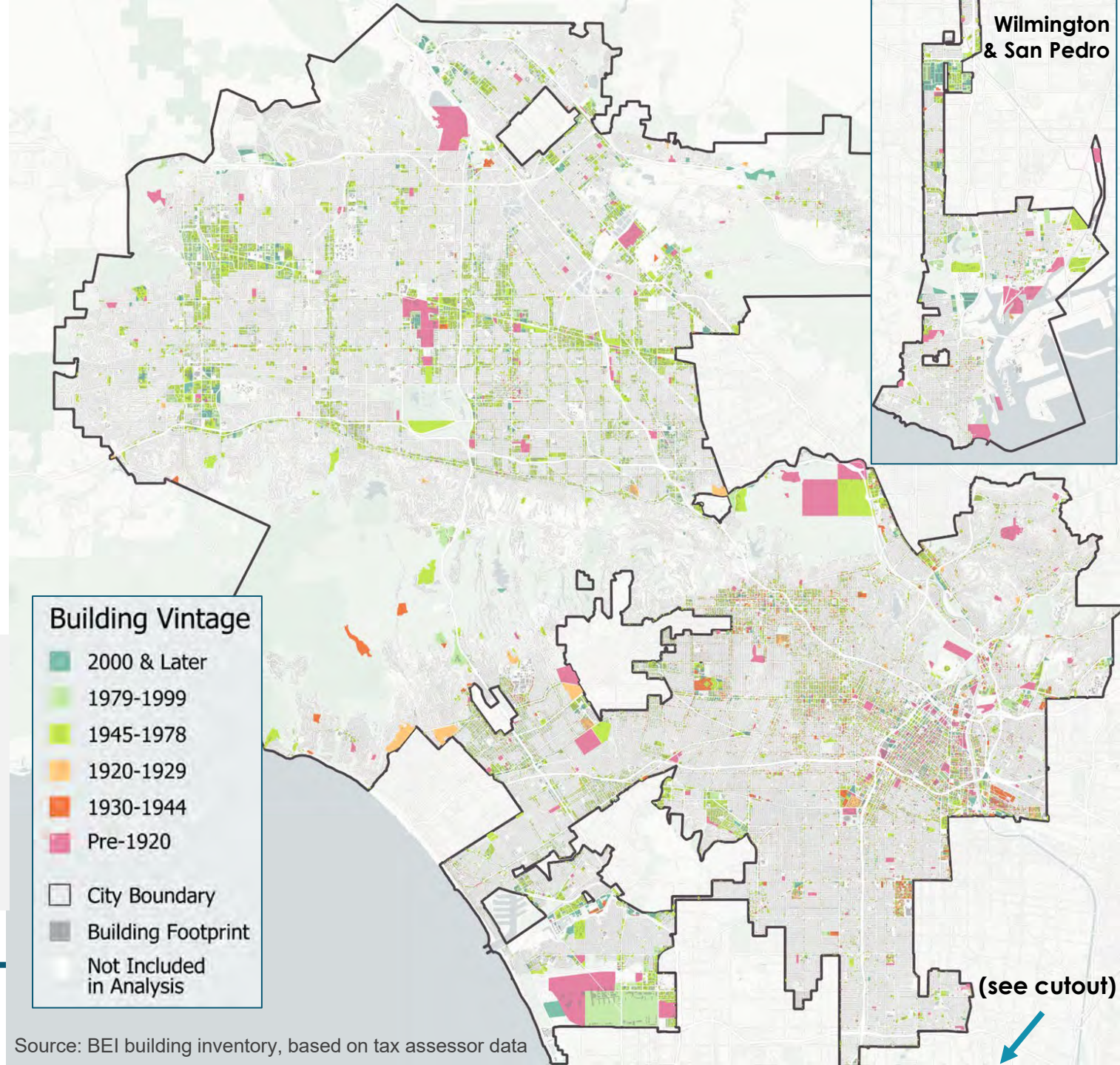
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1930-1944	3,264	6%
1920-1929	4,900	9%
Pre-1920	4,681	9%
Unknown	319	0.6%

75% of buildings in analysis were built before 1978.

These buildings likely have older mechanical and electrical systems.

9% of buildings are a century old or older.

25% of buildings were built after 1978 and may be more likely to have higher electrical panel capacity.



Energy Analysis

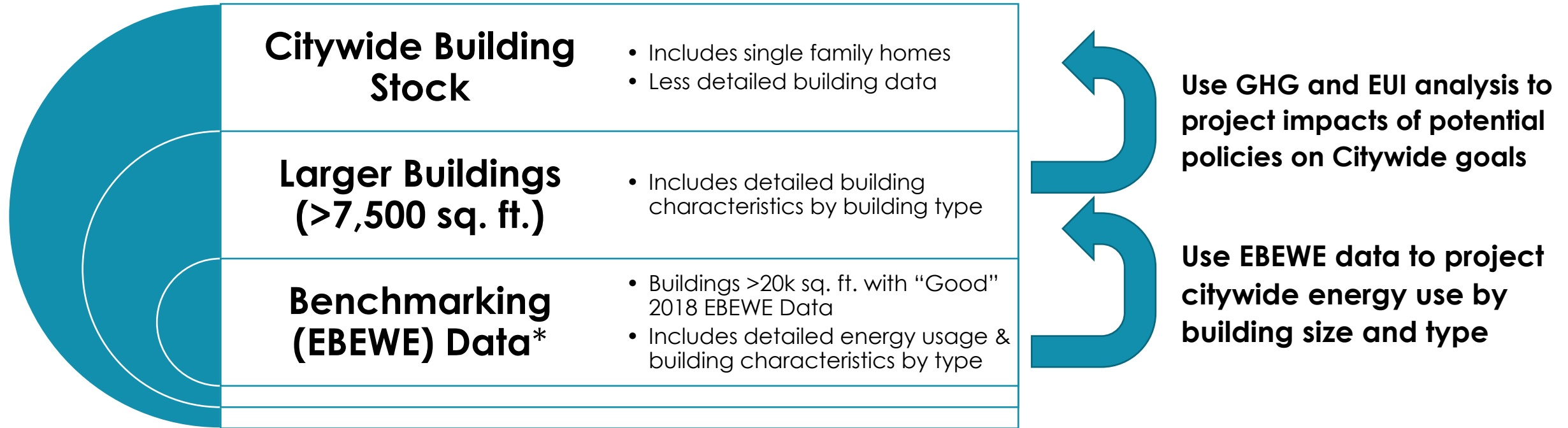
Extrapolating Benchmarking Data to
Estimate Broader Energy Use



Energy Analysis | Methodology

Estimating Energy Usage of Building Stock

Building-level energy usage data is difficult to attain. In LA, a subset of building energy data is available from buildings that have reported through the City's Existing Buildings Energy & Water Efficiency (EBEWE) ordinance. The BEI team used data available from EBEWE-compliant buildings to estimate energy usage across the building stock by type and size threshold.



Energy Analysis | Building Size Thresholds

Building Size Thresholds for Energy Analysis

BEI developed the following building size thresholds for the citywide energy use analysis.

Building Size Thresholds for Energy Analysis And Percentage of Citywide Building Stock

Threshold	Total Building Count		Square Footage		Residential Units	
>7,500 sq. ft.*	52,753	5%	1,123 M	43%	496,037	35%
>10,000 sq. ft.	41,958	4%	1,050 M	42%	446,986	31%
>20,000 sq. ft.	25,319	3%	872 M	34%	337,385	24%
>50,000 sq. ft.	11,642	1%	607 M	23%	185,296	13%
>100,000 sq. ft.	5,965	1%	431 M	16%	111,059	8%

*Analysis simplified to buildings >7,500 sq. ft. and buildings <7,500 sq. ft. In this analysis, buildings that are >7,500 sq. ft. include some single family homes and exclude some EBEWE buildings.

Energy Analysis | Citywide Extrapolation

Projected Energy Usage by Size Threshold

EBEWE data is used to estimate the total energy use of buildings over certain sizes citywide. The average energy use intensity per square foot (EUI) by building type from cleaned EBEWE data was applied to the total square footage in each size threshold to project the total estimated energy use, electricity use, and gas use for all buildings over a given size.

Projected Energy Use by Size Threshold

Threshold	Total Building Count		Square Footage*		Est. Energy Usage (Billion BTU)		Est. Electricity Usage (Billion BTU)		Est. Gas Usage (Billion BTU)	
	Count	%	Sq. Ft.	%	Value	%	Value	%	Value	%
>7,500 sq. ft.	52,753	5%	1,123 M	43%	51,525	37%	35,456	52%	16,069	22%
>10,000 sq. ft.	41,958	4%	1,050 M	42%	48,341	35%	33,506	49%	14,834	21%
>20,000 sq. ft.	25,319	3%	872 M	34%	40,675	29%	28,548	28%	12,127	12%
>50,000 sq. ft.	11,642	1%	607 M	23%	28,415	20%	20,446	19%	7,968	8%
>100,000 sq. ft.	5,965	1%	431 M	16%	20,215	14%	14,682	13%	5,532	5%

Applying a policy to:

Buildings >7,500 sq. ft. would affect **37% of total building energy use**, 52% of electricity use, and 22% of gas use in LA

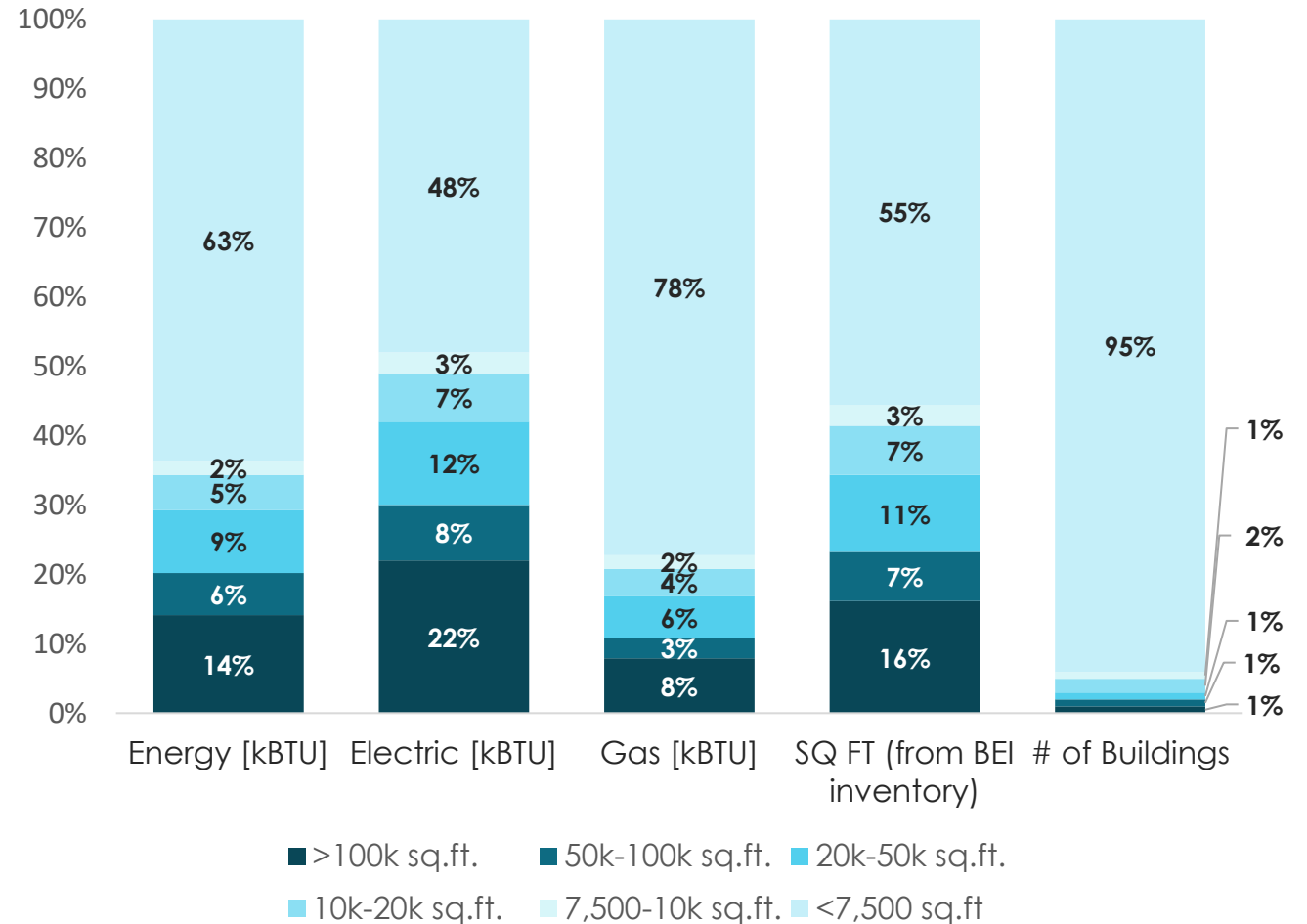
Buildings >100,000 sq. ft. would affect **14% of total building energy use**, 13% of electricity use, and 5% of gas use in LA

Energy Analysis | Citywide Comparison

Takeaways

- Buildings over 7,500 sq. ft. account for just 5% of buildings in LA, but almost 40% of citywide building energy use.
- Very large buildings over 100,000 sq. ft. account for just 1% of buildings citywide, but 14% of building energy use.
- Developing policies for buildings over 7,500 sq. ft. will address a substantial portion of GHG emissions, but would still need to be paired with additional policies for smaller buildings in order to meet LA's Green New Deal goals.

Citywide Energy Use by Size Threshold



Ownership & Decision- Making Indicators



Ownership & Decision-Making Indicators

Ownership & Decision-Making Indicators

Based on policy relevance and data availability, this analysis focuses on affordable housing for ownership and decision-making indicators.

- Affordable Housing Analysis
 - Key Definitions
 - Affordable Multifamily Units
 - Subsidized Affordable Units
 - Unsubsidized Affordable Units
 - Affordable Housing Funding Sources

Affordable Housing | Key Definitions

Understanding the various types of affordable housing is key to identifying how to best support low- and moderate-income residents under future building-level policies and programs. Definitions are provided below for the housing sectors referenced in this analysis, as well as some considerations that should be supplemented with local market research and stakeholder engagement.

Subsidized (or regulated) Affordable Housing: Building owner receives tax credits, grants, and/or loans in exchange for restrictions on rents; often also includes restrictions on allowable income levels for residents.

- Considerations: Buildings have strictly set capital improvement timelines, financing cycles, and potentially several sources of regulations specific to funding sources

Unsubsidized (or unregulated) Affordable Housing: Housing that is currently priced below market rate and/or is affordable to existing residents but is not subject to regulations restricting rents or incomes. This may be referred to as naturally occurring affordable housing, or NOAH.

- This category is often difficult to identify and define. This analysis relies on research developed by Elevate Energy that identifies unsubsidized affordable housing as housing located in census tracts where the average income is less than 80% Area Median Income (AMI).
- Considerations: This may house low-income and other disadvantaged populations but does not have the same rent restrictions as subsidized housing. Tenant protections and resources need to be carefully designed.

Market Rate Housing: The remaining housing is considered market rate housing. This housing may already be unaffordable to tenants and similar protections may be needed for vulnerable tenants in market rate housing, particularly in gentrifying areas.

Affordable Housing | Multifamily Units

BEI analyzed data provided by Elevate Energy to understand the breakdown of affordability designations for multifamily housing in LA.

Multifamily Unit Totals by Affordability Designation

Affordability Designation	Number of Units
Market Rate	269,088 (39%)
Unsubsidized Affordable Housing	344,985 (50%)
Subsidized Affordable Housing	75,896 (11%)

Takeaways: 50% of residential units in multifamily buildings are in unsubsidized affordable buildings, while only 11% of units are in subsidized affordable buildings. LA's Rent Stabilization Ordinance limits rent increases for tenants in pre-1978 buildings, but rents can be raised to market rate when a tenant moves out.

This means that the vast majority of units in LA's multifamily buildings have limited to no affordability protections.

Multifamily Affordability Designation

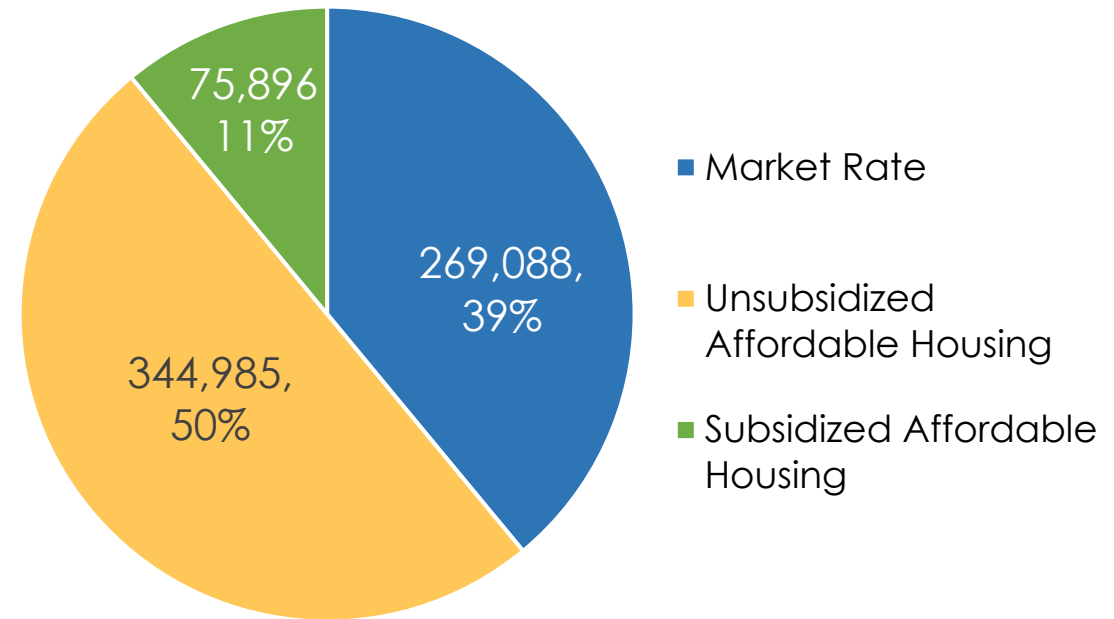


Chart source: Based on Elevate Energy's analysis for [EEFA report: Affordable Homes First](#).

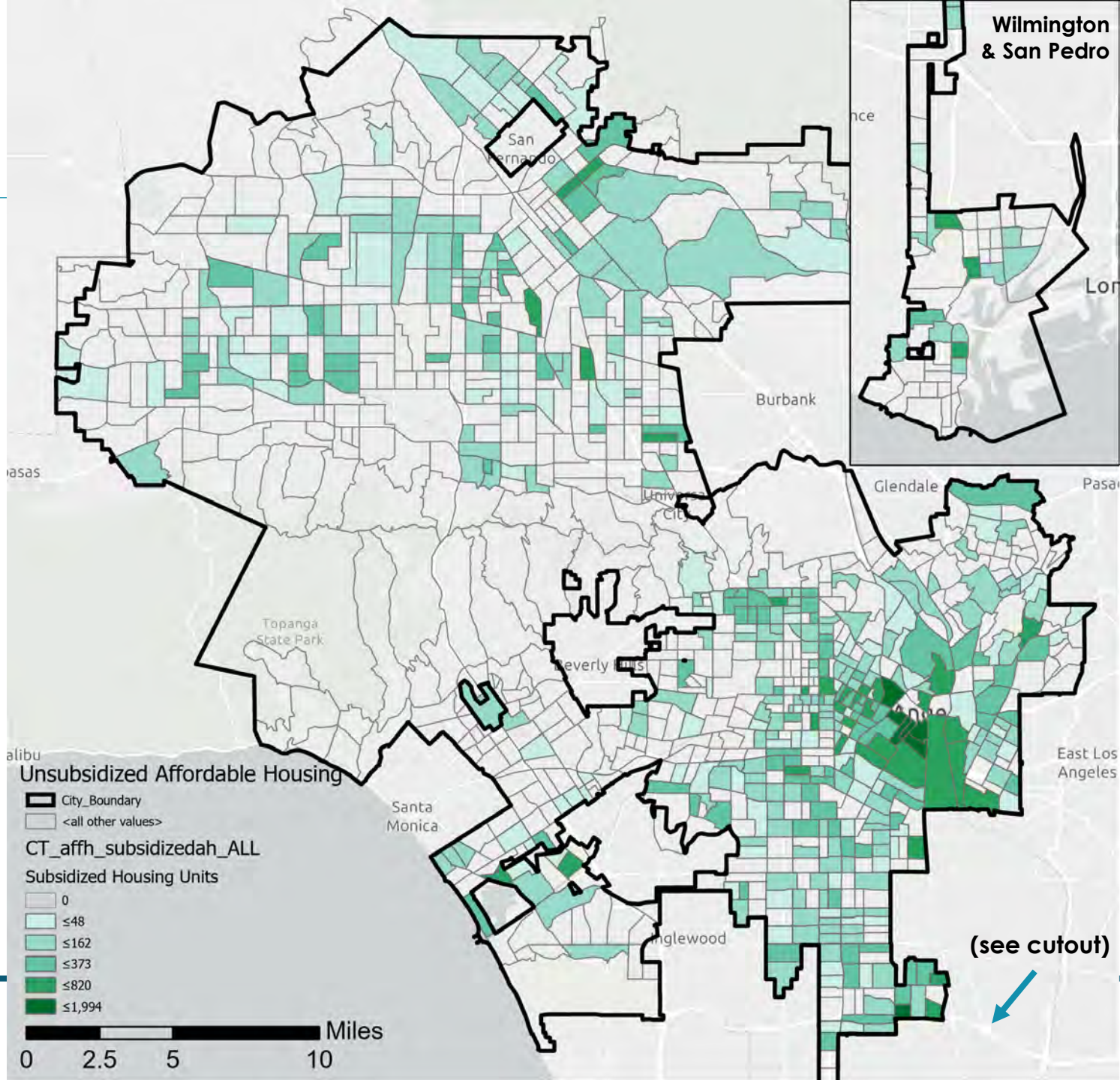
Affordable Housing | Subsidized Units

Neighborhoods with Highest Subsidized Unit Count*

Neighborhood	Subsidized Units
1. Downtown	8,013
2. Westlake	6,681
3. Hollywood	2,620
4. Koreatown	2,277
5. East Hollywood	2,045
6. Boyle Heights	1,972
7. Pico-Union	1,538
8. Panorama City	1,429
9. Pacoima	1,318
10. Reseda	1,269

Total Subsidized Units: 71,981

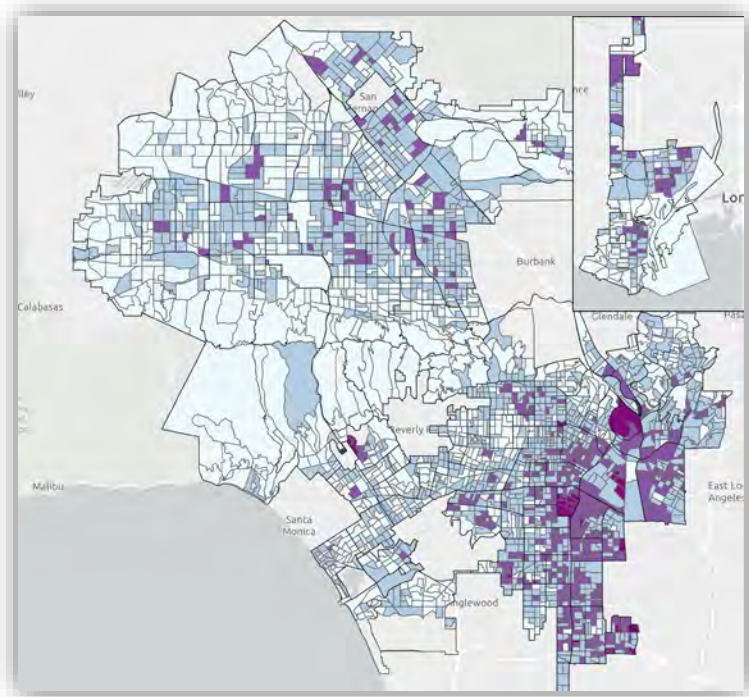
*Note: Neighborhoods with the most subsidized affordable housing align with most populous neighborhoods in LA, and the top four match those with the highest unit counts.



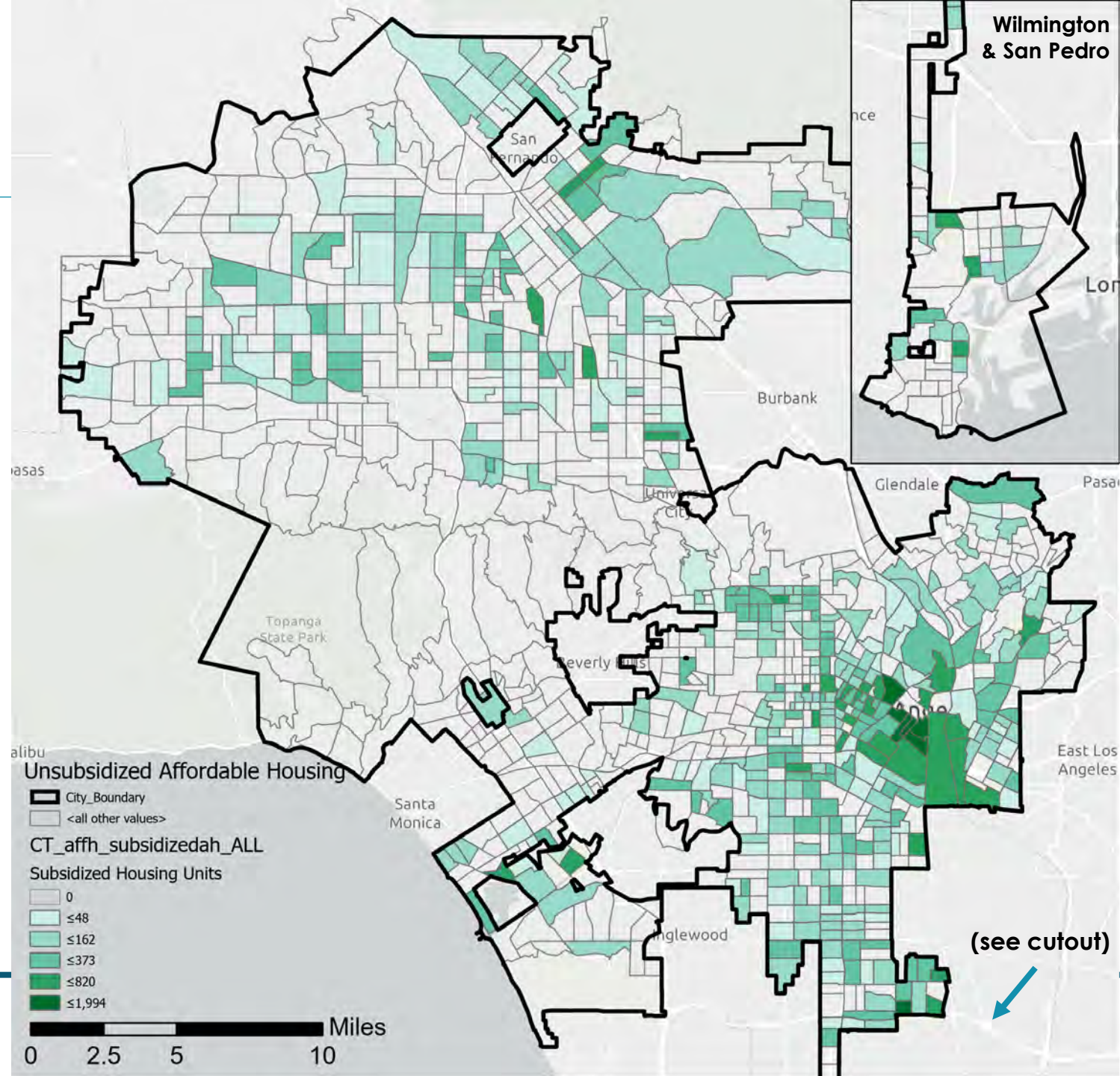
Affordable Housing | Subsidized Units

Subsidized units align with low-income populations but do not house all concentrations of low-income communities.

Low-Income Population*



*Low-income map is by census block group, while subsidized unit map is by census tracts.



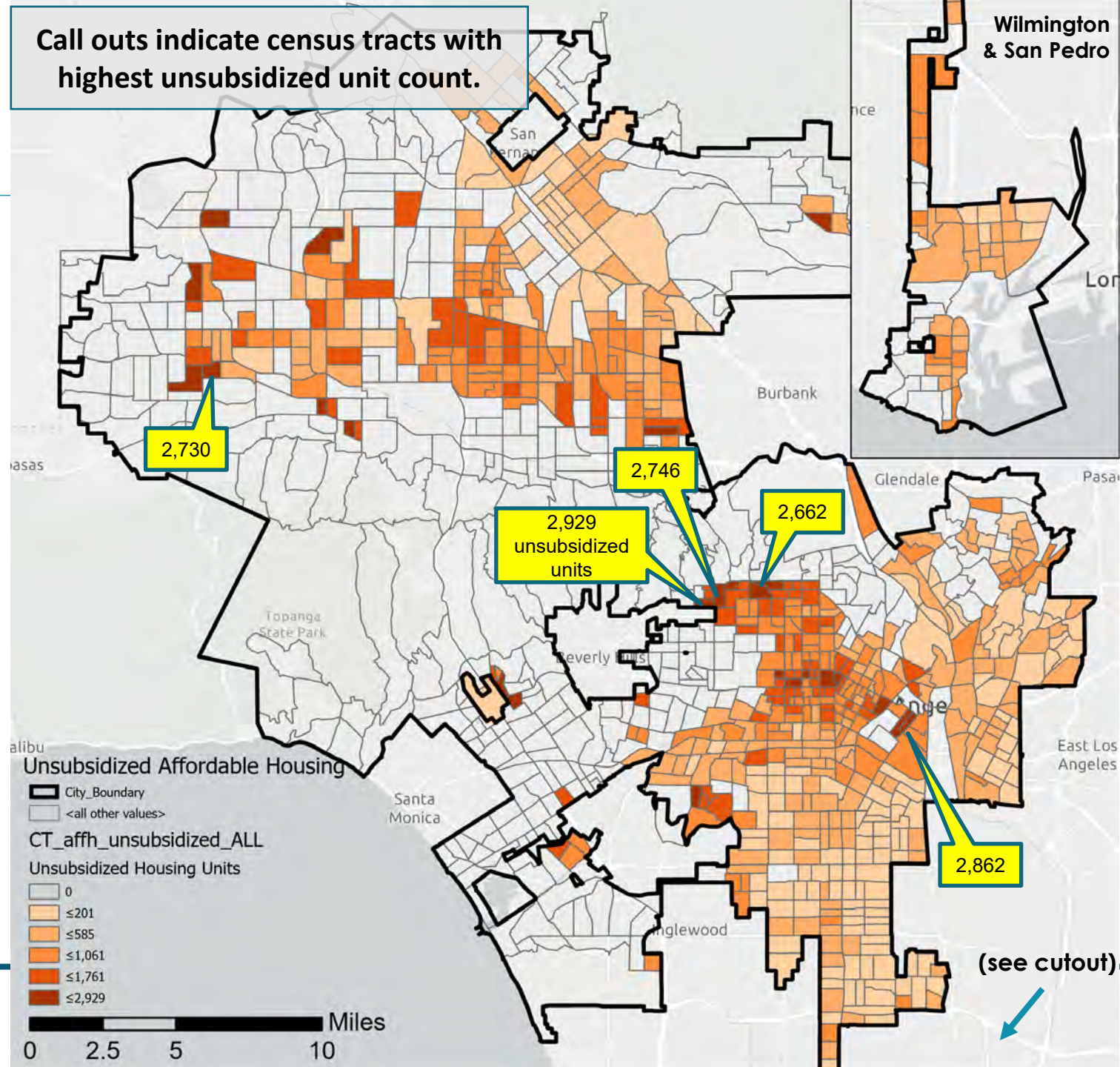
Affordable Housing | Unsubsidized Units

BEI used analysis from Elevate Energy to identify unsubsidized affordable housing in LA.

Unsubsidized affordable housing is defined in this analysis as housing located in census tracts where the average income is less than 80% Area Median Income (AMI).

Based on this analysis, unsubsidized units represent 50% of all multifamily units in LA. These units are concentrated in **southeast LA in and around Downtown**, as well as throughout the **San Fernando Valley**.

GIS data source: Based on Elevate Energy's analysis for [EEFA report: Affordable Homes First](#) (utilizes 2017 ACS data). Map created by BEI.



Subsidized Affordable Housing | Funding

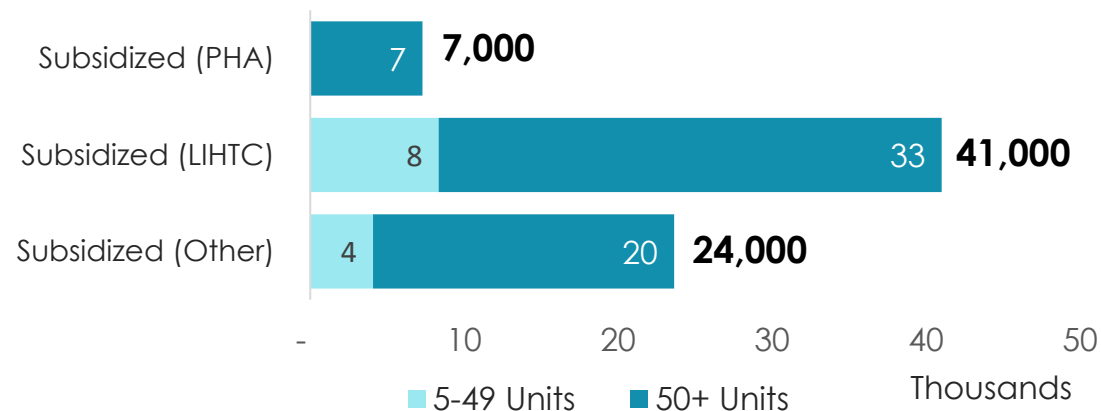
Different funding sources for affordable housing have distinct regulations and financing cycles, which can be helpful to understand when designing building-level programs or policies.

The primary funding sources for subsidized affordable housing in LA include:*

- **Public Housing Authority (PHA):** Manages publicly owned and operated housing, as well as rental assistance programs. In LA this is the Housing Authority of City of LA (HACLA).
- **Low-income housing tax credits (LIHTC):** Provides federal income tax credits to private investors as an incentive to develop income-restricted units. Often supplemented with other funding sources, and may exist in mixed income buildings.
- **Other:** This could include California Housing Finance Agency (CalHFA, state run housing) or US Dept of Housing & Urban Development (HUD, federal funding for affordable housing).

*Additional funding sources may also be available but were not included in this analysis.

Subsidized Multifamily Units by Funding Source



Of the nearly 72,000 subsidized units in LA's multifamily buildings, more than half are funded through LIHTC.

Social Vulnerability Indicators



Social Vulnerability Indicators

Social Vulnerability Indicators

Indicators of social vulnerability can help identify communities and residents who may be more positively or negatively impacted by potential policies and programs.

- Low-Income Population
- Race Distribution
- Disadvantaged Communities (DACs)
- Historically Redlined Areas

Low-Income Population

The low-income population is concentrated in census tracts in **Downtown, University Park, Central Alameda, and Watts.**

In census tracts with highest concentration of low-income individuals (43 – 87.1%):

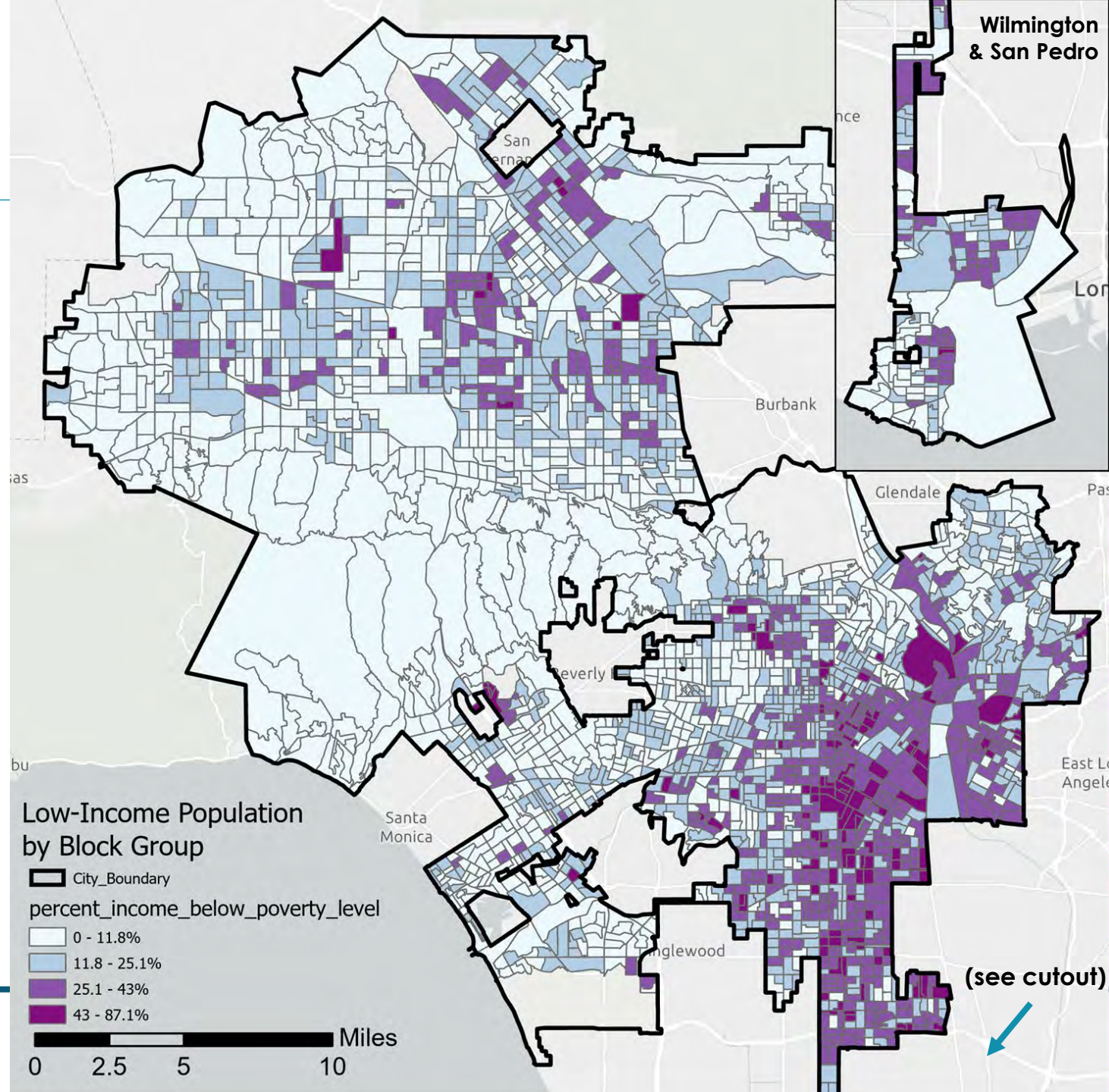
- **There are 29,052 buildings.** 61% of these buildings are 1-4 unit homes.
- **There are 3,756 medium and large buildings** (buildings >7,500 sq. ft.).

Note: “Low-income” is defined as below the federal poverty line, using the following thresholds:

Federal Poverty Line (2019)	
Individual	\$13,011
2 People	\$16,521
3 People	\$20,335

Source: [Federal Poverty Line](#)

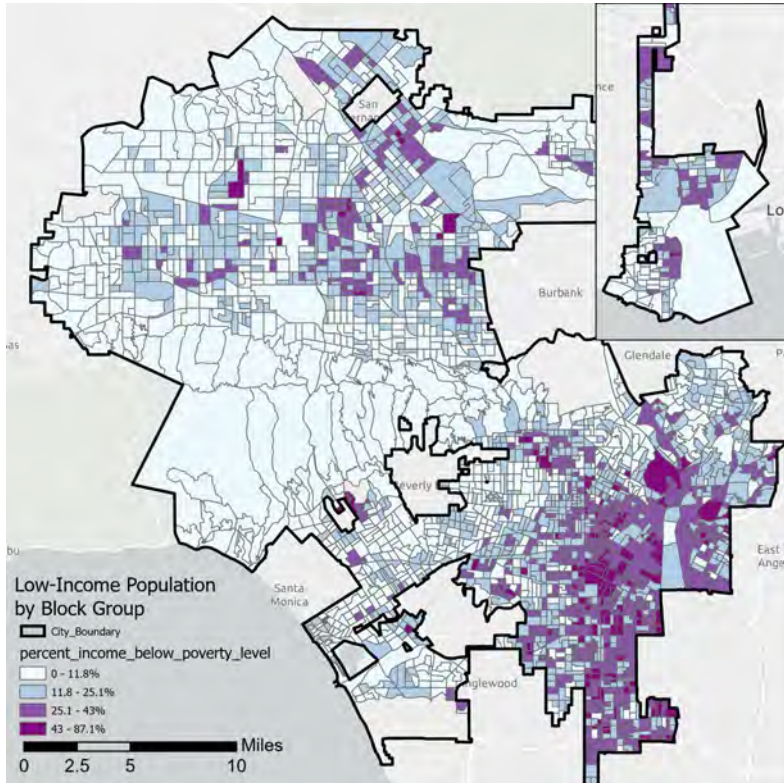
Source: 2019 ACS 1-Yr Survey, BEI building inventory. Map created by BEI.



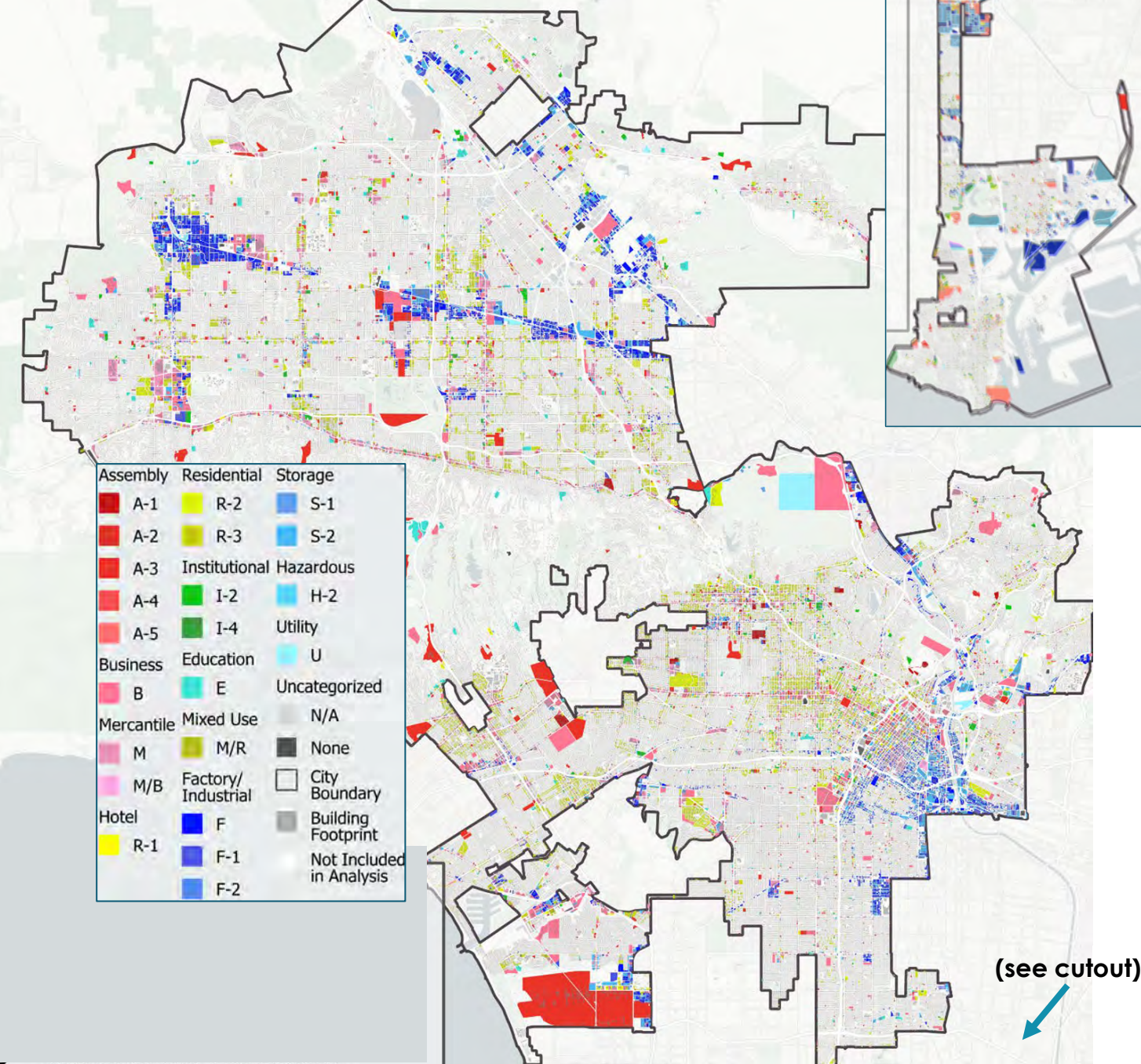
Low-Income Population

Medium and large buildings tend to be located predominantly in low-income areas of the city, including near industrial corridors and commercial districts.

Low-Income Population



Medium & Large Buildings by Occupancy Type

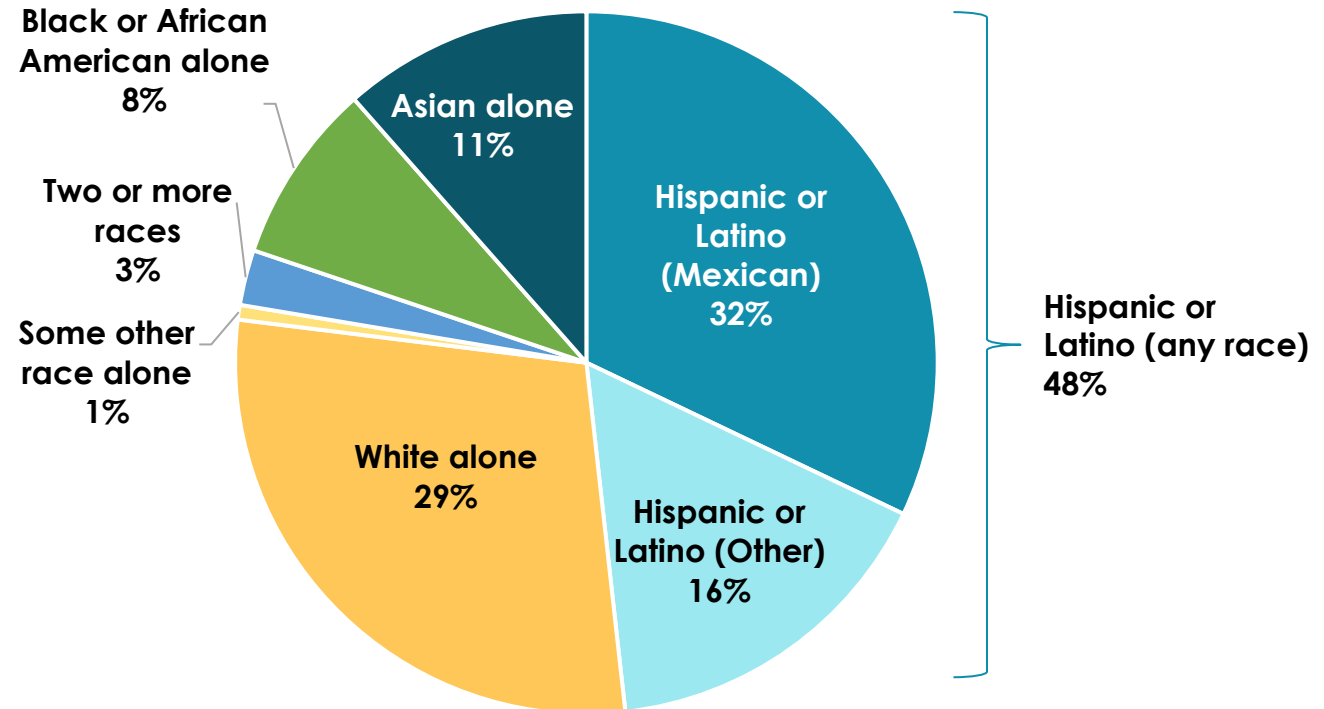


Racial Breakdown of LA

Total Population: 4 million

- Nearly half (48%) of LA's population are of Hispanic or Latino origin. The predominant country of origin is Mexico, representing 32% of LA's population.
- Less than one-third (29%) of LA's population is white (not Hispanic or Latino).
- The remainder of the population is Asian (11%), Black or African American (8%), multi-racial (3%), or other races (1%).

LA Population by Race

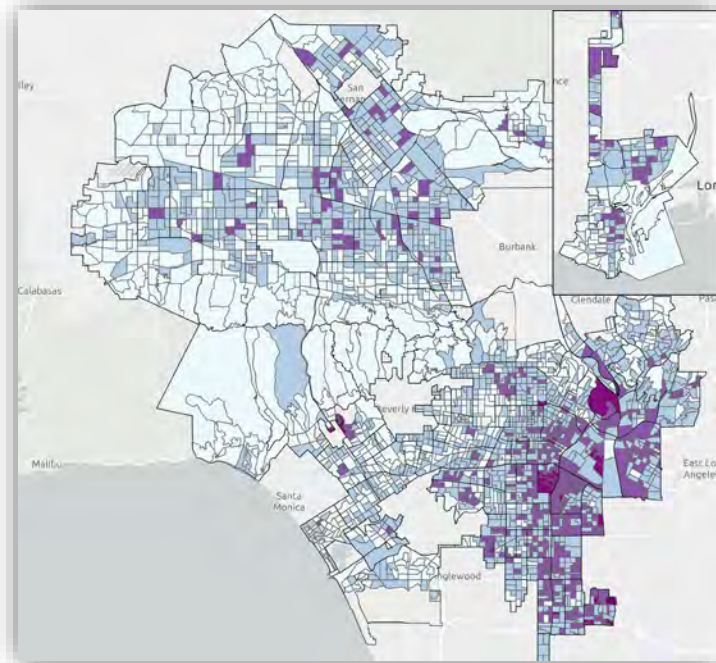


**Note Hispanic or Latino origin is captured separately from race on the US census. Therefore, the Hispanic and Latino categories may include people who identify as other races, including white.*

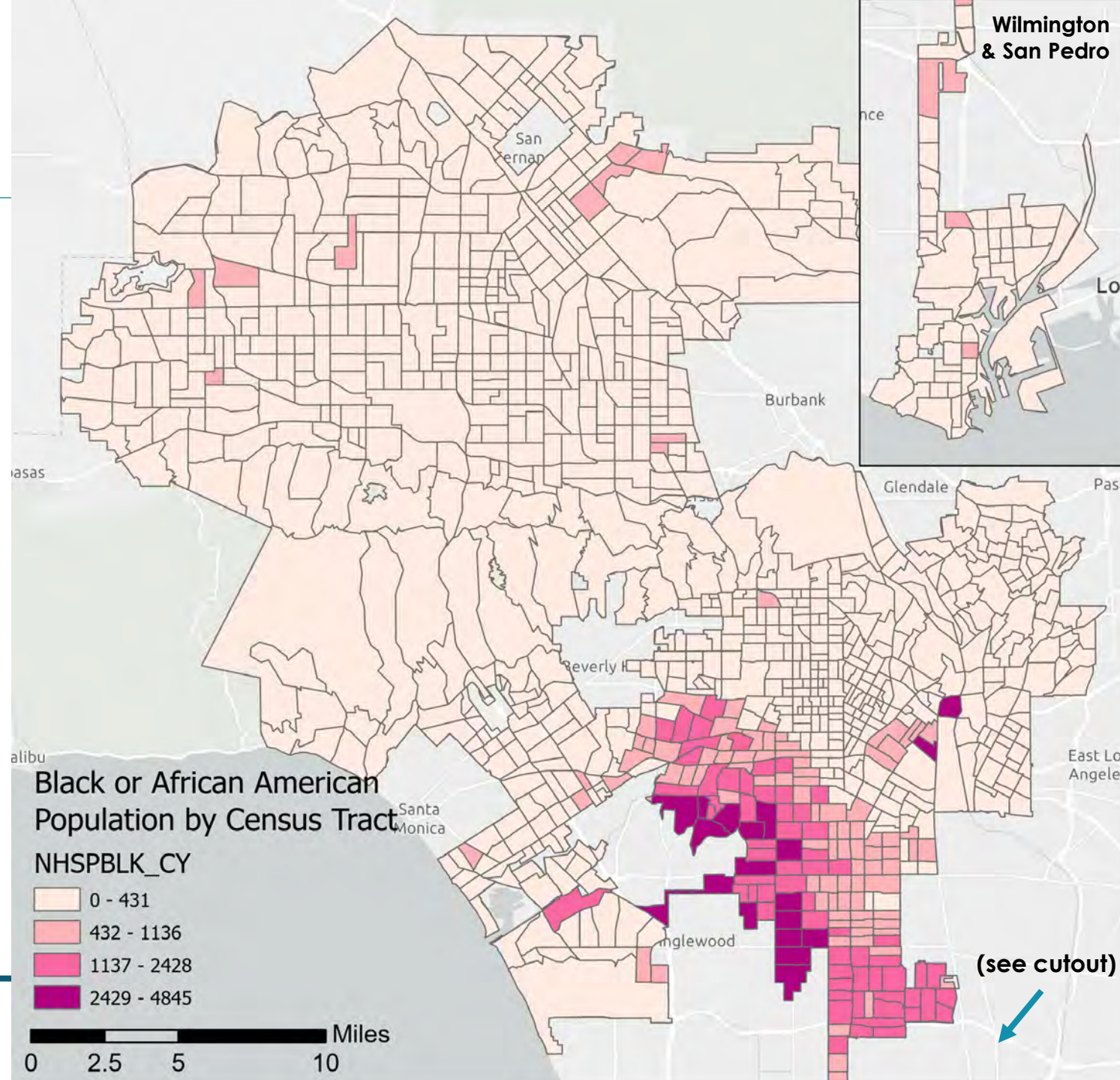
Race | Black or African American

Black or African American people represent 8% of LA's population, heavily concentrated in South Los Angeles.

Low-Income Population*



*Note this low-income map is by census block group, while subsidized unit map is by census tracts.

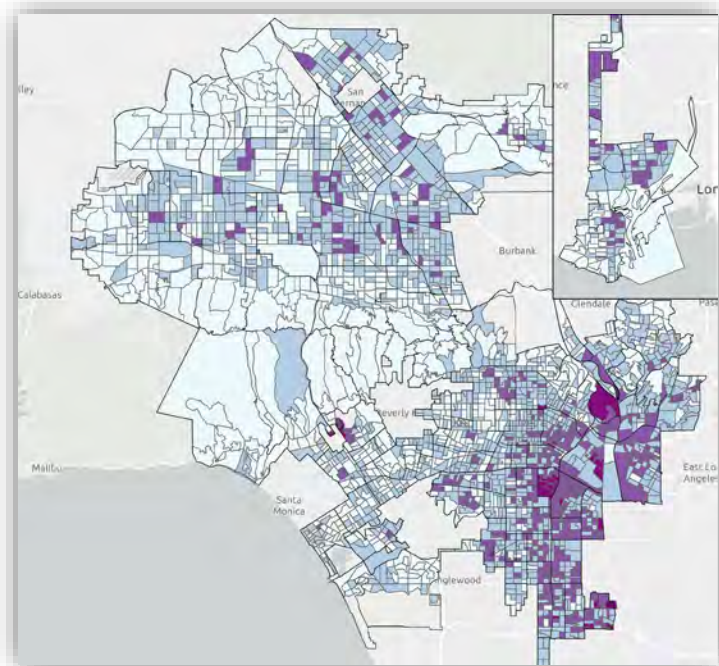


Source: 2018 ACS 5-Yr Survey, BEI building inventory. Map created by BEI.

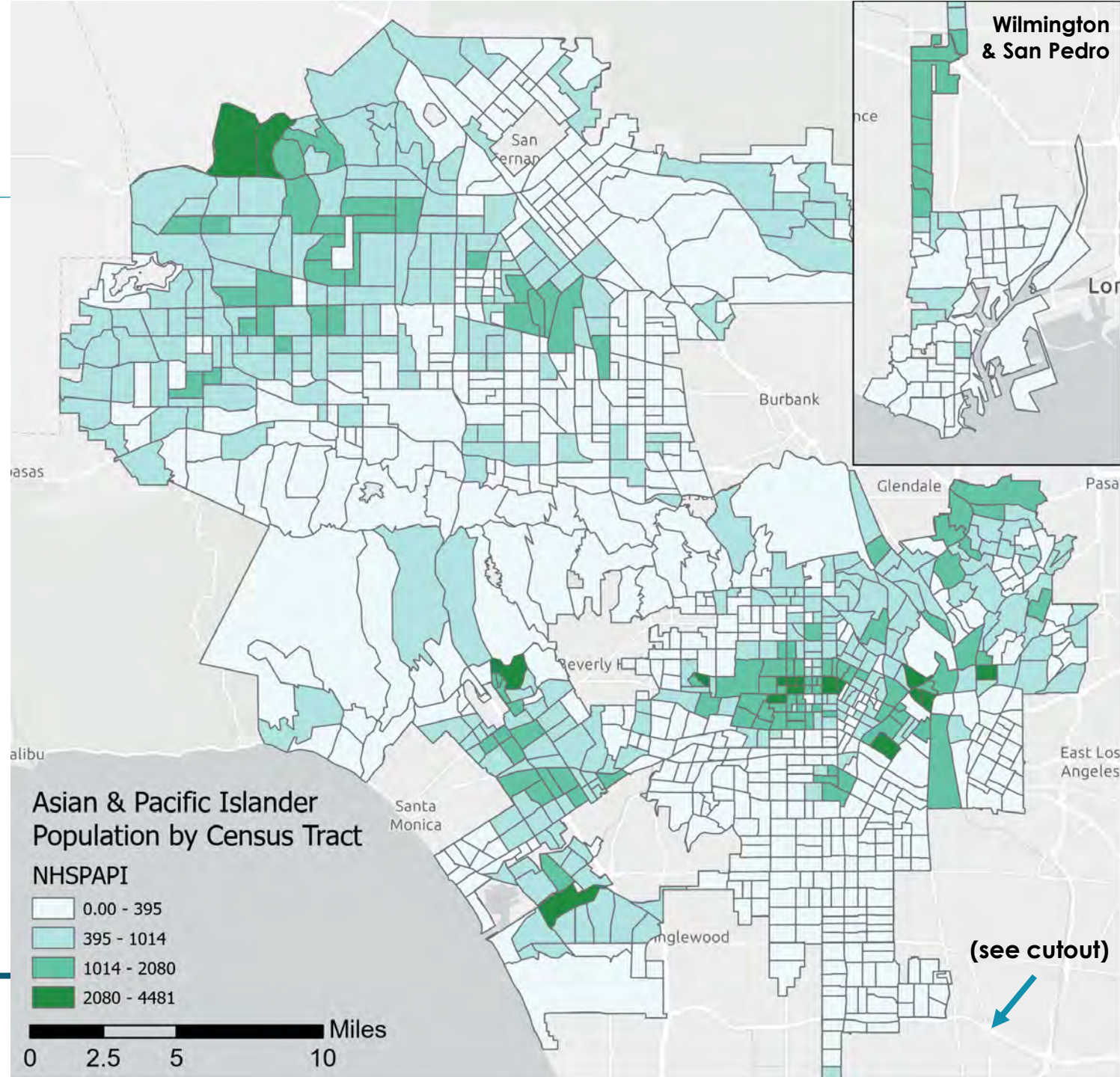
Race | Asian & Pacific Islander

LA's Asian population represents 11% of the City's population, clustered in the northwest Valley, Koreatown, Chinatown, and other areas.

Low-Income Population*



*Note this low-income map is by census block group, while subsidized unit map is by census tracts.

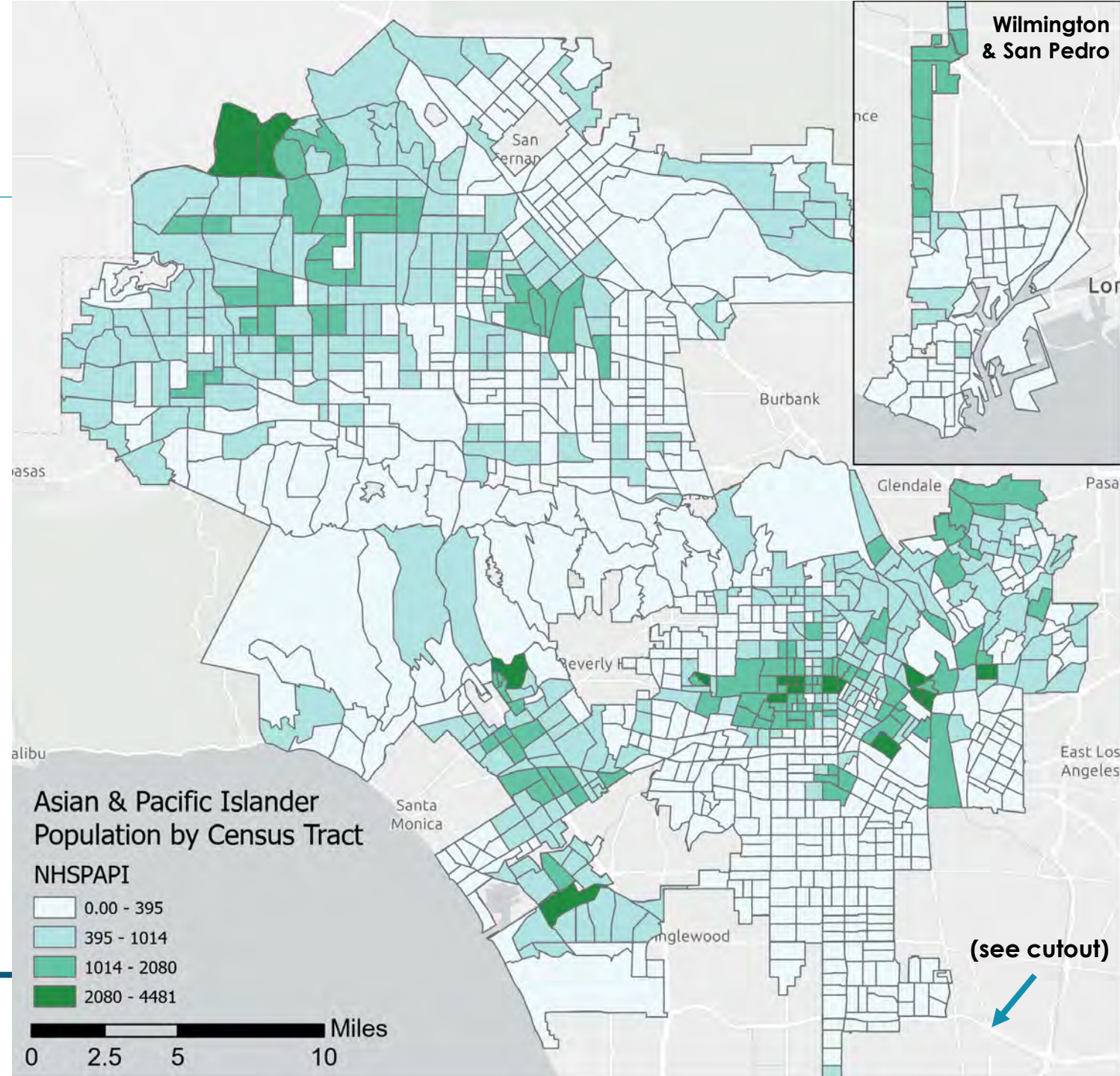
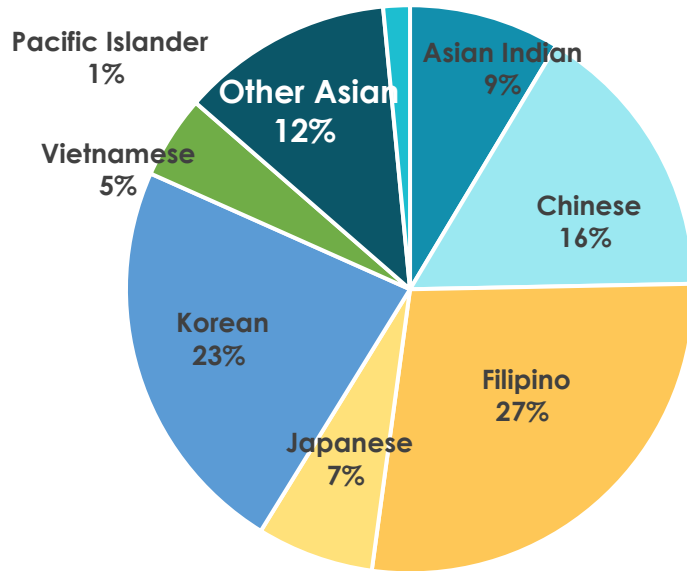


Source: 2018 ACS 5-Yr Survey, BEI building inventory. Map created by BEI.

Race | Asian & Pacific Islander

As with many of the race identifiers used in the Census, the Asian population represents a wide diversity of communities, including significant Filipino and Korean communities.

Asian & Pacific Islander Ethnicities & Percentage of Asian Population in LA

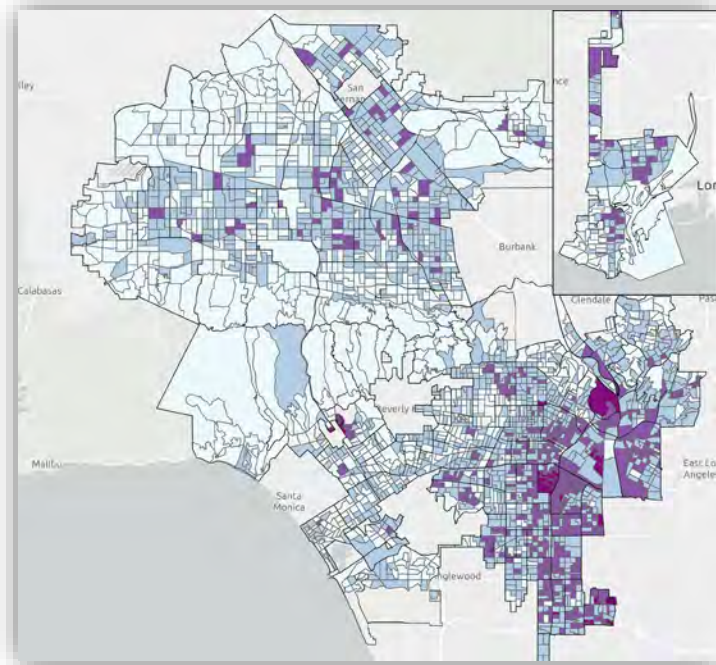


Source: 2018 ACS 5-Yr Survey, BEI building inventory. Map created by BEI.

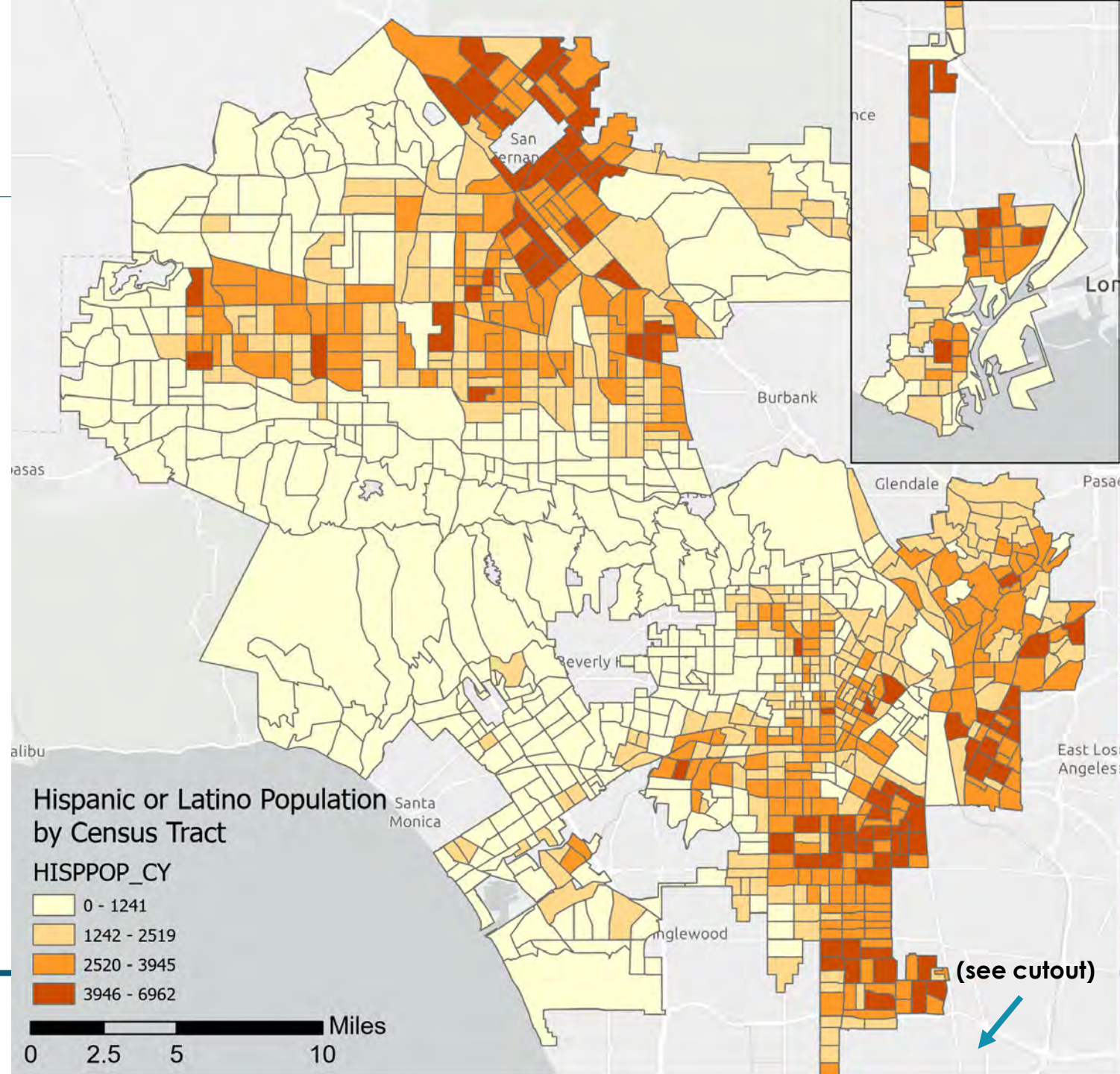
Race | Hispanic or Latino

Almost half of LA's population (48%) identifies as Hispanic or Latino, the majority from Mexico. Note this Census category may include people of several races.

Low-Income Population*



*Note this low-income map is by census block group, while subsidized unit map is by census tracts.



Hispanic or Latino Population by Census Tract

HISPPOP_CY

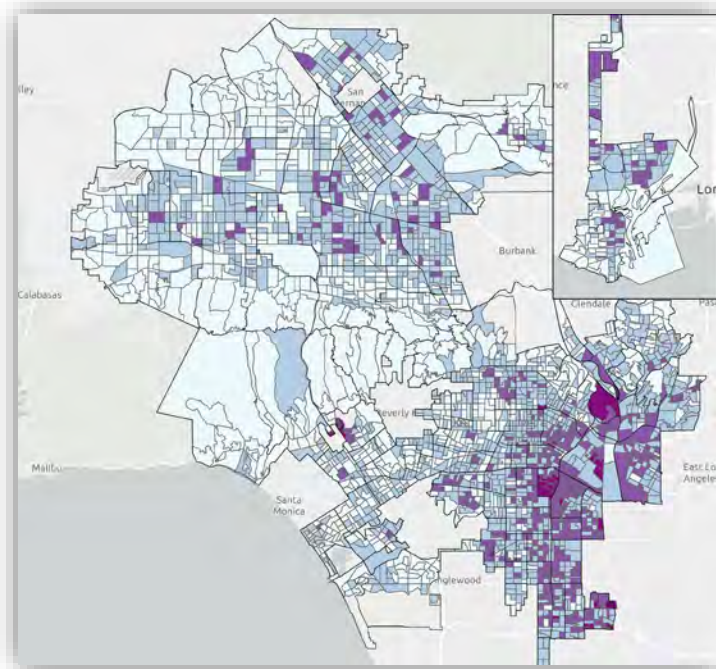
- 0 - 1241
- 1242 - 2519
- 2520 - 3945
- 3946 - 6962

0 2.5 5 10 Miles

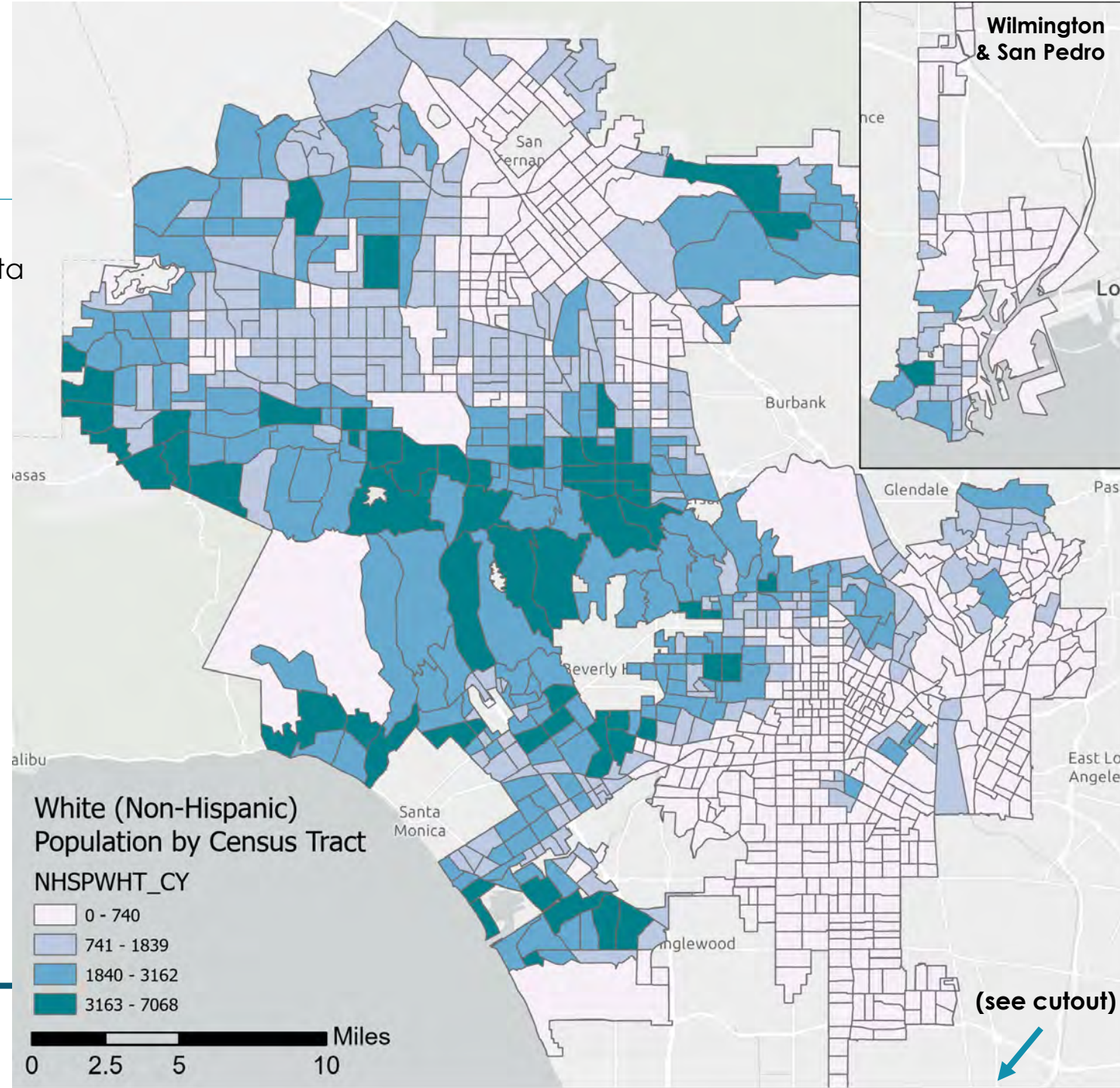
Race | White

The White population in LA makes up 29% of the City, with concentrations in the west Valley, Studio City, Santa Monica Mountains, and elsewhere. This population tends to correlate with higher-income areas.

Low-Income Population*



*Note this low-income map is by census block group, while subsidized unit map is by census tracts.



White (Non-Hispanic) Population by Census Tract

NHSPWHT_CY

- 0 - 740
- 741 - 1839
- 1840 - 3162
- 3163 - 7068

0 2.5 5 10 Miles

Disadvantaged Communities (DAC)

Disadvantaged Communities (DACs) are the top 25% census tracts with high CalEnviroScreen scores.

Roughly 40% of census tracts within the City are considered DACs. 53% of buildings >20,000 sq. ft. are within DAC tracts.

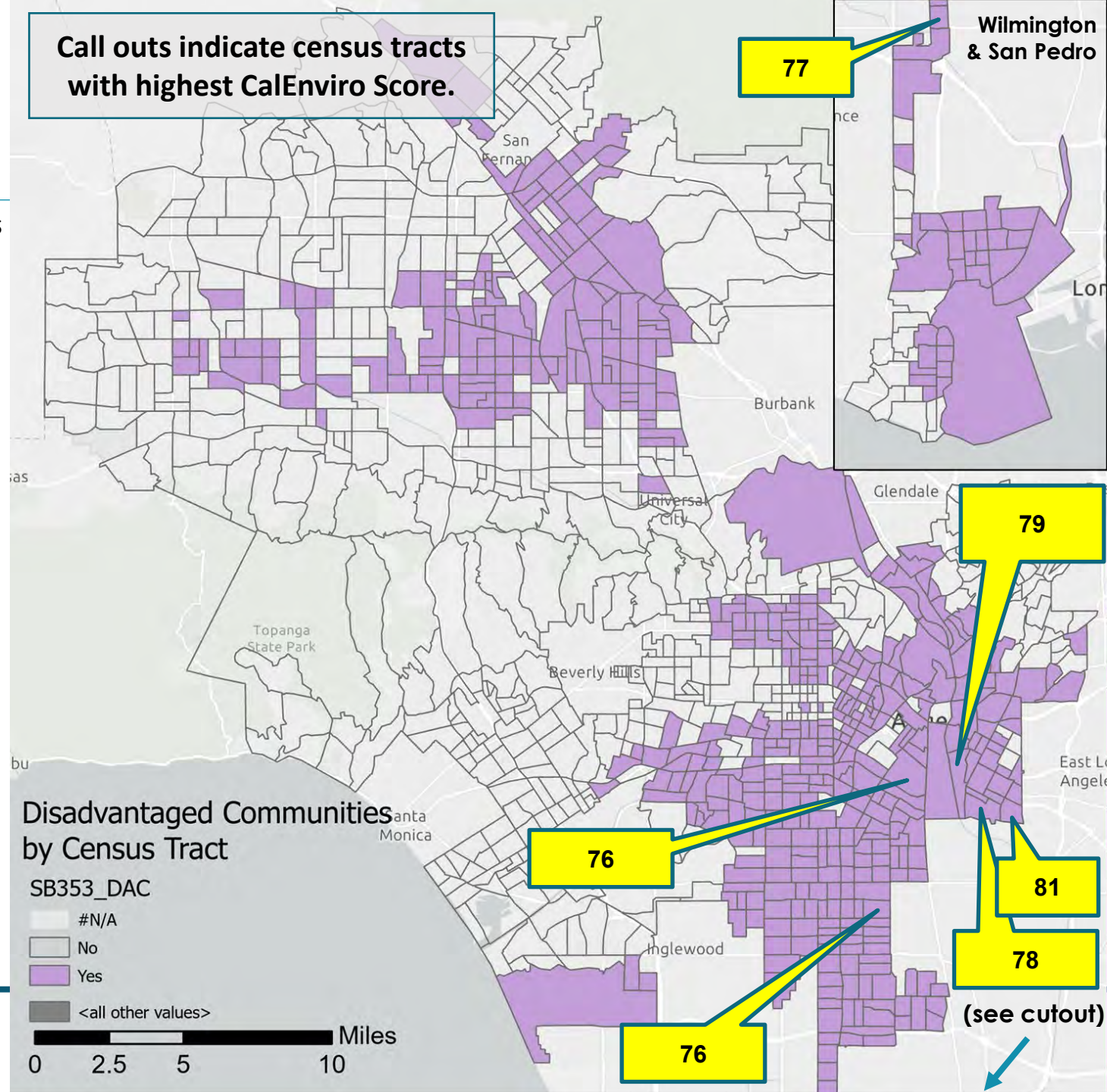
CalEnviroScreen Criteria

	Pollution Burden	Population Characteristics
Exposures	Ozone Concentrations	Cardiovascular Disease
	PM2.5 Concentrations	Low Birth-Weight Births
	Diesel PM Emissions	Asthma Emergency
	Drinking Water Quality	Department Visits
	Pesticide Use	
Environmental Effects	Toxic Releases from Facilities	Educational Attainment
	Traffic Density	Linguistic Isolation
	Cleanup Sites	Poverty
	Groundwater Threats	Unemployment
	Hazardous Waste	Housing Burdened Low Income Households
	Impaired Water Bodies	
	Solid Waste Sites and Facilities	

Source: [CalEnviroScreen SB 535 Disadvantaged Communities \(Updated June 2017\)](#).

Defined under SB535, directing 25% of cap-and-trade profits go to disadvantaged communities.

[Designation of Disadvantaged Communities CalEPA report](#)



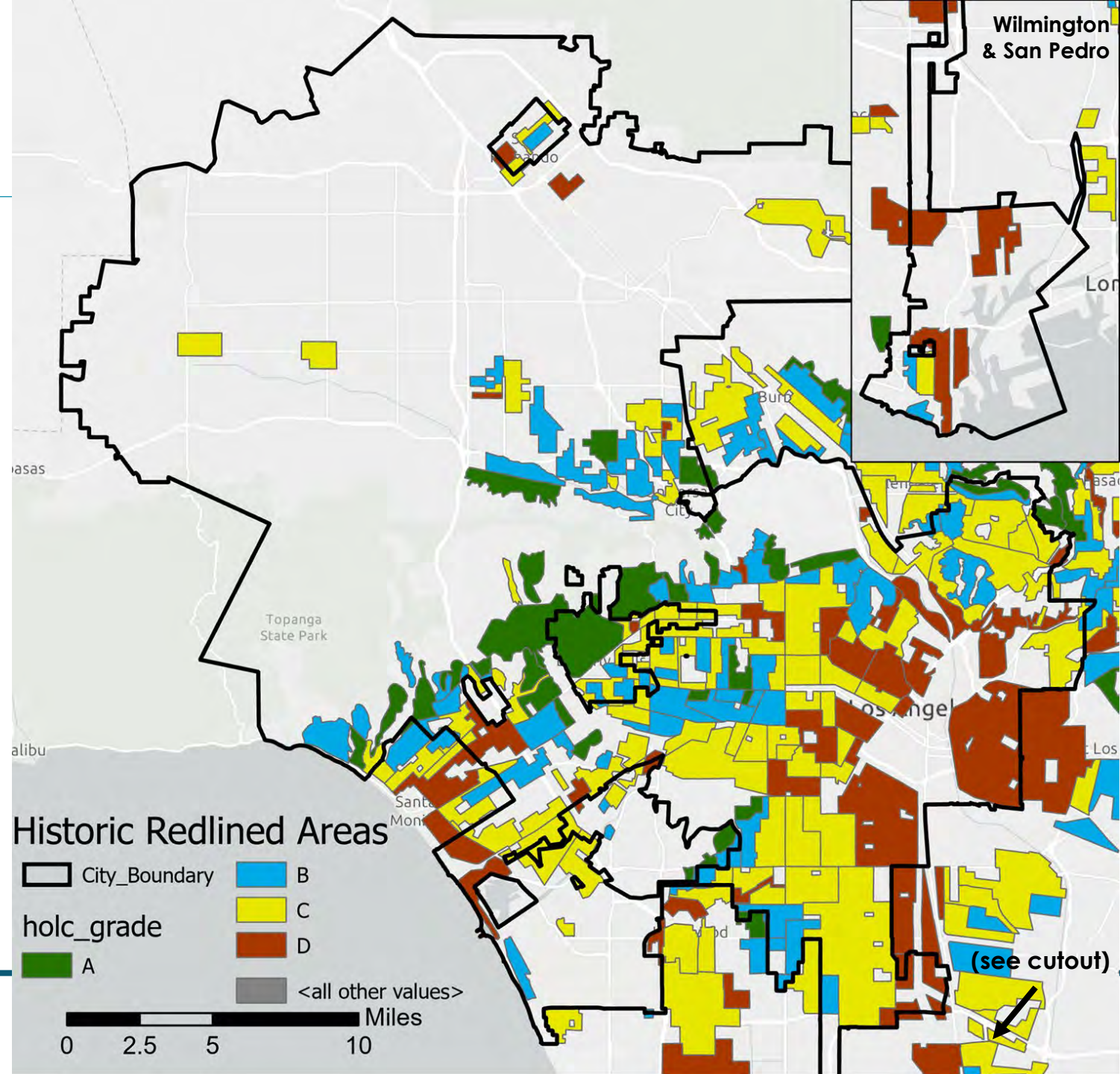
Historically Redlined Areas

This map depicts “residential security” maps (also known as “redlining” maps) created by the federal Home Owners’ Loan Corporation.

These maps were used to disinvest in communities of color, which were deemed as “declining” or “hazardous” areas. The grades given were described as follows:

- A (Green): “Best”
- B (Blue): “Still desirable”
- C (Yellow): “Definitely Declining”
- D (Red): “Hazardous”

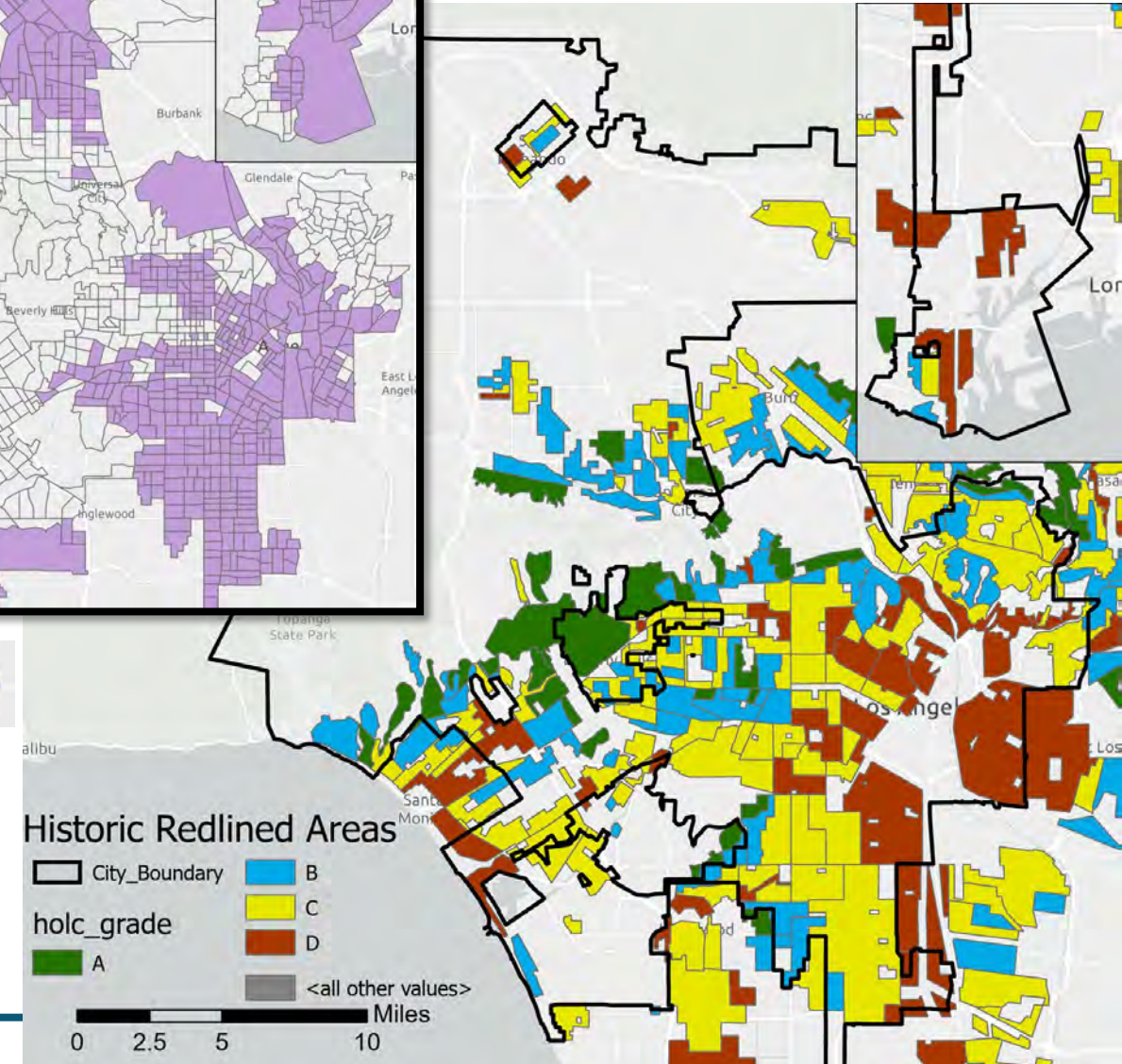
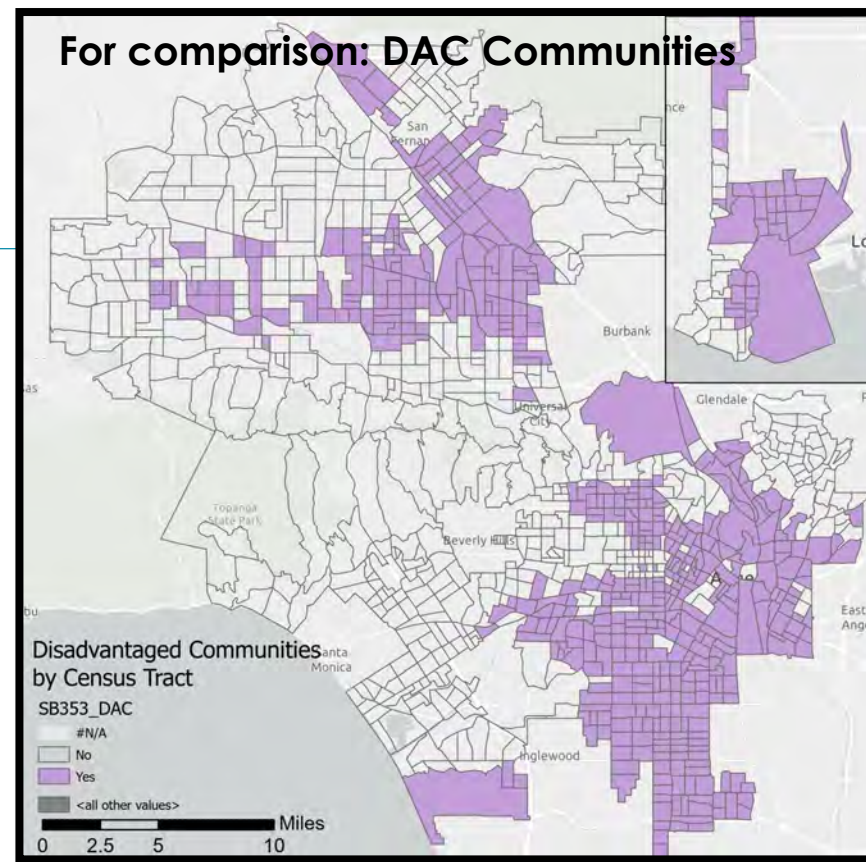
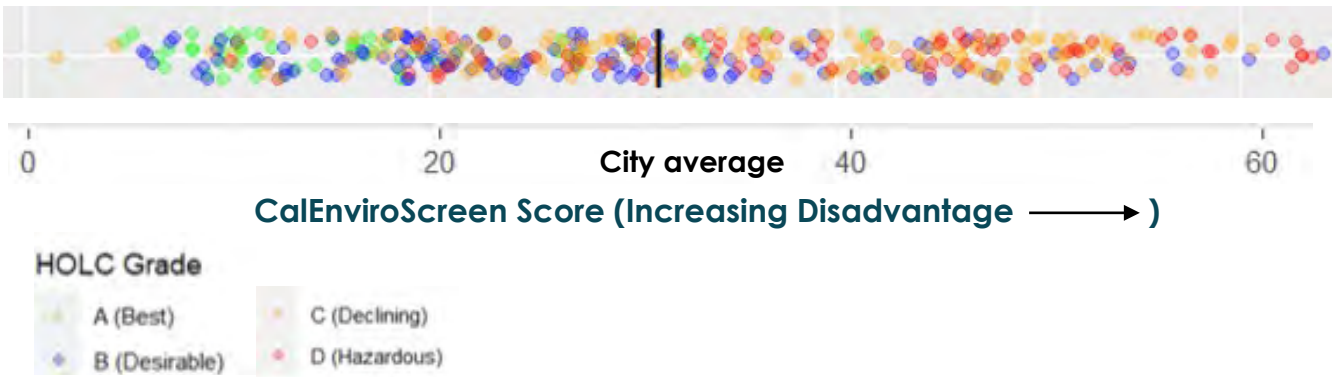
Although these maps are from the 1930s, private lenders continued to use the maps through the 1980s, and the impacts are still clearly felt today.



Historically Redlined Areas

Similarities still exist between historically redlined communities and DAC communities today, and a correlation still exists between high CalEnviroScreen scores (see below), including disparities in pollution burden, lower income, lower property value, and increased health impacts.

LA Redlining Grade Distribution Compared to Today's CalEnviroScreen Scores



Summary of Findings



Summary of Findings

LA's building stock is large and varied, requiring a mix of approaches to increase energy efficiency and lower GHG emissions.

- **There are nearly one million buildings in LA**, including residential, commercial, industrial, institutional, government-owned, and many other types of buildings. The vast majority of these buildings are small residential buildings.
- **Most buildings in LA are less than 7,500 sq. ft., however medium and large buildings (over 7,500 sq. ft.) comprise a significant portion of the city's built square footage (43%) and building energy use (37%).** Medium and large buildings also have a much more varied range of uses than smaller buildings, which tend to be residential.
- **Developing policies to reduce energy use and GHG emissions from medium and large buildings will help LA achieve its goals**, however new policies and programs will also be required in smaller buildings in order to meet pLAN climate goals.
- **Subsidized affordable housing accounts for only a small portion (10%) of units in multifamily buildings (5+ units)**, while unsubsidized affordable housing accounts for the majority (55%) of these units. The high proportion of unsubsidized affordable units in LA may pose challenges to continued affordability.
- **A significant portion of LA is designated as Disadvantaged Communities (DAC)**, or communities that experience the highest pollution burden, poverty, and social vulnerability concerns in California, and these significantly overlap with historically redlined areas. These communities must be thoughtfully engaged and supported when considering any new policies and programs to address building energy use and emissions. There are also numerous state funding opportunities available specifically to support these communities.



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