

# San José Building & Housing Stock Analysis

Completed August 2020

Appendix F of the *Electrify San José Framework*



# Building and Housing Stock Analysis | Approach

San José partnered with the Building Electrification Institute (BEI) to conduct a building and housing stock analysis to understand its local building stock and how building type relates to electrification and efficiency opportunities, as well as improving the health, resiliency, and affordability for San José community members.

## The goals of the analysis are to:

- **Understand broad opportunities for electrification** across San José's building stock
- **Identify key considerations** for different building types, decision-makers, and communities
- **Begin to inform future policy and program design** options to encourage electrification

To achieve these goals, the team analyzed **three types of indicators**:

1. **Technical indicators** to help identify which types of buildings may be easier or harder to electrify based on building type or construction.
2. **Ownership and Decision-making Indicators** to help identify buildings with owners or decision-makers who are more or less likely to decide to pursue building electrification and to understand potential barriers and solutions.
3. **Social Vulnerability and Environmental Risk Indicators** to help identify buildings that may need greater assistance and public investments to help the City design appropriate programs or strategies. Impacted communities, which often include low-income communities and communities of color, will require the City and others to design specific strategies tailored to their needs in order to ensure an equitable transition to building electrification.

# Building and Housing Stock Analysis | Approach

The approach for the analysis included the following steps:



The BEI team collected publicly available building data on technical, market, and socio-demographic factors.

Using this data, the team developed a parcel-level inventory of all buildings in San José.

Using technical building factors, the team then created common building typologies, based on potential electrification and energy efficiency interventions.

The team then segmented the building stock based on technical, ownership/decision-making, social vulnerability, and environmental risk indicators.

Together with Climate Smart San José and San José Clean Energy staff, the team discussed indicators and considerations for each building typology.

***In addition to this analysis,** San José can ground truth data provided and engage with key community stakeholders on the opportunities and barriers identified to develop new programs, policies, and strategies to scale up electrification in different building segments.*

# Contents

## Technical Indicators

- Building typologies
- Building vintage
- Recent major renovations
- Building size
- Building height
- Residential units

## Ownership & Decision-Making Indicators

- Affordable housing
- Rent stabilization
- Potential ADUs
- Early Adopters
- New homeowners
- Baby boomers
- Millennials
- Families with children
- School service areas

## Social Vulnerability Indicators

- Low-income households
- Race distribution
- Energy cost burden
- Asthma rate
- Age over 80
- People with disabilities
- Internet access
- Limited English households
- Spanish-speaking households
- Asian Pacific Islander language-speaking households

## Environmental Risk Indicators

- Heat risk
- Pollution burden
- Wildfire risk
- Public Safety Public Shut-off areas



# Technical Indicators

---

## List of Technical Indicators

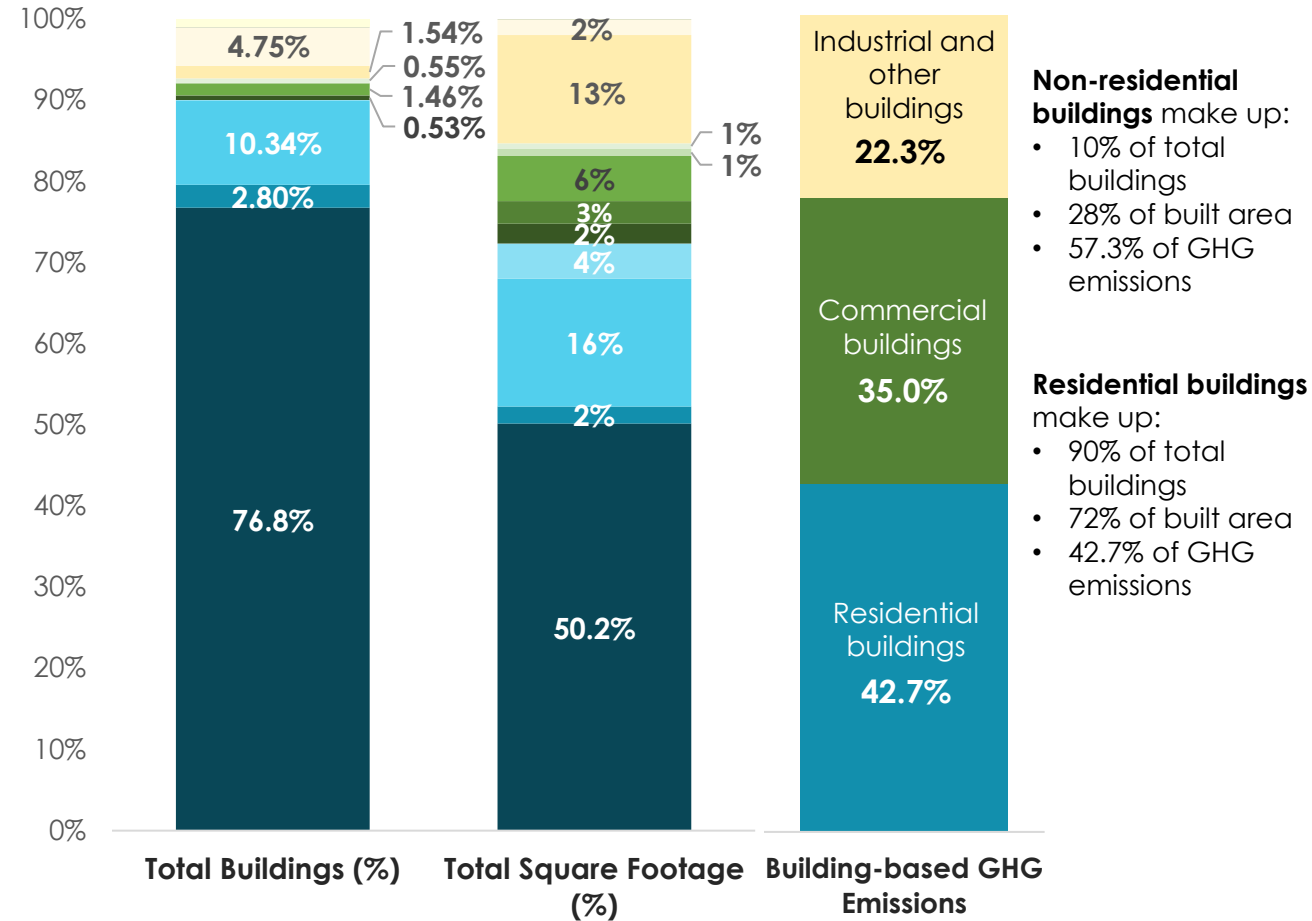
- Building typologies
- Building vintage
- Recent major renovations
- Building size
- Building height (number of floors)
- Residential Units

# Technical Indicators | Building Typologies

## Summary of Building Typologies

Typologies	Number of Units	Number of Stories	Total Buildings	Total Square Footage
1 <b>Single-Family Homes</b>	1	Up to 3	178,530	305,662,521
2 <b>Duplex</b>	2	Any	6,519	12,835,152
3 <b>Low-Rise Multifamily Complex</b>	3+	Up to 3	24,055	95,908,849
4 <b>High-Rise Multifamily Complex</b>	3+	4+	279	26,484,498
5 <b>Low-Rise Commercial Office</b>	Any	Up to 3	1,236	14,935,596
6 <b>High-Rise Commercial Office</b>	Any	4+	118	16,934,490
7 <b>Commercial Retail</b>	Any	Any	3,394	33,891,713
8 <b>Hotels and Motels</b>	Any	Any	162	5,310,957
9 <b>Institutional &amp; Public</b>	Any	Any	1,280	4,126,334
10 <b>Industrial/Manufacturing</b>	Any	Any	3,582	81,330,799
11 <b>Other</b>	Any	Any	11,047	11,972,196
12 <b>Outdoor Spaces</b>	Any	Any	17	13,236
Missing Data	NA	NA	2,322	-
<b>TOTAL</b>			<b>232,541</b>	<b>609,406,341</b>

## Buildings by Count and Area



# Technical Indicators | Building Typologies

## Summary of Building Typologies

Typologies	Number of Units	Number of Stories	Total Buildings	Total Square Footage
1 Single-Family Homes	1	Up to 3	178,530	305,662,521
2 Duplex	2	Any	6,519	12,835,152
3 Low-Rise Multifamily Complex	3+	Up to 3	24,055	95,908,849
4 High-Rise Multifamily Complex	3+	4+	279	26,484,498
5 Low-Rise Commercial Office	Any	Up to 3	1,236	14,935,596
6 High-Rise Commercial Office	Any	4+	118	16,934,490
7 Commercial Retail	Any	Any	3,394	33,891,713
8 Hotels and Motels	Any	Any	162	5,310,957
9 Institutional & Public	Any	Any	1,280	4,126,334
10 Industrial/Manufacturing	Any	Any	3,582	81,330,799
11 Other	Any	Any	11,047	11,972,196
12 Outdoor Spaces	Any	Any	17	13,236
Missing Data	NA	NA	2,322	-
<b>TOTAL</b>			<b>232,541</b>	<b>609,406,341</b>

Use Class	Number of Units	Number of Stories	Total Number of Buildings	Total Square Footage
Residential (Mixed Use)	1	Up to 3	81	4,104,147

**Mixed-Use Buildings**, classified in tax assessor data as “Residential (Mixed Use)”, were included in the residential building typologies. They make up <1% of total residential square footage. Please note some mixed-use buildings may exist in commercial typologies as well, although not identified clearly enough in base datasets to create a separate category.



# Technical Indicators | Building Typologies

## Median Buildings by Typology

#	Typologies	Median Area (sq. ft.)	Median Height (Stories)	Median # of Residential Units	Median Year Built
1	Single-Family	1,617	1	1	1968
2	Duplex	1,904	1	2	1960
3	Low-Rise Multifamily Complex	4,504	2	4	1967
4	High-Rise Multifamily Complex	131,060	4	153	2011
5	Low-Rise Commercial Office	6,086	1	NA	1971
6	High-Rise Commercial Office	157,537	6	NA	1986
7	Commercial Retail	4,827	1	NA	1966
8	Hotels and Motels	29,886	2	NA	1986
9	Institutional & Public Buildings	11,104	1	NA	1966
10	Industrial/Manufacturing	18,365	1	NA	1978
11	Other	1,813	3	NA	2014
12	Outdoor Spaces	1,004	1	NA	1963
	<b>City-wide Median</b>	<b>1,678</b>	<b>1</b>	<b>1</b>	<b>1968</b>



Single-Family Homes



Low-Rise Multifamily Complex



Low-Rise Commercial Office



# Building Typologies

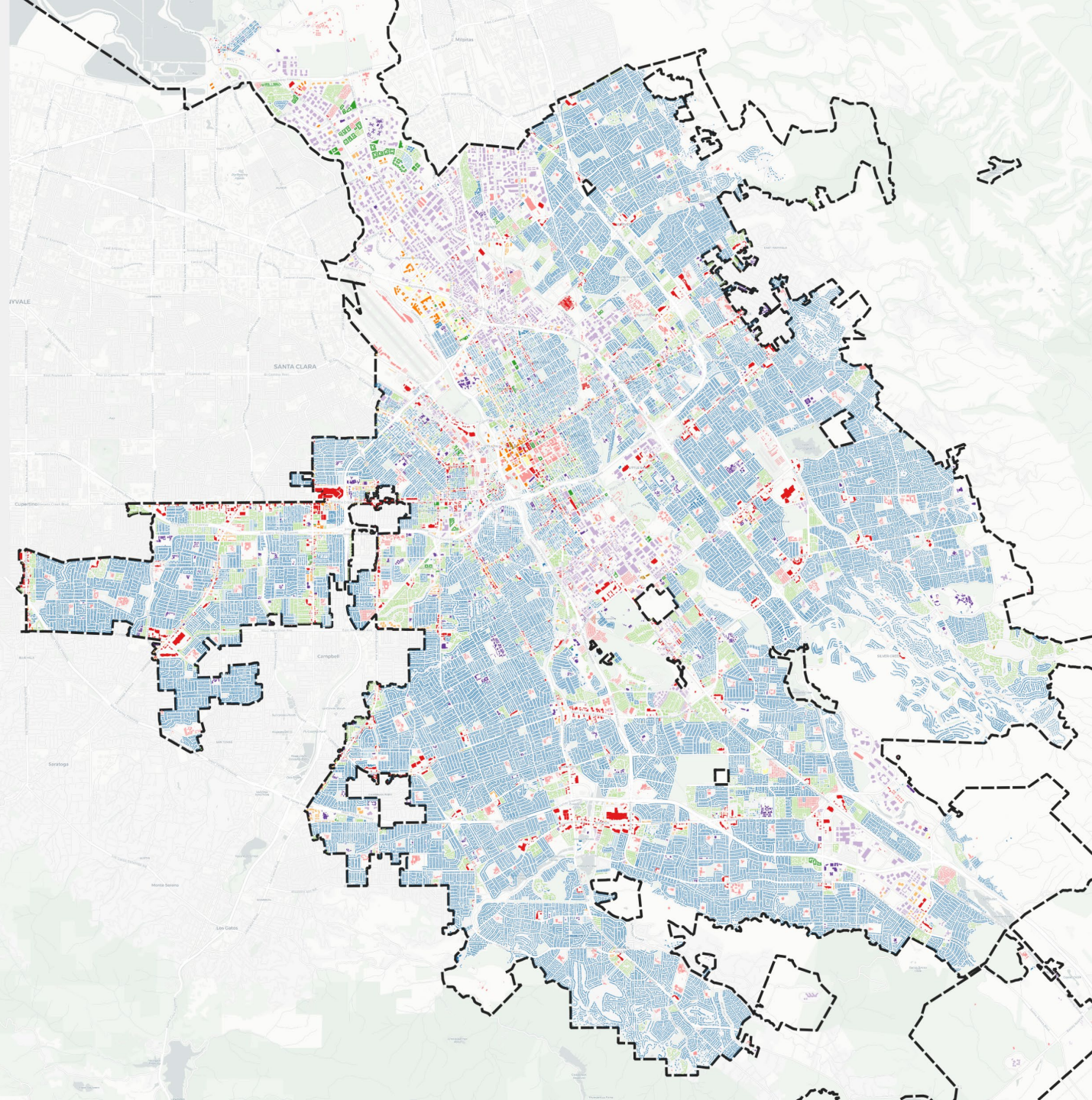
## Number of Buildings by Typology

Typology	# of Buildings (% total)
Single-Family	178,530 (77%)
Duplex	6,519 (3%)
Low-Rise Multifamily Complex	24,055 (10%)
High-Rise Multifamily Complex	279 (0.1%)
Low-Rise Commercial Office	1,236 (1%)
High-Rise Commercial Office	118 (0.05%)
Commercial Retail	3,394 (1.46%)
Hotels and Motels	162 (0.07%)
Institutional & Public Buildings	1,280 (0.55%)
Industrial/Manufacturing	3,582 (1.54%)
Other	11,047 (5%)
Outdoor Spaces	17 (0.01%)

## Building Typologies

Types of uses from parcel data

- Single-Family
- Duplex
- Low-Rise Multi-Family Complex (>= 3 Units, < 4 Stories)
- High-Rise Multi-Family Complex (>= 3 Units, >= 4 Stories)
- Other Non-Residential
- Commercial Retail
- Low-Rise Commercial Office (< 4 Stories)
- High-Rise Commercial Office (>= 4 Stories)
- Industrial/Manufacturing
- Institutional & Public Buildings
- Hotels and Motels
- Outdoor Spaces





# Technical Indicators | Building Typologies

## Summary Table

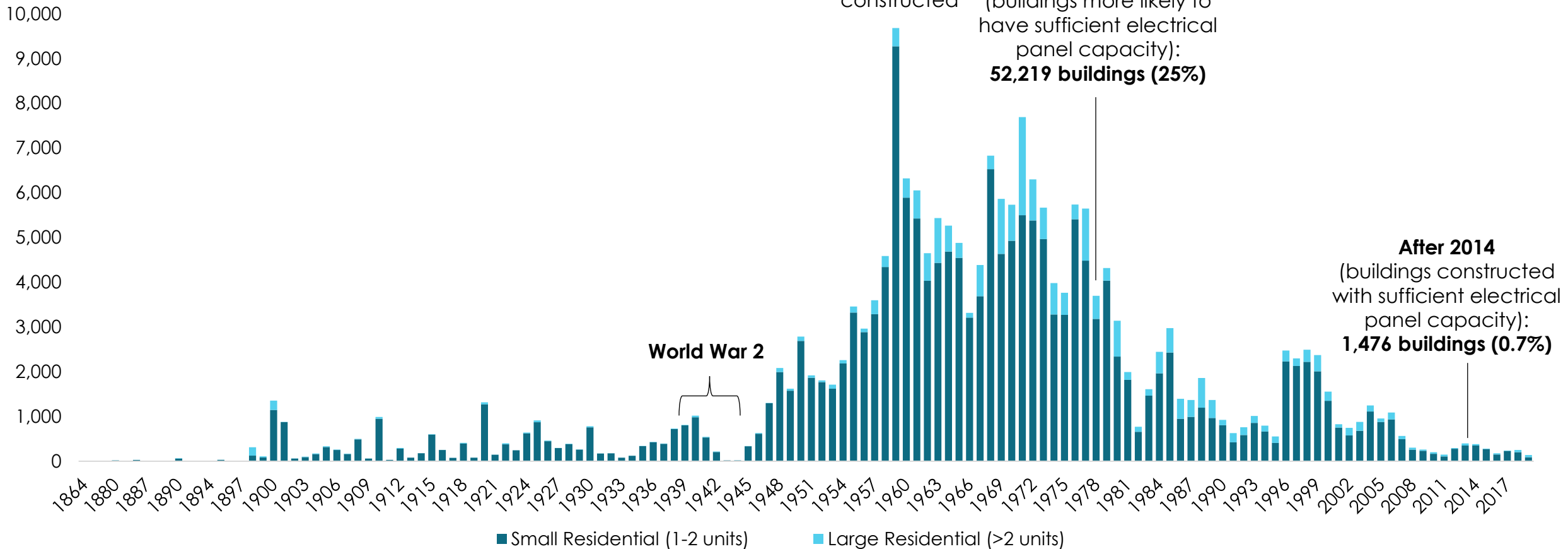
#	Typologies	Number of Units	Number of Stories	Number of Parcels	Number of Buildings	Percentage of Buildings	Total Square Footage	Percentage of Total Square Footage	Total Residential Units	Percentage of Residential Units
1	Single-Family Homes	1	Up to 3	171,405	178,530	77%	305,662,521	50%	171,405	55%
2	Duplex	2	Any	5,690	6,519	3%	12,835,152	2%	11,380	4%
3	Low-Rise Multifamily Complex	3 or More	Up to 3	6,666	24,055	10%	95,908,849	16%	101,723	33%
4	High-Rise Multifamily Complex	3 or More	4 or More	128	279	0%	26,484,498	4%	26,300	9%
5	Low-Rise Commercial Office	Any	Up to 3	1,069	1,236	1%	14,935,596	3%	-	-
6	High-Rise Commercial Office	Any	4 or More	92	118	0%	16,934,490	3%	-	-
7	Commercial Retail	Any	Any	2,840	3,394	2%	33,891,713	6%	-	-
8	Hotels and Motels	Any	Any	120	162	0%	5,310,957	1%	-	-
9	Institutional & Public Buildings	Any	Any	530	1,280	1%	4,126,334	1%	-	-
10	Industrial/Manufacturing	Any	Any	2,602	3,582	2%	81,330,799	13%	-	-
11	Other	Any	Any	7,404	11,047	5%	11,972,196	2%	-	-
12	Outdoor Spaces	Any	Any	12	17	0%	13,236	0%	-	-
	Missing Data	NA	NA	3,165	2,322	1%	-	-	-	-
	<b>TOTAL</b>			201,723	232,541	100%	609,406,341	100%	310,808	100%



# Technical Indicators | Building Vintage

## Residential Buildings, Year Built

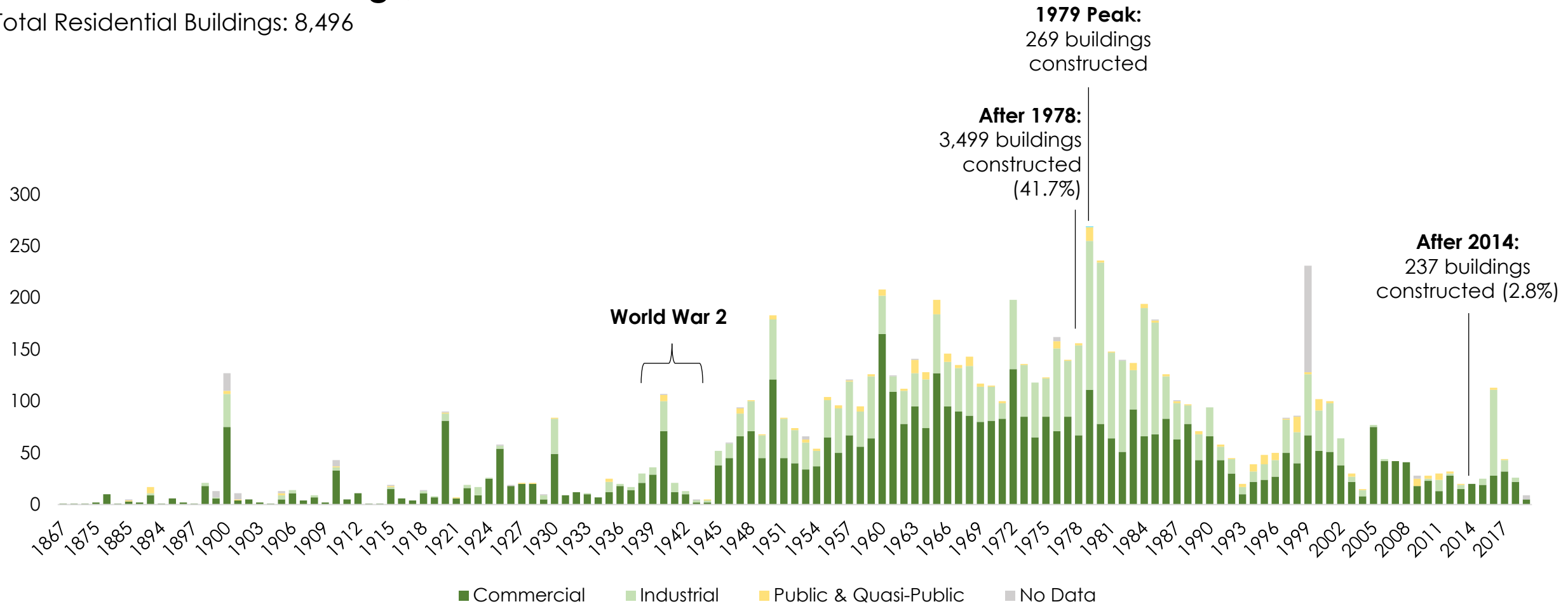
Total Residential Buildings: 209,011



# Technical Indicators | Building Vintage

## Non-Residential Buildings, Year Built

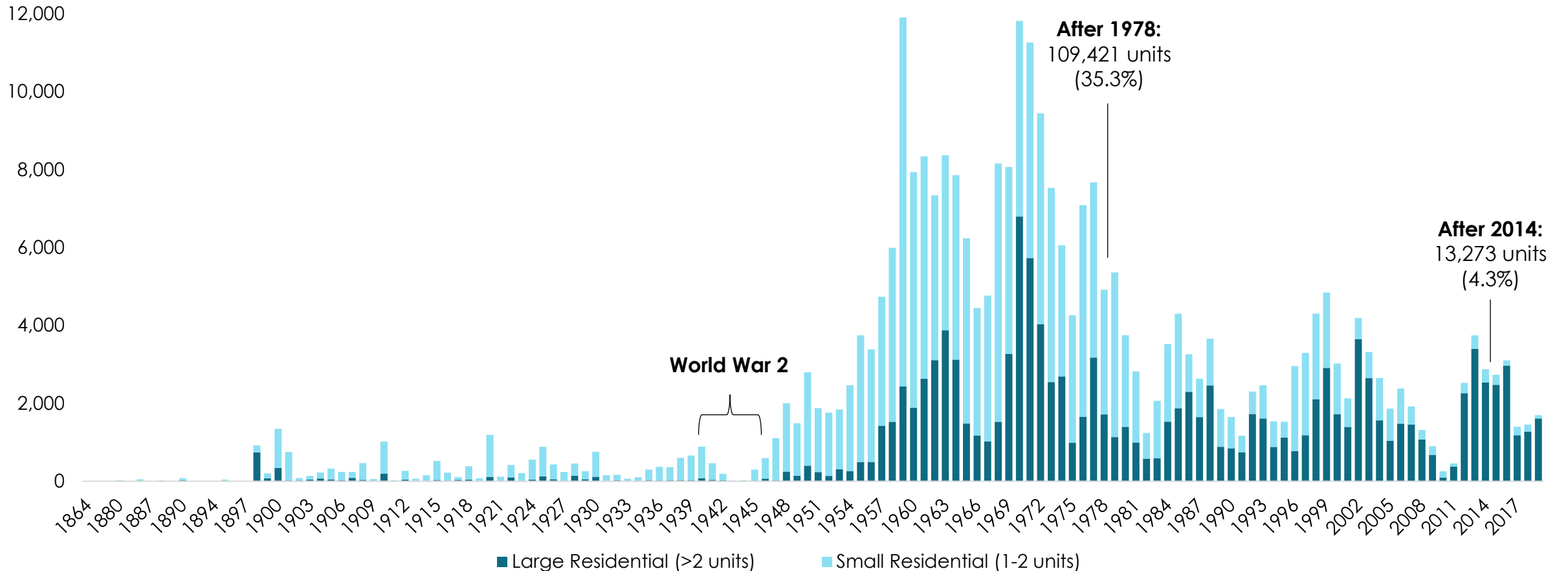
Total Residential Buildings: 8,496



# Technical Indicators | Building Vintage

## Residential Units, Year Built

Total Units in Residential Buildings: 310,108

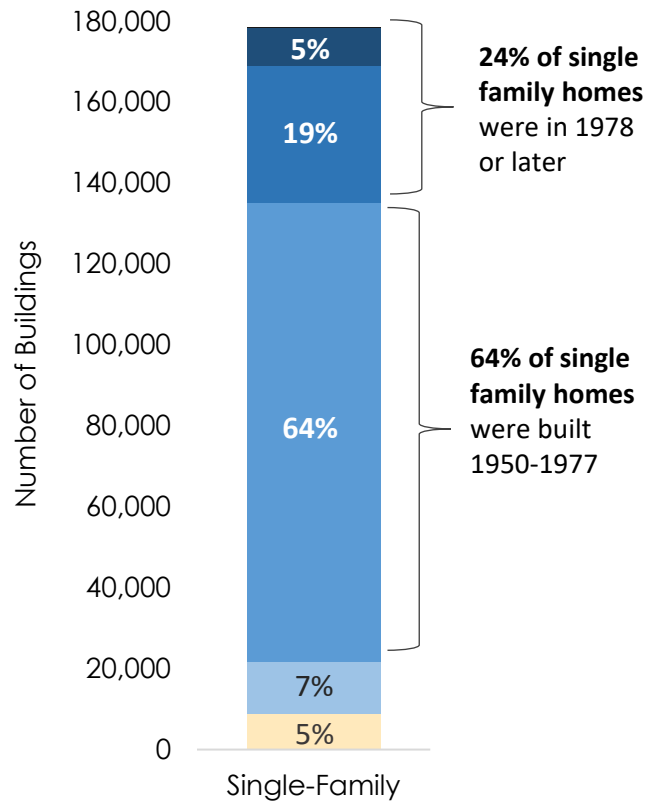




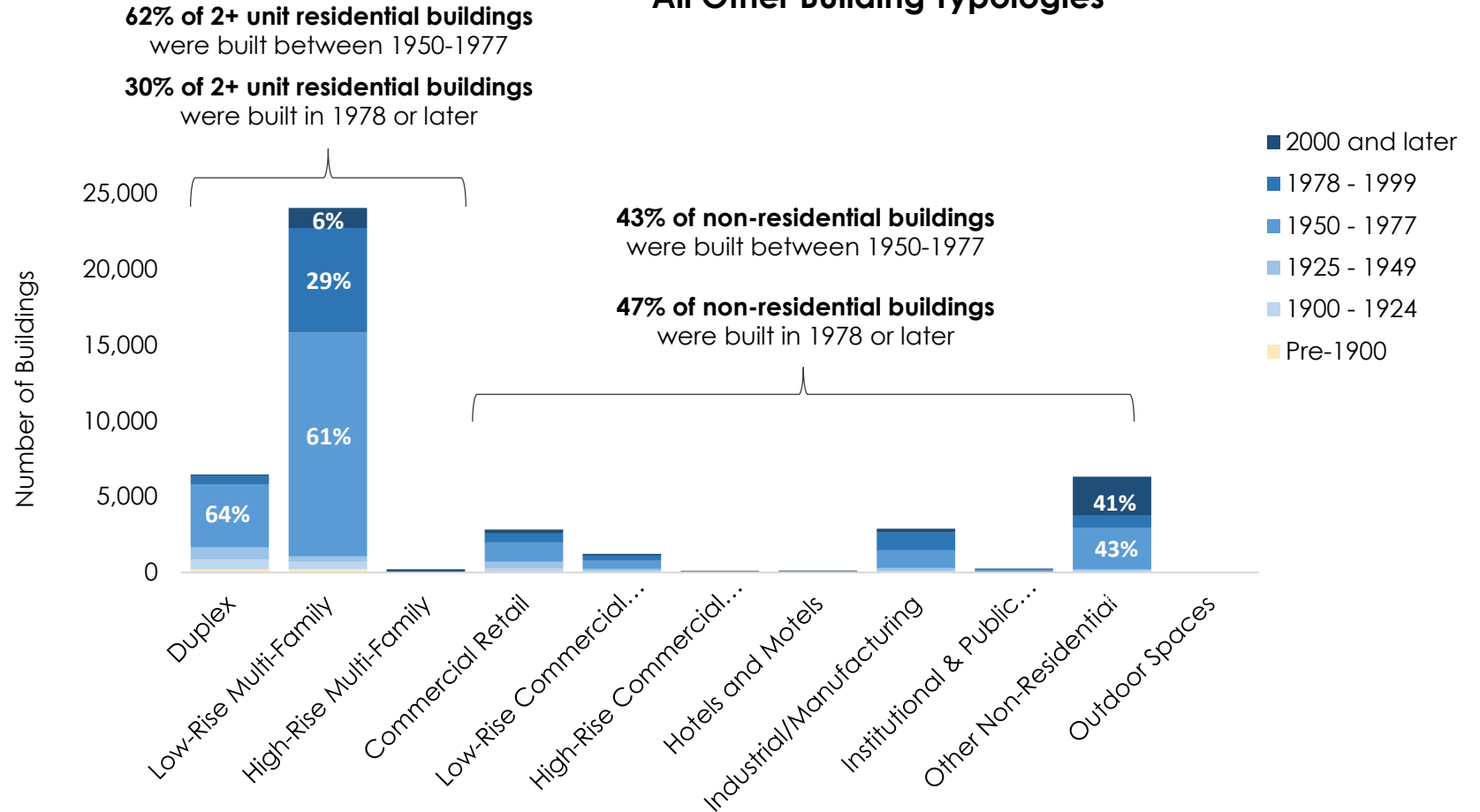
# Technical Indicators | Building Vintage

## Number of Buildings by Typology and Vintage

### Single Family Homes



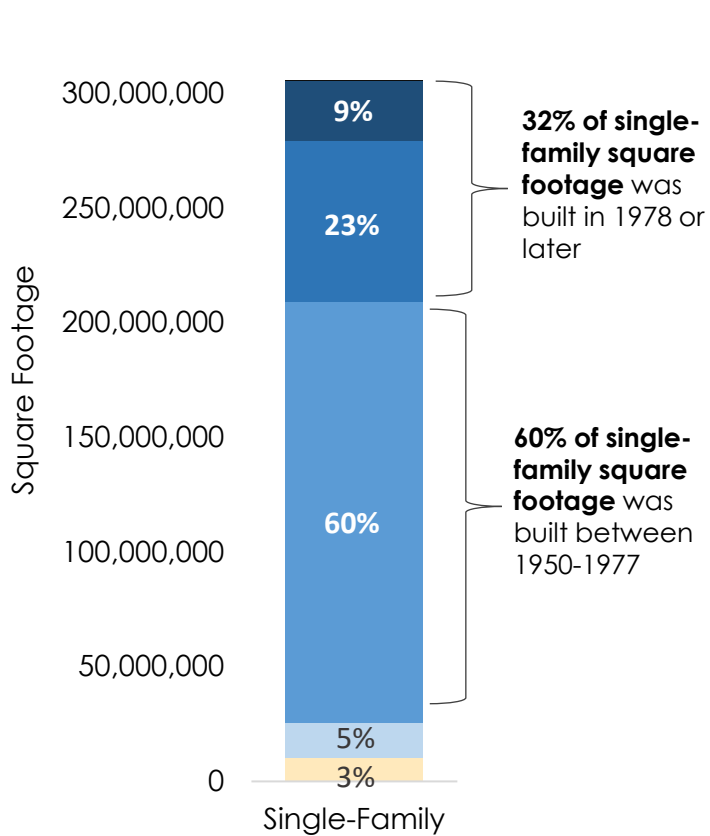
### All Other Building Typologies



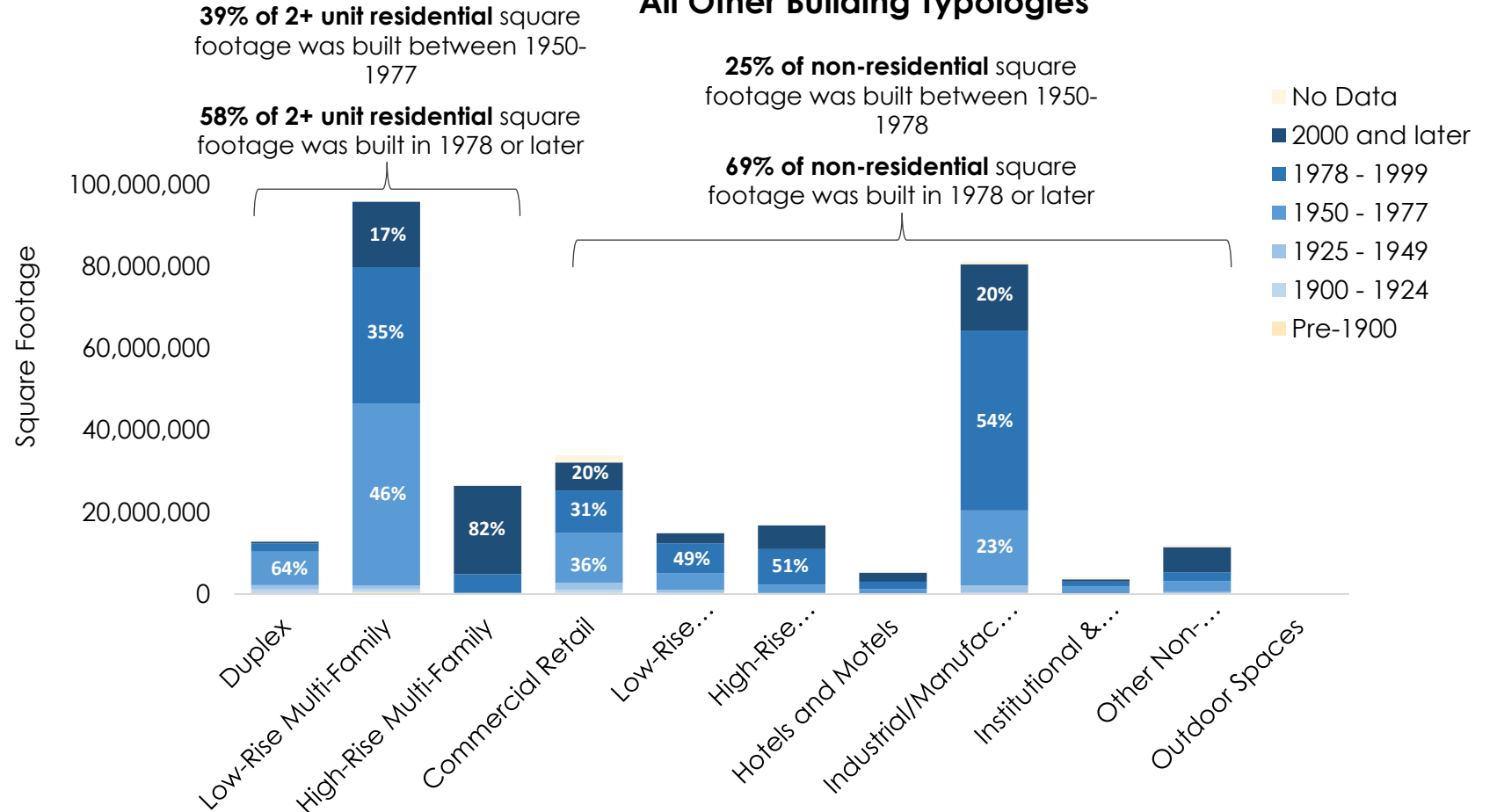
# Technical Indicators | Building Vintage

## Square Footage by Typology and Vintage

### Single Family Homes



### All Other Building Typologies



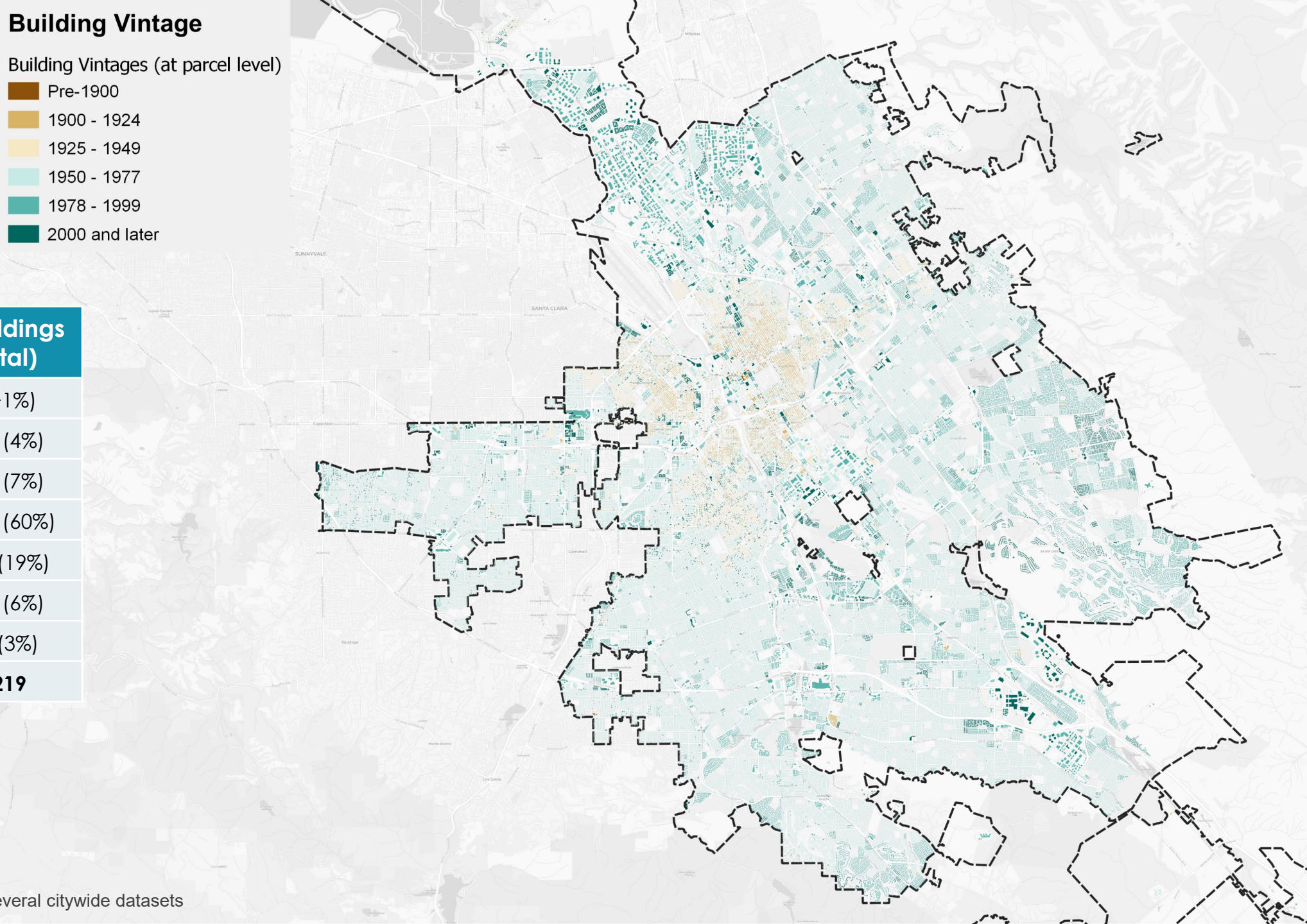
# Building Vintage

## Number of Buildings by Year Built

### Building Vintage

Building Vintages (at parcel level)

- Pre-1900
- 1900 - 1924
- 1925 - 1949
- 1950 - 1977
- 1978 - 1999
- 2000 and later



Year	# of Buildings (% total)
Pre-1900	699 (>1%)
1900-1924	10,139 (4%)
1925-1949	15,100 (7%)
1950-1977	138,208 (60%)
1978-1999	44,363 (19%)
2000-Present	14,265 (6%)
No Data	7,212 (3%)
<b>TOTAL</b>	<b>230,219</b>

Building stock source: BEI analysis of several citywide datasets



# Technical Indicators | Building Vintage

## Summary Tables

### Number of Buildings

#	Typology	Pre-1900	1900 - 1924	1925 - 1949	1950 - 1977	1978 - 1999	2000 and later	No Data	Total Bldgs
1	Single-Family	0.1%	5%	7%	64%	19%	5%	0.1%	178,530
2	Duplex	3%	10%	12%	63%	9%	1%	1%	6,519
3	Low-Rise Multifamily	0.9%	2%	1%	61%	29%	6%	0%	24,055
4	High-Rise Multifamily	0%	0.4%	0.7%	3%	13%	56%	27%	279
5	Low-Rise Commercial Office	2%	6%	11%	43%	27%	10%	1%	1,236
6	High-Rise Commercial Office	0%	0.8%	4%	17%	52%	25%	2%	118
7	Commercial Retail	1%	7%	13%	38%	17%	8%	17%	3,394
8	Hotels and Motels	0%	0.6%	5%	23%	30%	17%	25%	162
9	Industrial/Manufacturing	0.2%	2%	6%	33%	33%	7%	19%	3,582
10	Institutional & Public Buildings	0.5%	0.8%	2%	7%	7%	3%	80%	1,280
11	Other	0.1%	0.9%	0.8%	25%	7%	23%	43%	11,047
12	Outdoor Spaces	0%	0%	0%	65%	12%	0%	24%	17

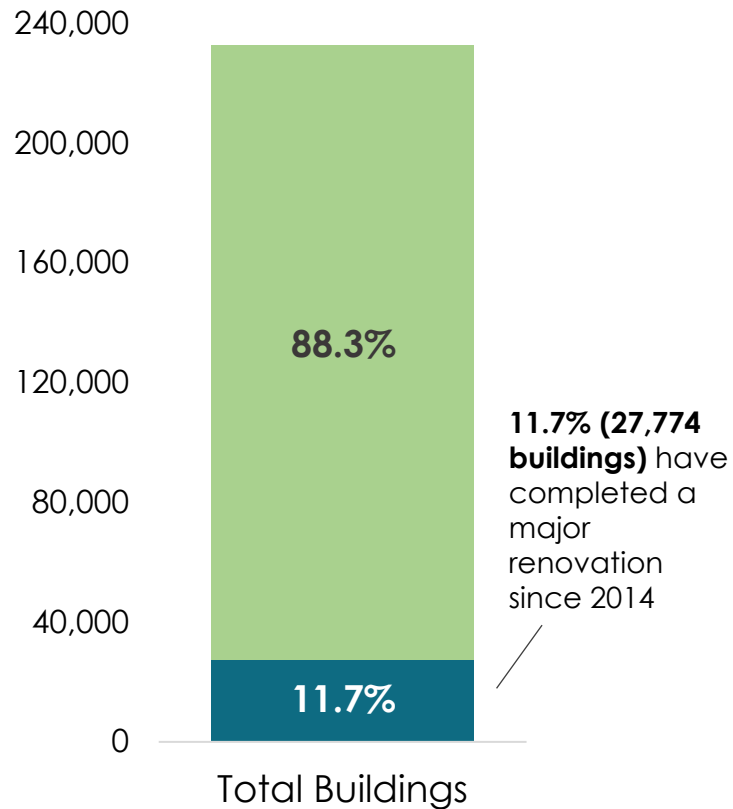
### Square Footage

#	Typology	Pre-1900	1900 - 1924	1925 - 1949	1950 - 1977	1978 - 1999	2000 and later	No Data	Total Sq Ft
1	Single-Family	0%	3%	5%	60%	23%	9%	0%	305,662,521
2	Duplex	2%	7%	8%	64%	15%	4%	0%	12,835,152
3	Low-Rise Multifamily	1%	1%	1%	46%	35%	17%	0%	95,908,849
4	High-Rise Multifamily Complex	0%	0%	0%	1%	17%	82%	0%	26,484,498
5	Low-Rise Commercial Office	1%	2%	5%	36%	31%	20%	5%	33,891,713
6	High-Rise Commercial Office	1%	2%	4%	27%	49%	17%	0%	14,935,596
7	Commercial Retail	0%	0%	1%	12%	51%	34%	1%	16,934,490
8	Hotels and Motels	0%	0%	3%	19%	34%	41%	2%	5,310,957
9	Industrial/Manufacturing	0%	0%	2%	23%	54%	20%	1%	81,330,799
10	Institutional & Public Buildings	0%	1%	0%	42%	30%	13%	13%	4,126,334
11	Other	1%	1%	2%	22%	18%	51%	4%	11,972,196
12	Outdoor Spaces	0%	0%	0%	95%	5%	0%	0%	13,236

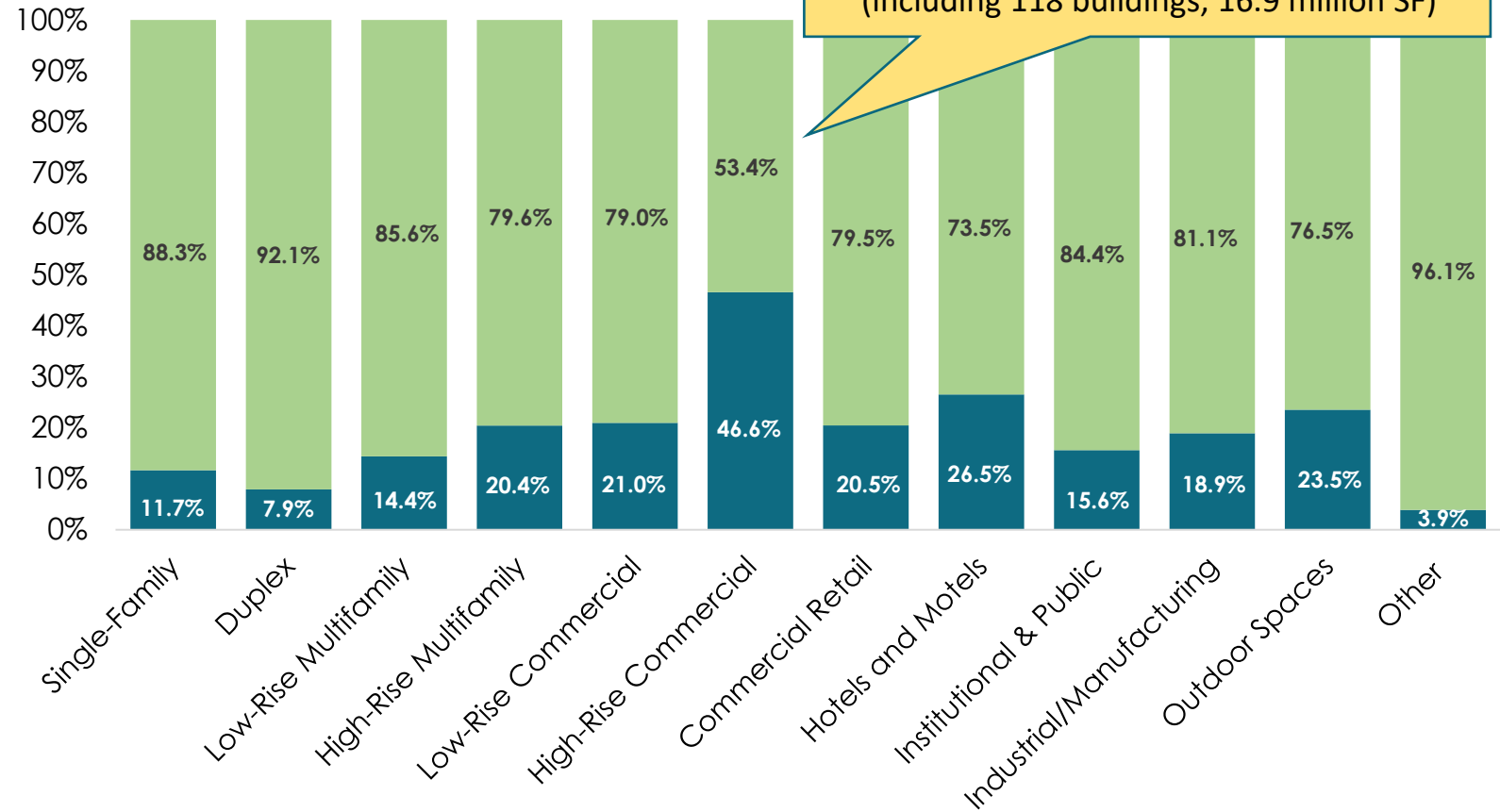
# Technical Indicators | Major Renovations

## Buildings with a Recent Major Renovation (after 2014)

All Buildings (Total Renovations)



Major Renovations by Typology (Percentages)

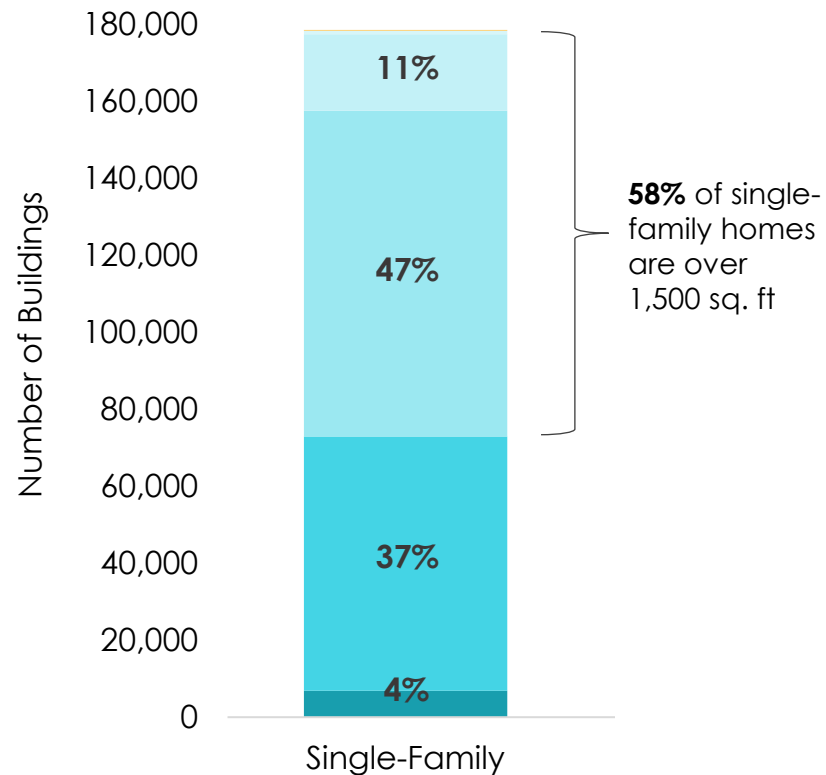




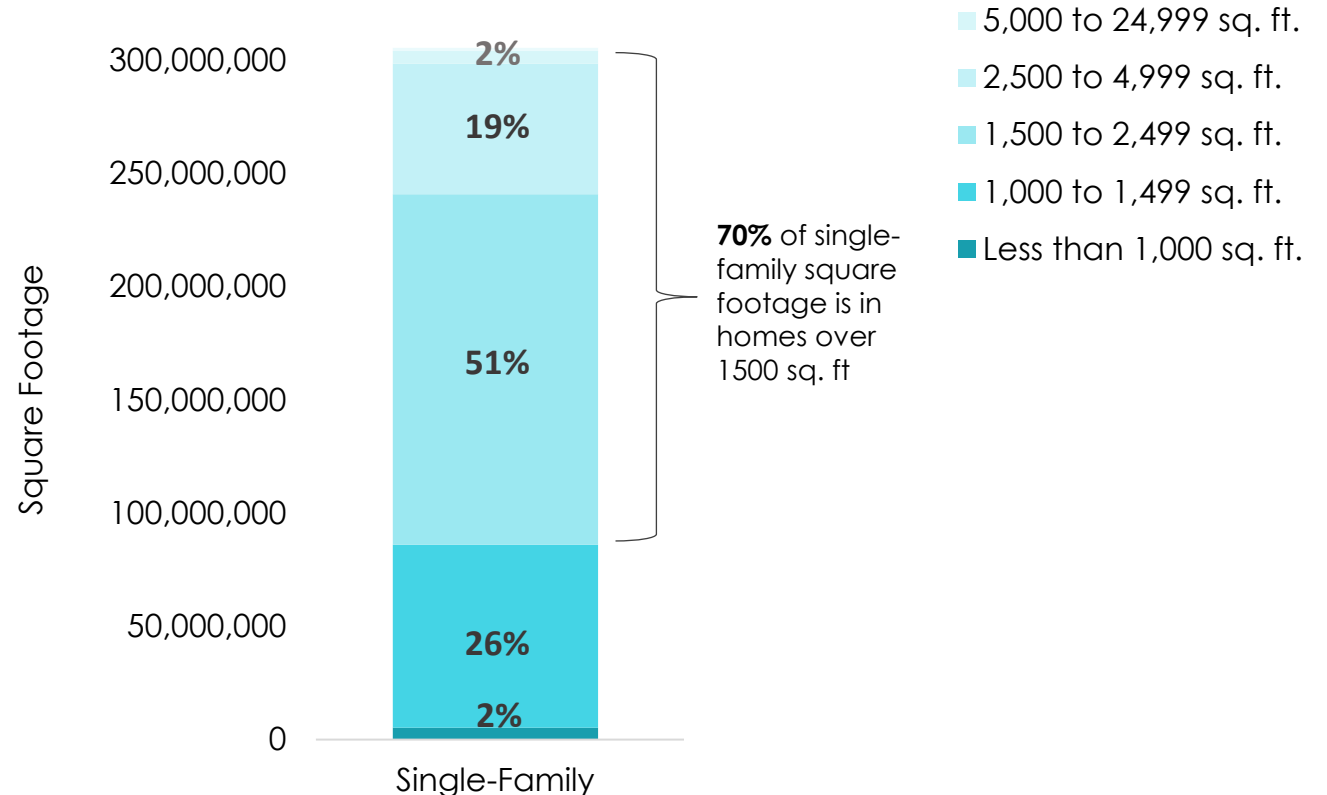
# Technical Indicators | Building Size

## Small Residential Buildings by Building Size

### Number of Buildings by Building Size

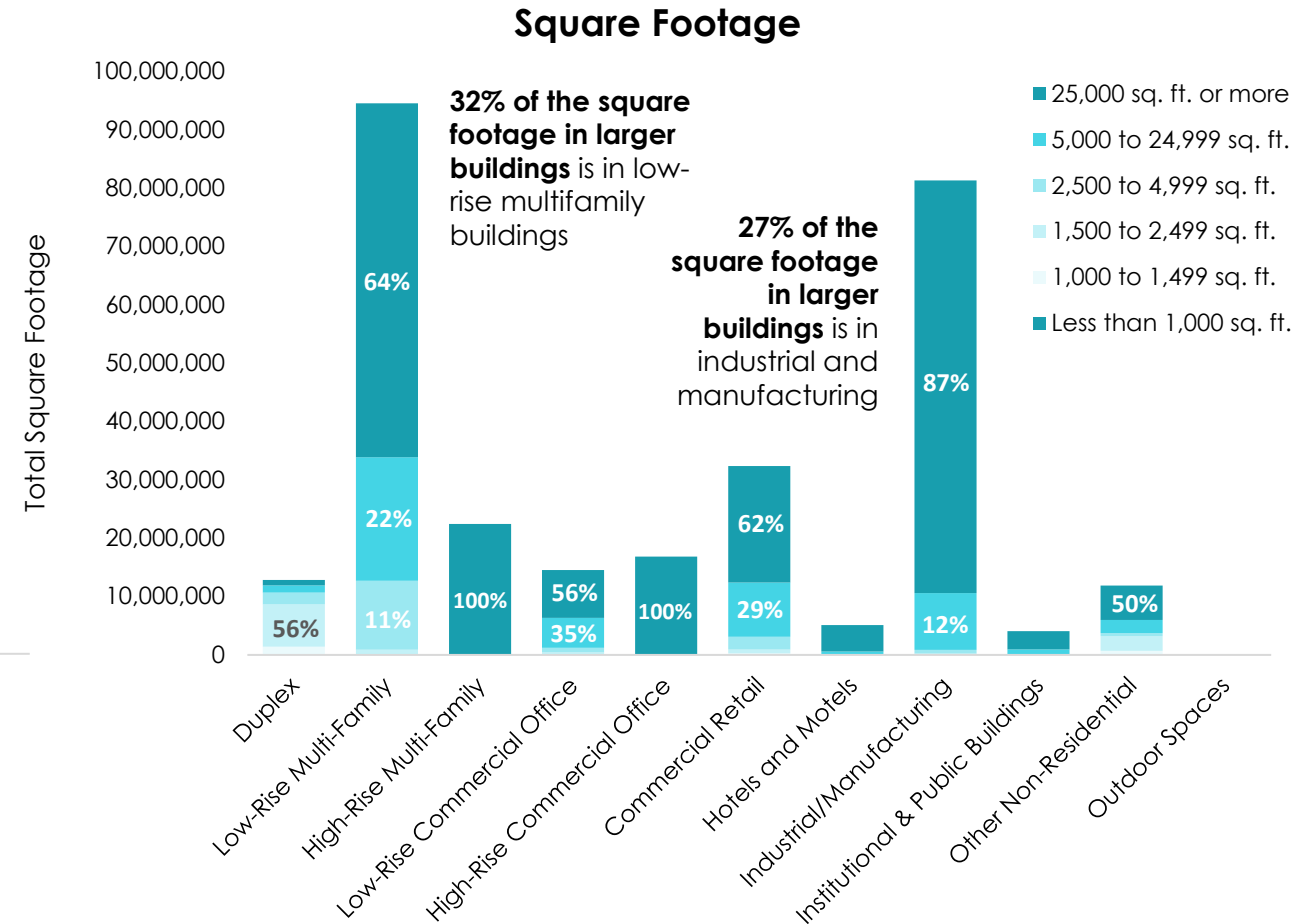
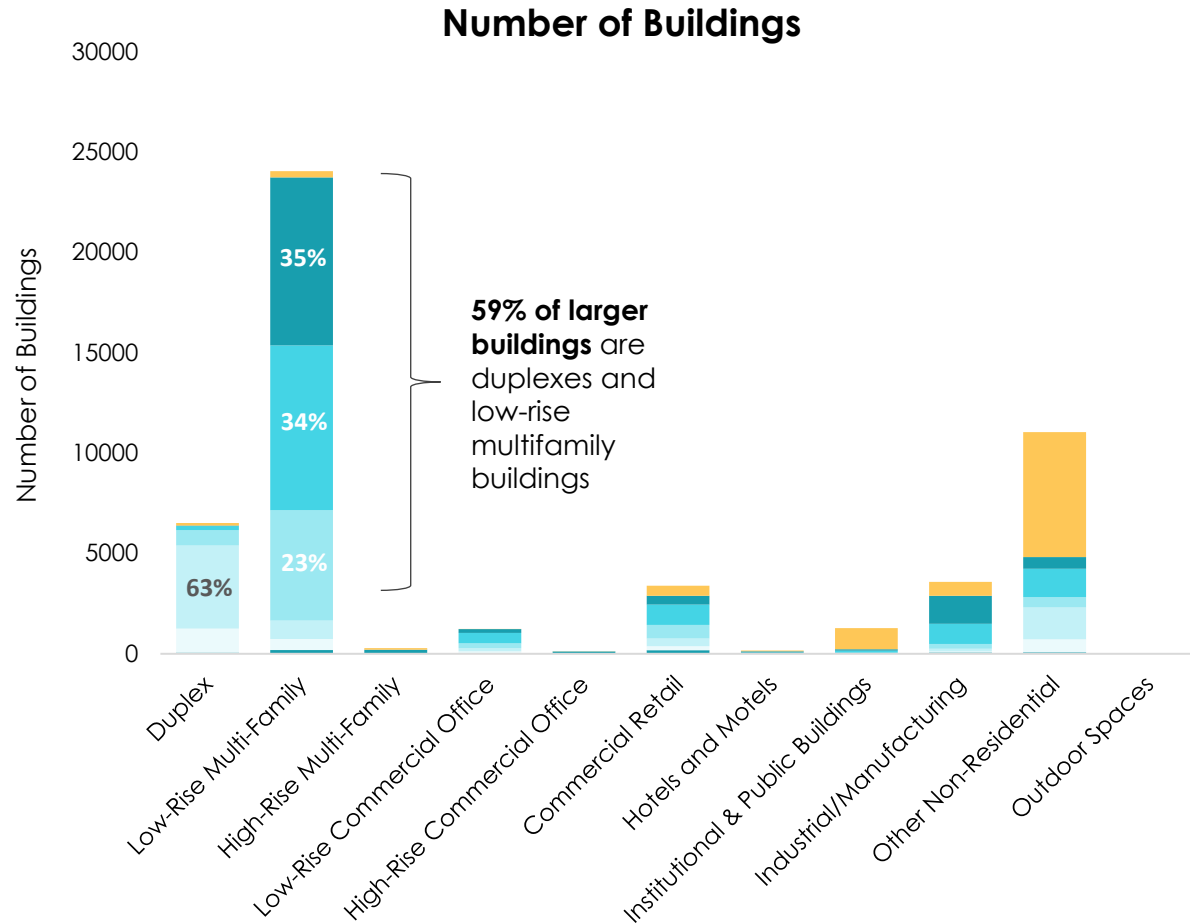


### Square Footage by Building Size



# Technical Indicators | Building Size

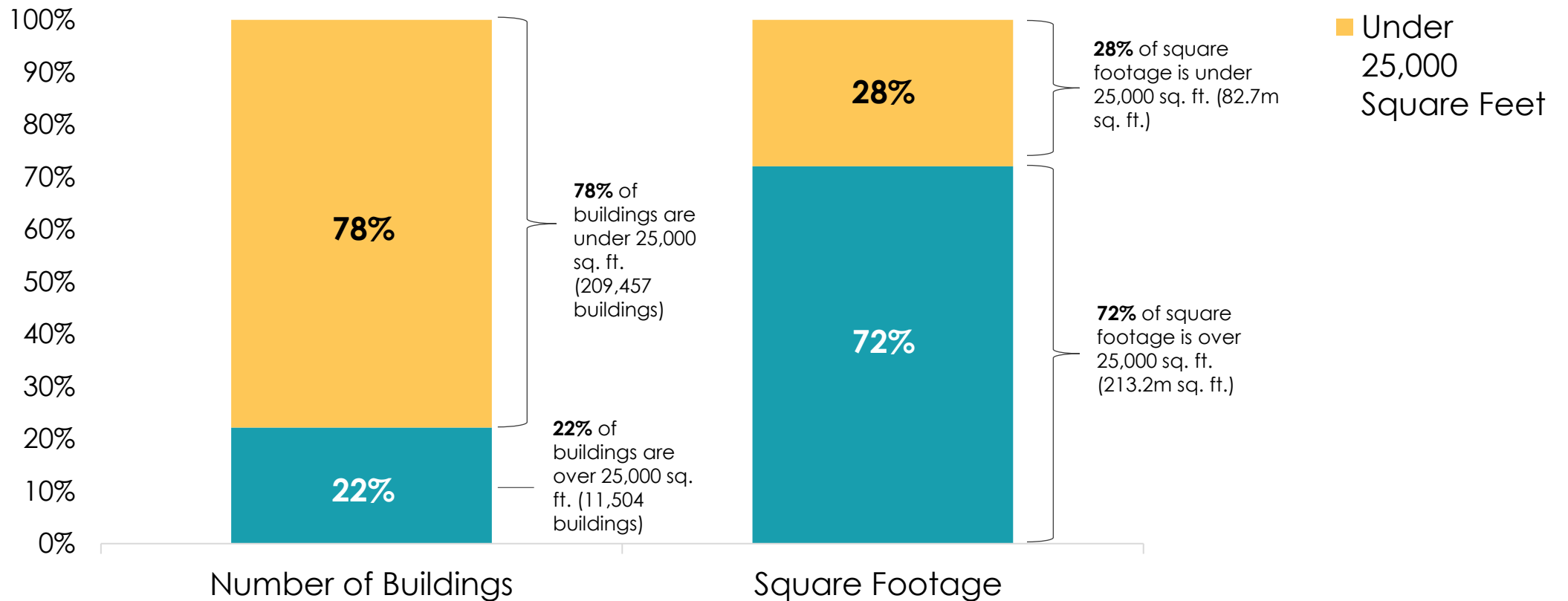
## Larger Buildings



# Technical Indicators | Building Size

## Buildings and Square Footage over 25,000 Square Feet

Not including Single Family Homes





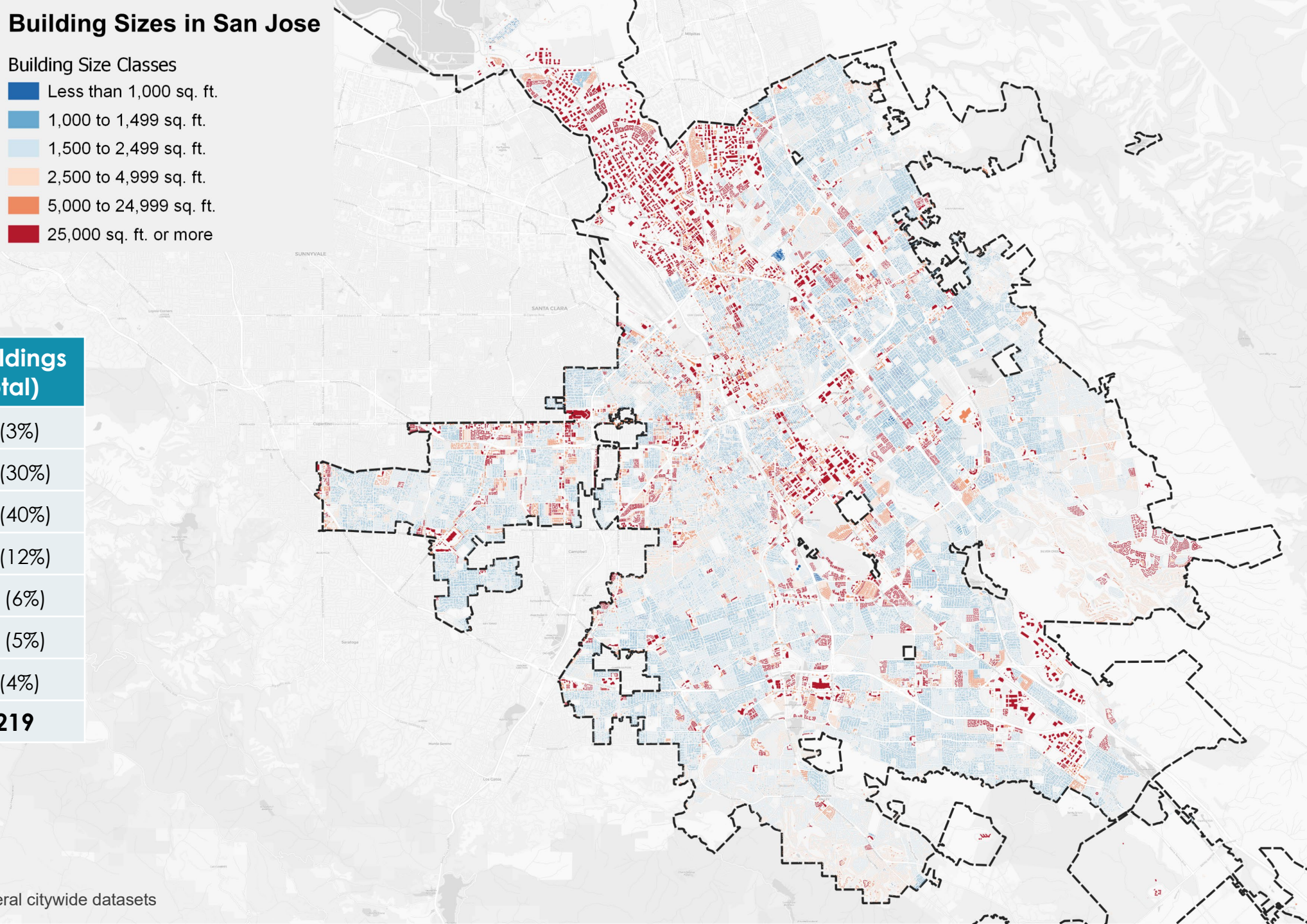
# Building Size

## Number of Buildings by Size (Sq. Ft.)

### Building Sizes in San Jose

#### Building Size Classes

- Less than 1,000 sq. ft.
- 1,000 to 1,499 sq. ft.
- 1,500 to 2,499 sq. ft.
- 2,500 to 4,999 sq. ft.
- 5,000 to 24,999 sq. ft.
- 25,000 sq. ft. or more



Building Size (sq. ft)	# of Buildings (% total)
Less than 1,000	7,442 (3%)
1,000-1,499	68,809 (30%)
1,500-2,499	91,969 (40%)
2,500-4,999	27,855 (12%)
5,000-24,999	13,382 (6%)
25,000 or more	11,504 (5%)
No Data	9,258 (4%)
<b>TOTAL</b>	<b>230,219</b>

Building stock source: BEI analysis of several citywide datasets

# Technical Indicators | Building Size

## Summary Tables

### Number of Buildings

#	Typology	Less than 1,000 sq. ft.	1,000 to 1,499 sq. ft.	1,500 to 2,499 sq. ft.	2,500 to 4,999 sq. ft.	5,000 to 24,999 sq. ft.	25,000 sq. ft. or more	No Data	Total Bldgs
1	Single-Family	3.8%	37%	47%	11%	0%	0%	0.1%	178,530
2	Duplex	1%	18%	63%	12%	3%	0%	2%	6,519
3	Low-Rise Multifamily	0.8%	2%	4%	23%	34%	35%	1%	24,055
4	High-Rise Multifamily	0%	0.0%	0.0%	1%	2%	70%	27%	279
5	Low-Rise Commercial Office	5%	6%	11%	20%	30%	13%	15%	3,394
6	High-Rise Commercial Office	2%	8.2%	13%	19%	42%	16%	0%	1236
7	Commercial Retail	0%	0%	0%	0%	2%	97%	1%	118
8	Hotels and Motels	0%	0.6%	1%	1%	34%	41%	23%	162
9	Industrial/ Manufacturing	1.9%	1%	4%	7%	28%	39%	19%	3,582
10	Institutional & Public Buildings	0.4%	1.3%	1%	1%	8%	6%	82%	1,280
11	Other	0.7%	5.8%	14.4%	5%	13%	5%	56%	11,047
12	Outdoor Spaces	29%	12%	6%	18%	0%	0%	35%	17

### Square Footage

#	Typology	Less than 1,000 sq. ft.	1,000 to 1,499 sq. ft.	1,500 to 2,499 sq. ft.	2,500 to 4,999 sq. ft.	5,000 to 24,999 sq. ft.	25,000 sq. ft. or more	Total Sq. Ft.
1	Single-Family	2%	26%	51%	19%	2%	0%	305,662,521
2	Duplex	0%	11%	56%	16%	10%	7%	12,835,152
3	Low-Rise Multifamily	0%	0%	1%	12%	22%	65%	95,908,849
4	High-Rise Multifamily	0%	0%	0%	0%	0%	100%	26,484,498
5	Low-Rise Commercial Office	0%	1%	2%	7%	27%	63%	33,891,713
6	High-Rise Commercial Office	0%	1%	2%	5%	34%	58%	14,935,596
7	Commercial Retail	0%	0%	0%	0%	0%	100%	16,934,490
8	Hotels and Motels	0%	0%	0%	0%	11%	89%	5,310,957
9	Industrial/ Manufacturing	0%	0%	0%	1%	12%	87%	81,330,799
10	Institutional & Public Buildings	0%	0%	1%	1%	21%	77%	4,126,334
11	Other	0%	6%	21%	5%	19%	50%	11,972,196
12	Outdoor Spaces	16%	15%	16%	53%	0%	0%	13,236



# Technical Indicators | Building Height

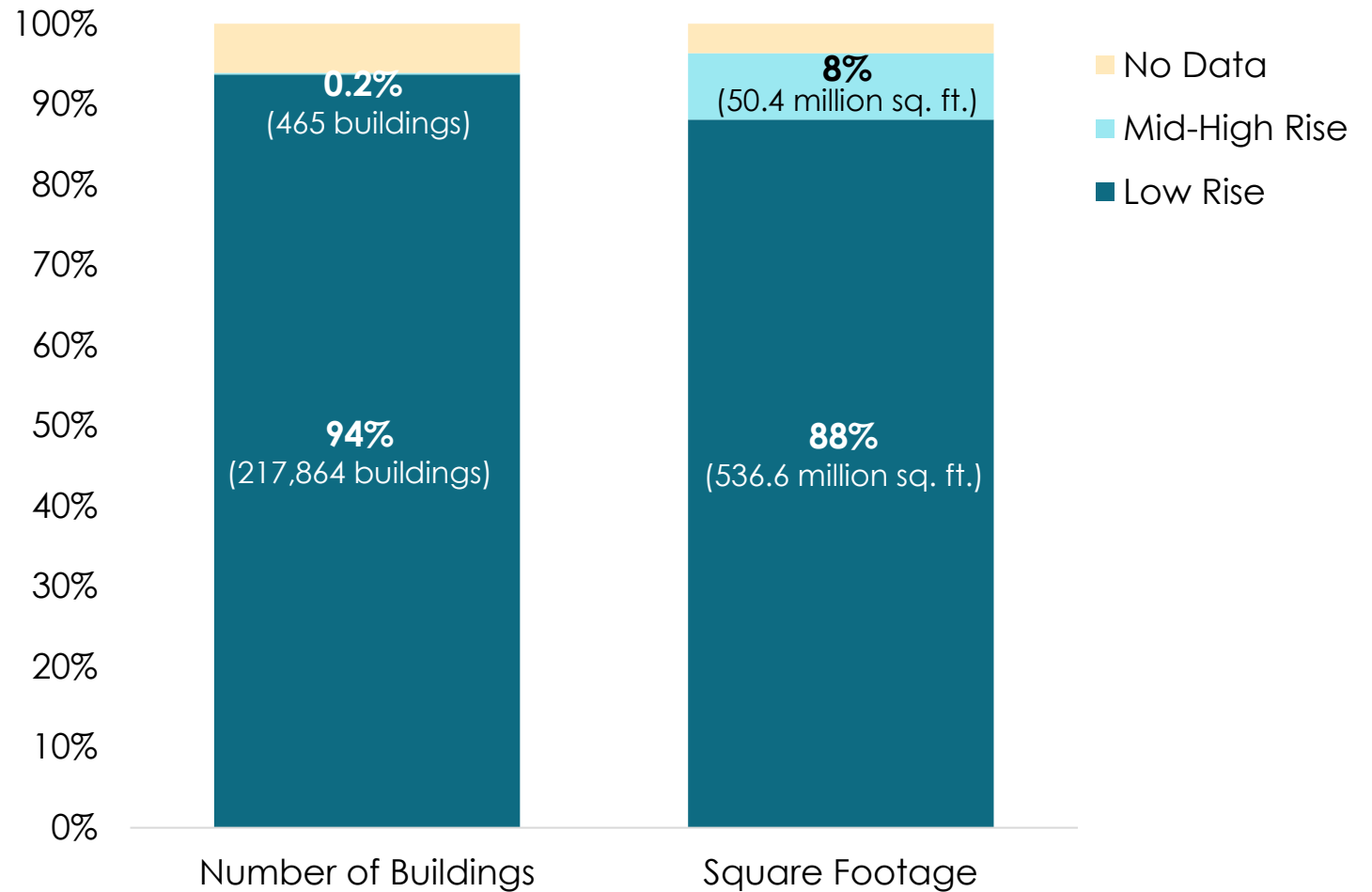
## Breakdown of Buildings by Height

### Low-Rise Buildings: Up to 3 Stories

- 94% of buildings
- 88% of square footage

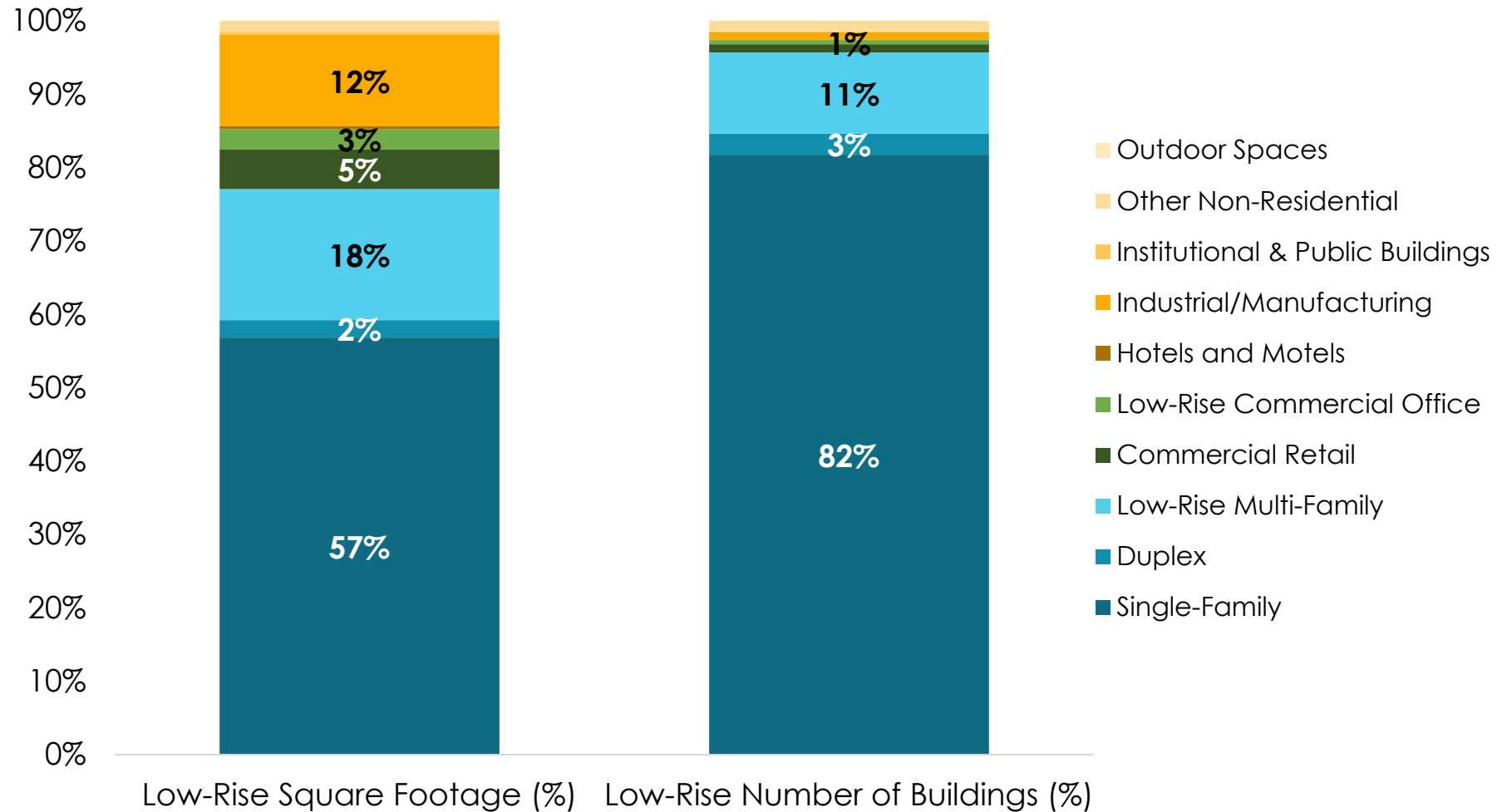
### Mid- to High-Rise Buildings: 4+Stories

- 0.2% of buildings
- 8% of square footage



# Technical Indicators | Building Height

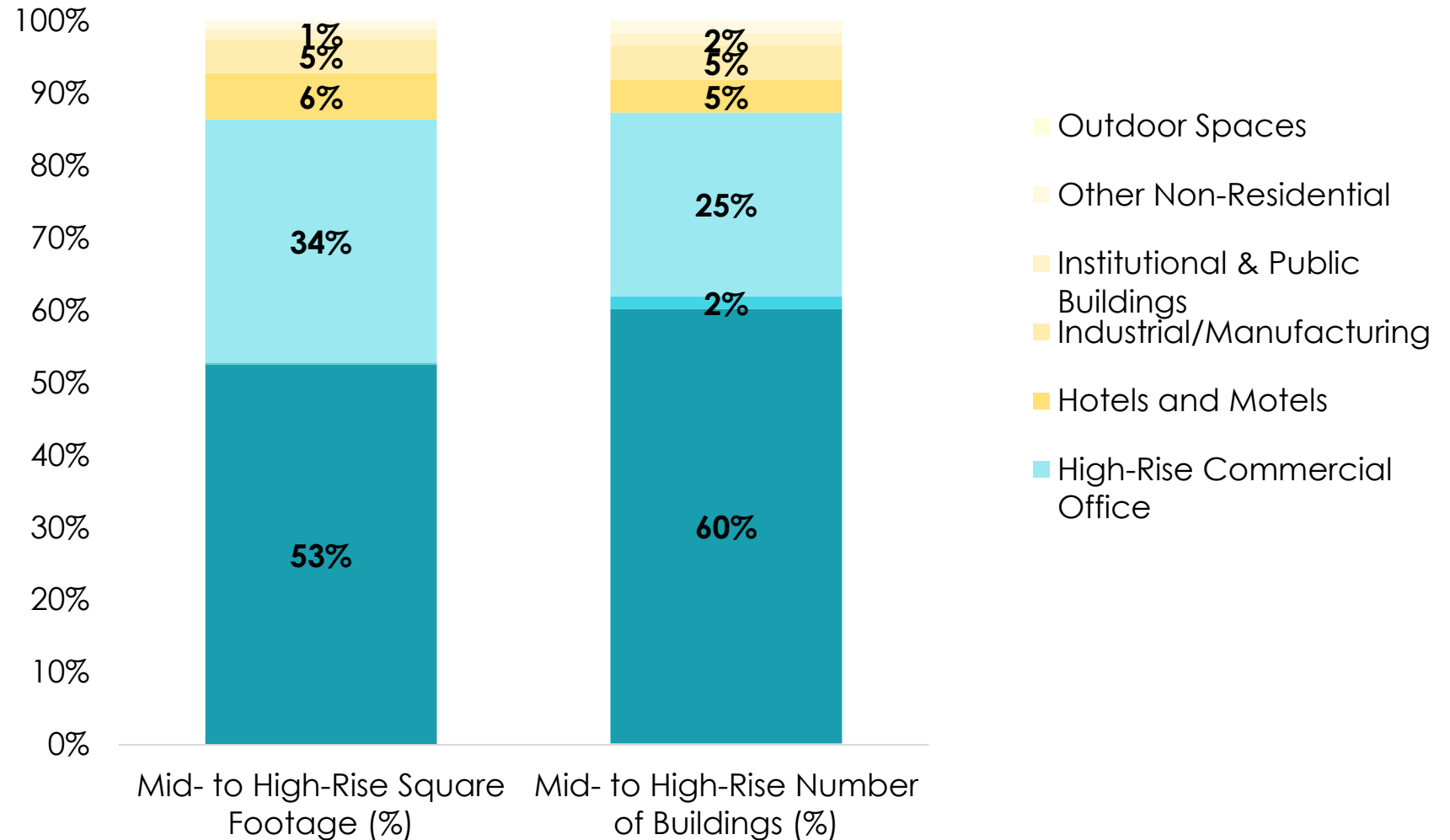
## Low-Rise Buildings (Up to 3 Stories)



# Technical Indicators | Building Height

## Mid- to High-Rise Buildings (4+Stories)

Only 465 buildings were categorized as mid- to high-rise buildings in the available data. However, these alone make up nearly 10% of San José's built square footage.





# Building Height

## Building Heights in San Jose

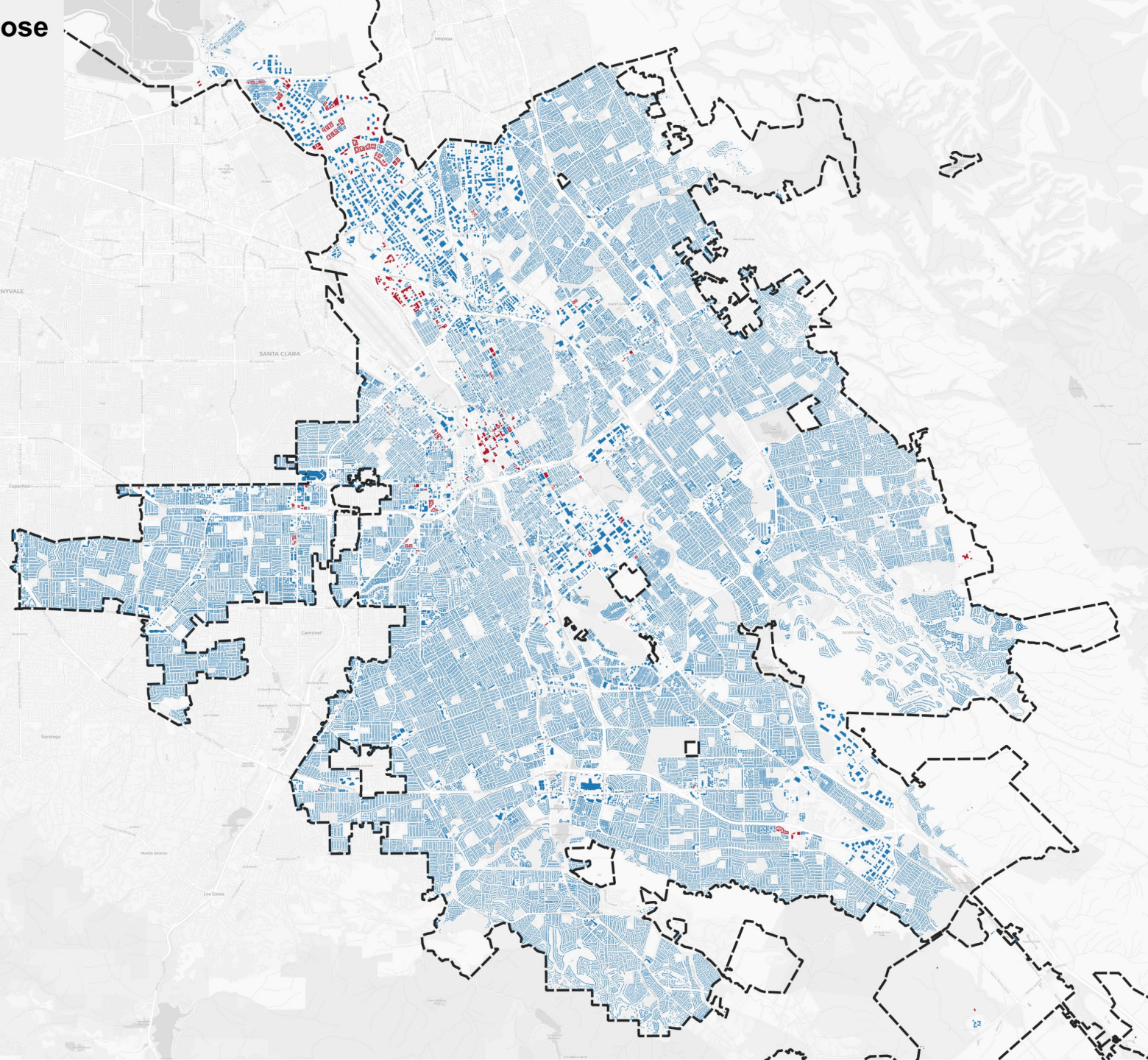
Height Class

Low Rise

Mid to High Rise

## Number of Buildings by Height

Height Classification	Number of Buildings (% of Total)
Low-Rise (<4 Floors)	217,864 (94%)
Mid-to-High Rise (4+ Floors)	465 (0.2%)
No Data	14,212 (6.11%)
<b>Total Buildings</b>	<b>232,541 (100%)</b>



# Technical Indicators | Building Height

## Summary Tables

### Number of Buildings

#	Typology	Low Rise (Total)	Low Rise (%)	Mid to High Rise (Total)	Mid to High Rise (%)	No Data (Total)	No Data (%)	Grand Total
1	Single-Family	178,098	100%	N/A	0%	432	0%	178,530
2	Duplex	6,298	97%	1	0%	220	3%	6,519
3	Low-Rise Multifamily	24,055	100%	N/A	0%		0%	24,055
4	High-Rise Multifamily	N/A	0%	279	100%		0%	279
5	Commercial Retail	2,441	72%	8	0%	945	28%	3,394
6	Low-Rise Commercial Office	1,236	100%	N/A	0%		0%	1,236
7	High-Rise Commercial Office	N/A	0%	118	100%		0%	118
8	Hotels and Motels	103	64%	21	13%	38	23%	162
9	Industrial/ Manufacturing	2,318	65%	22	1%	1,242	35%	3,582
10	Institutional & Public Buildings	182	14%	8	1%	1,090	85%	1,280
11	Other	3,122	28%	8	0%	7,917	72%	11,047
12	Outdoor Spaces	11	65%	N/A	0%	6	35%	17

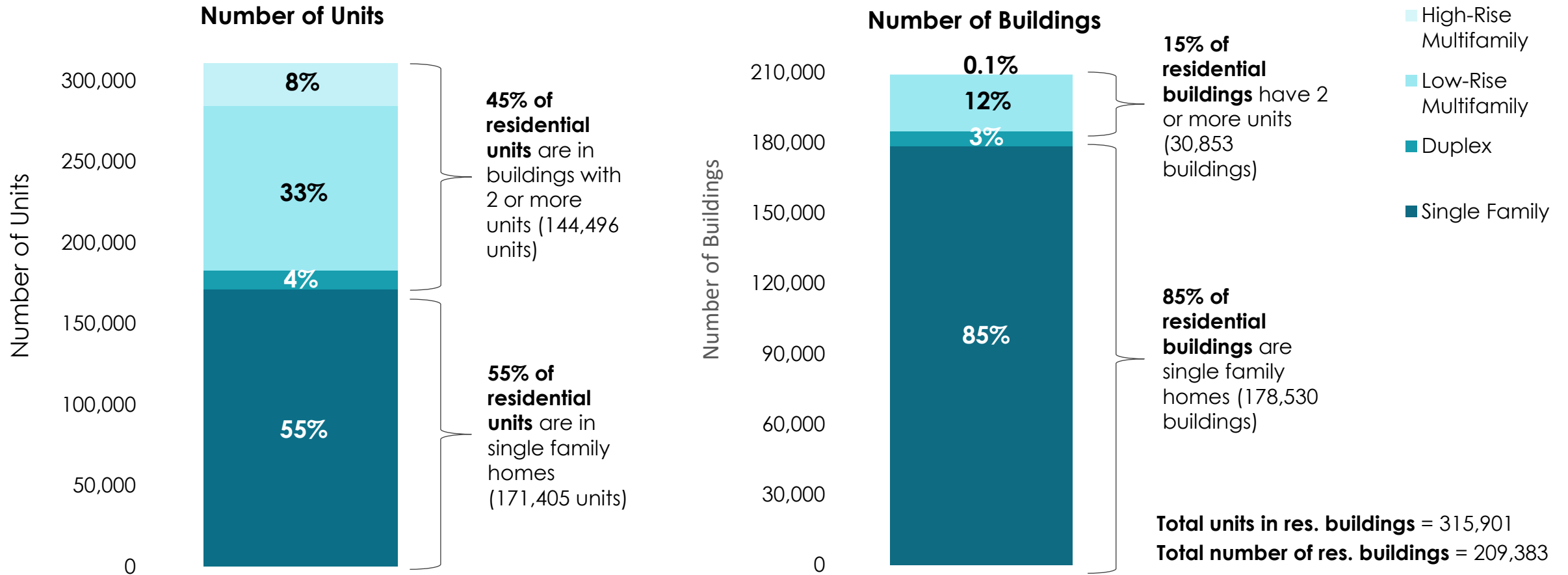
### Square Footage

#	Typology	Low Rise (Total Sq Ft)	Low Rise (%)	Mid to High Rise (Total Sq Ft)	Mid to High Rise (%)	No Data (Total Sq Ft)	No Data (%)	Grand Total
1	Single-Family	305,064,011	100%	N/A	0%	598,510	0%	305,662,521
2	Duplex	12,651,745	99%	2,191	0%	181,216	1%	12,835,152
3	Low-Rise Multifamily	95,908,849	100%	N/A	0%		0%	95,908,849
4	High-Rise Multifamily	N/A	0%	26,484,498	100%		0%	26,484,498
5	Commercial Retail	28,873,203	85%	122,980	0%	4,895,530	14%	33,891,713
6	Low-Rise Commercial Office	14,935,596	100%	N/A	0%		0%	14,935,596
7	High-Rise Commercial Office	N/A	0%	16,934,490	100%		0%	16,934,490
8	Hotels and Motels	2,055,843	39%	3,234,114	61%	21,000	0%	5,310,957
9	Industrial/ Manufacturing	66,878,308	82%	2,355,268	3%	12,097,223	15%	81,330,799
10	Institutional & Public Buildings	2,311,943	56%	661,413	16%	1,152,978	28%	4,126,334
11	Other	7,953,544	66%	618,673	5%	3,399,979	28%	11,972,196
12	Outdoor Spaces	13,236	100%	N/A	0%		0%	13,236



# Technical Indicators | Residential Units

## Housing Units in Residential Buildings



# Residential Units

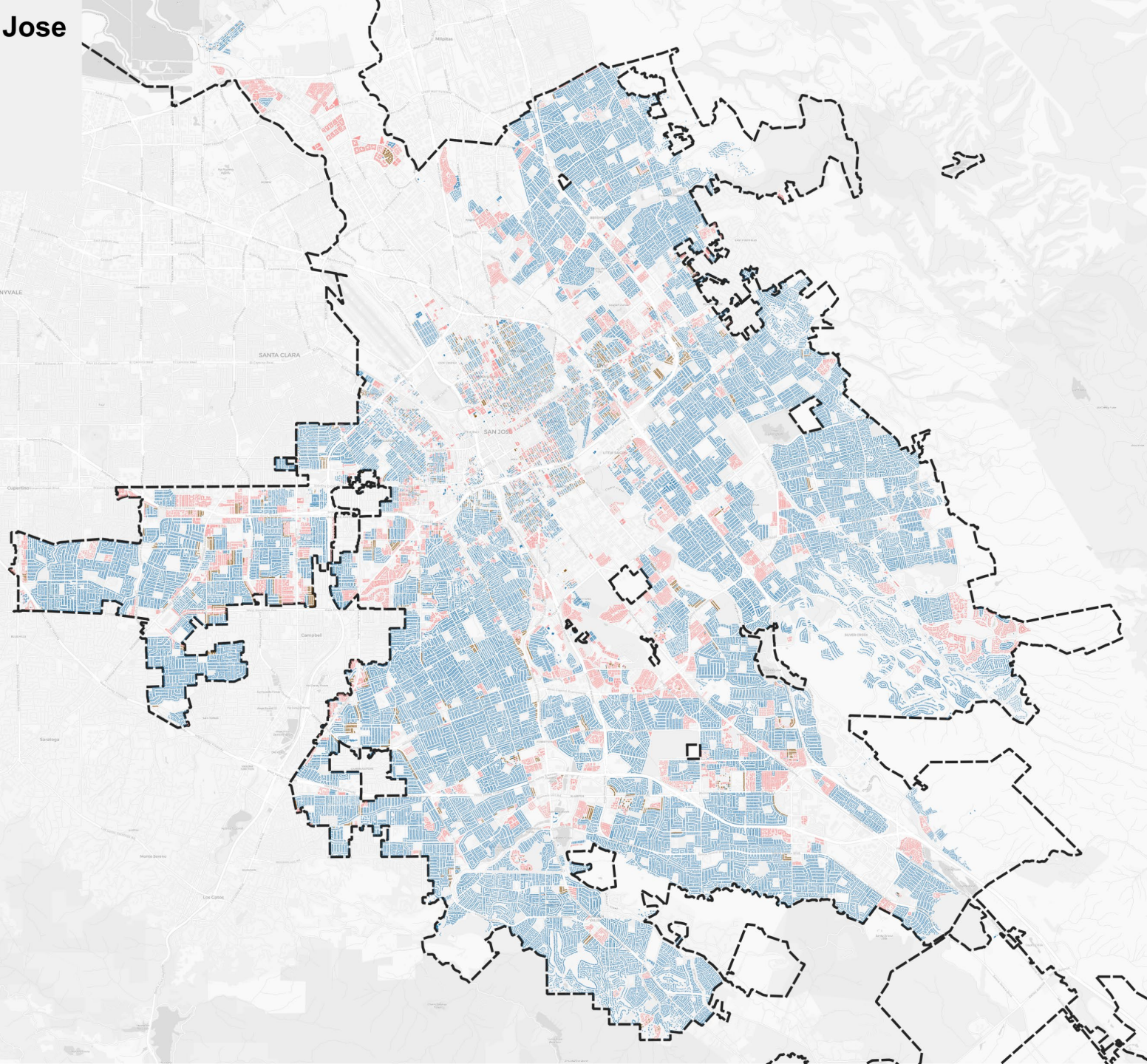
## Units per Building in San Jose

### Building Units

- Single-Family
- Duplex
- Multi-Family (>= 3 Units)

## Number of Residential Units by Parcel

Unit Classification	Number of Residential Units (% of Total)	Number of Residential Parcels (% of Total)
Single-Family (1 unit)	171,405 (54%)	171,405 (93%)
Duplex (2 units)	11,380 (4%)	5,690 (3%)
Multifamily (3+ units)	133,116 (42%)	7,009 (4%)
<b>Total Residential Units and Parcels</b>	<b>315,901 (100%)</b>	<b>184,104 (100%)</b>



# Technical Indicators | Residential Units

## Residential Units – Summary Tables

### Number of Buildings

#	Typology	1 unit (%)	2 units (%)	3+ units (%)	No Data (%)	Grand Total
1	Single-Family	100%	---	---	---	178,530
2	Duplex	---	100%	---	---	6,519
3	Low-Rise Multifamily	---	---	99.96%	0.04%	24,055
4	High-Rise Multifamily	---	---	100%		279
5	Commercial Retail	47%	13%	29%	12%	3,394
6	Low-Rise Commercial Office	57%	12%	28%	3%	1,236
7	High-Rise Commercial Office	42%	10%	37%	10%	118
8	Hotels and Motels	6%	3%	85%	6%	162
9	Industrial/Manufacturing	41%	15%	38%	7%	3,582
10	Institutional & Public Buildings	21%	11%	65%	3%	1,280
11	Other	8%	3%	54%	34%	11,047
12	Outdoor Spaces	23%	12%	31%	33%	105
#	No data	25%	8%	67%	---	2,322

### Square Footage

#	Typology	1 unit (%)	2 units (%)	3+ units (%)	No Data (%)	Grand Total
1	Single-Family	100%	---	---	---	305,662,521
2	Duplex	---	100%	---	---	12,835,152
3	Low-Rise Multifamily	---	---	99.98%	0.02%	95,908,849
4	High-Rise Multifamily	---	---	100%		26,484,498
5	Commercial Retail	47%	13%	32%	8%	33,891,713
6	Low-Rise Commercial Office	53%	11%	32%	4%	14,935,596
7	High-Rise Commercial Office	50%	8%	28%	13%	16,934,490
8	Hotels and Motels	3%		96%	0.5%	5,310,957
9	Industrial/Manufacturing	53%	14%	32%	1%	81,330,799
10	Institutional & Public Buildings	38%	13%	41%	7%	4,126,334
11	Other	29%	3%	27%	41%	11,972,196
12	Outdoor Spaces	92%	2%	2%	4%	160,418

Note: These tables include units listed in the data under non-residential building typologies. This may be due to mixed use parcels, or an error or misclassification in base datasets.



# Ownership & Decision-Making | Affordable Housing

## List of Ownership and Decision-Making Indicators

- Affordable housing
- Rent stabilization
- Potential ADUs
- Early Adopters
- New homeowners
- Baby boomers
- Millennials
- Families with children
- School service areas



# Ownership & Decision-Making | Affordable Housing

Affordable housing requires additional considerations for future policies and programs, given unique needs, constraints, funding structures and timelines. In considering assistance for affordable housing, it is important to consider the following principles:

- **PROTECT tenants:** Ensure renters are not unnecessarily forced out of their homes
- **PRESERVE housing and stabilize communities:** Ensure housing that is currently affordable remains affordable to those who live there
- **PRODUCE more affordable housing:** Build new housing that serves all income levels to accommodate new residents

All three of these approaches should be considered when developing electrification programs and policies to avoid negative consequences for vulnerable communities, including accelerated displacement or gentrification. Partnering closely with the City of San José Housing Department is critical to developing equitable approaches to affordable housing.

# Ownership & Decision-Making | Affordable Housing

**Regulated Affordable Housing** (or “deed-restricted” affordable housing) is housing that is rent-restricted or receives state, federal, and/or local subsidies to offer housing for income-qualified individuals. Multifamily buildings can contain a range of units subject to different rent restrictions and subsidy stipulations, providing housing to families at multiple income levels. In San José, this includes housing built under the **Inclusionary Housing Ordinance (IHO)**, which:

- Requires all new residential developments (>20 units) to ensure 15% of units in new projects are affordable (can negotiate income-level breakdown & on-site vs. off-site)
- Allows for alternative compliance pathways include paying an in-lieu fee or providing 20% HUD Restricted Units (Section 8) project-based vouchers
- Affordability restrictions remain in place often for 55 years

# Ownership & Decision-Making | Affordable Housing

**Unregulated Affordable Housing** (also known as “Naturally-Occurring Affordable Housing”) is housing that is currently priced below local average market rate and/or is affordable to existing residents, but is not subject to regulations restricting rents or incomes. This type of housing:

- May be located in lower-income areas with fewer services, which can create and exacerbate existing inequities for residents.
- May also be located in higher-income or gentrifying areas and be undervalued, posing a threat to continued affordability.
- Generally makes up a substantial portion of any city’s housing stock, although there is a lack of good data to identify these buildings.

# Ownership & Decision-Making | Rent Stabilization

**Apartment Rent Ordinance (ARO)**, also known as “Rent Control” or “Rent Stabilization” is another important housing sector to consider in potential policies and programs.

- The City does not consider ARO units ‘affordable housing’ since it does not serve specific communities, however, does tend to fall 20-40% below market rates overall.
- ARO applies to **buildings with 3 or more units and built prior to 1979. Rent is limited to a 5% annual increase**, but the landlord can raise the rent to market rate if the tenant vacates voluntarily or is evicted.

San José also has a **Tenant Protection Ordinance (TPO)**, which only allows landlords to evict tenants only based on 13 “just causes”, with a goal to promote stability. ARO units are subject to TPO, however TPO includes several other unit types.

Although these policies provide needed protections and affordability for tenants, additional solutions are needed to ensure affordability for all in San José.

**2019 Rent Control Registry\***

Unit Type	# of RC units	RC Average Rent	Market-Rate Average Rent
Studio	2,608	\$1,434	\$1,958
1 bedroom	15,082	\$1,630	\$2,236
2 bedroom	14,046	\$1,967	\$2,738
3 bedroom	1,688	\$2,346	\$3,384
4 bedroom	38	\$2,898	Unavailable
Pending	43	--	

*\*88% of rent controlled units have reported*

Note: Since subsidized affordable housing restrictions are stricter, those buildings are exempt from rent control regulations. However, it is possible in rare cases a building may contain both types of units. It is more likely that subsidized affordability requirements have expired and one or both datasets have not been fully updated.

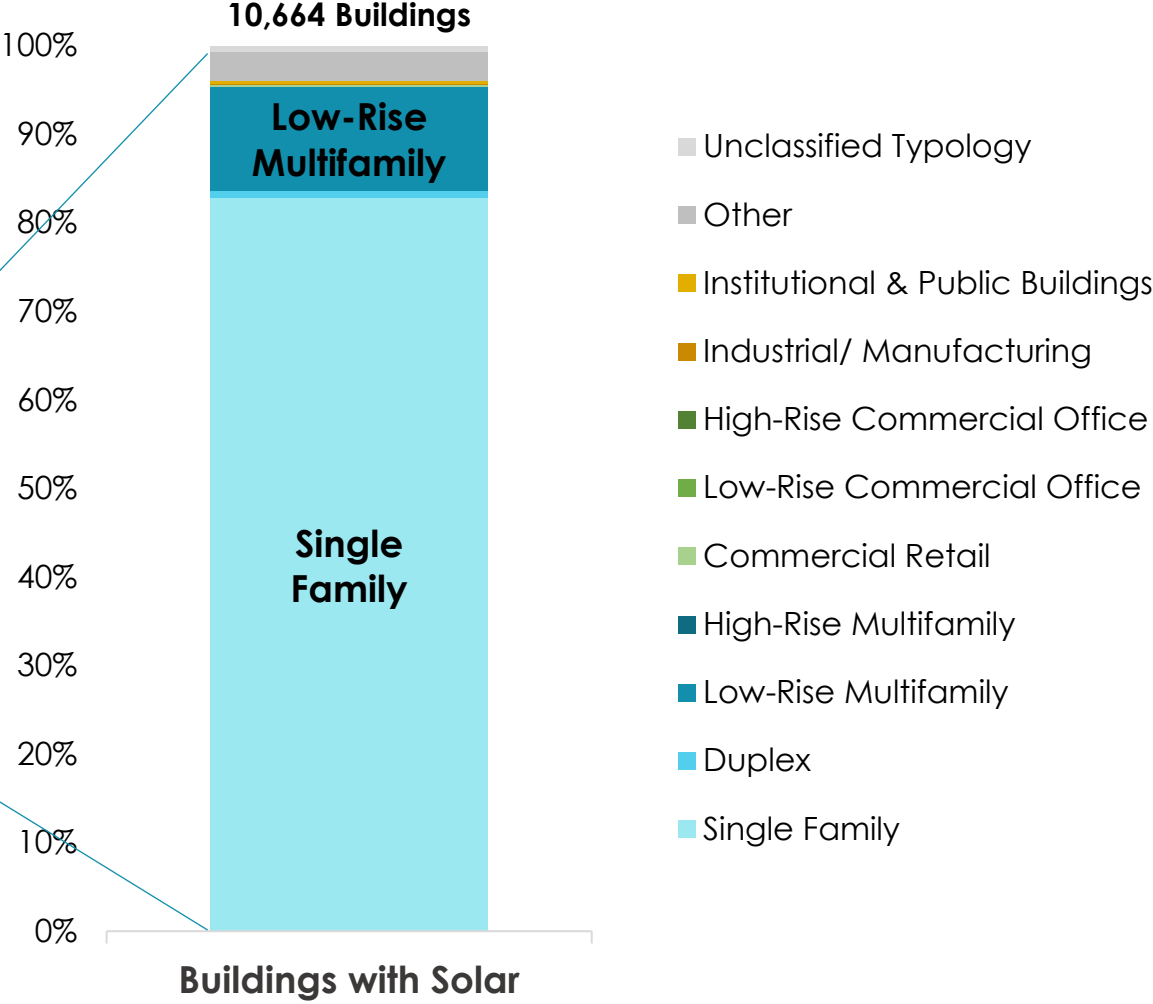
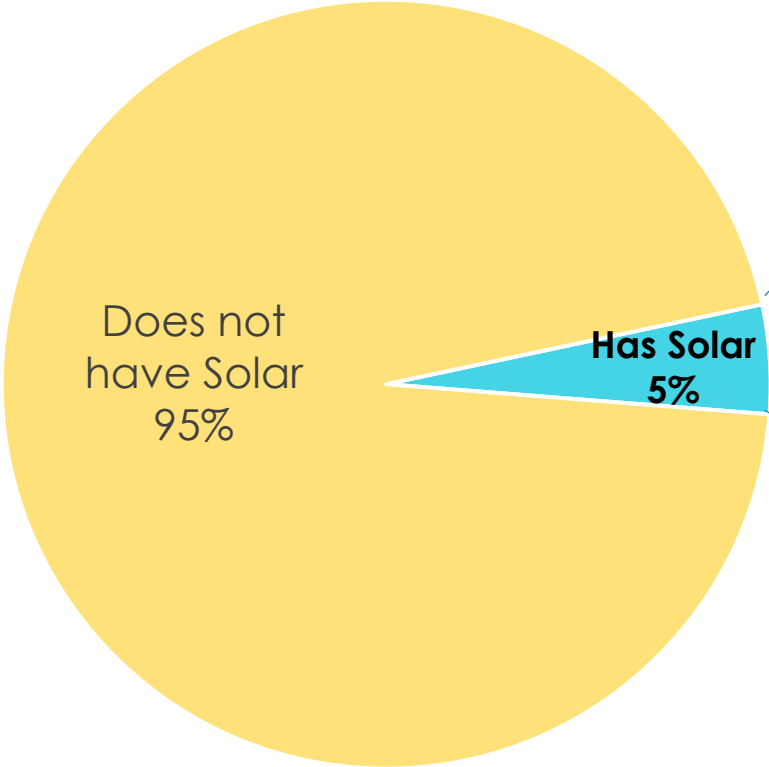


# Ownership & Decision-Making | Solar PV

## Solar PV Installed

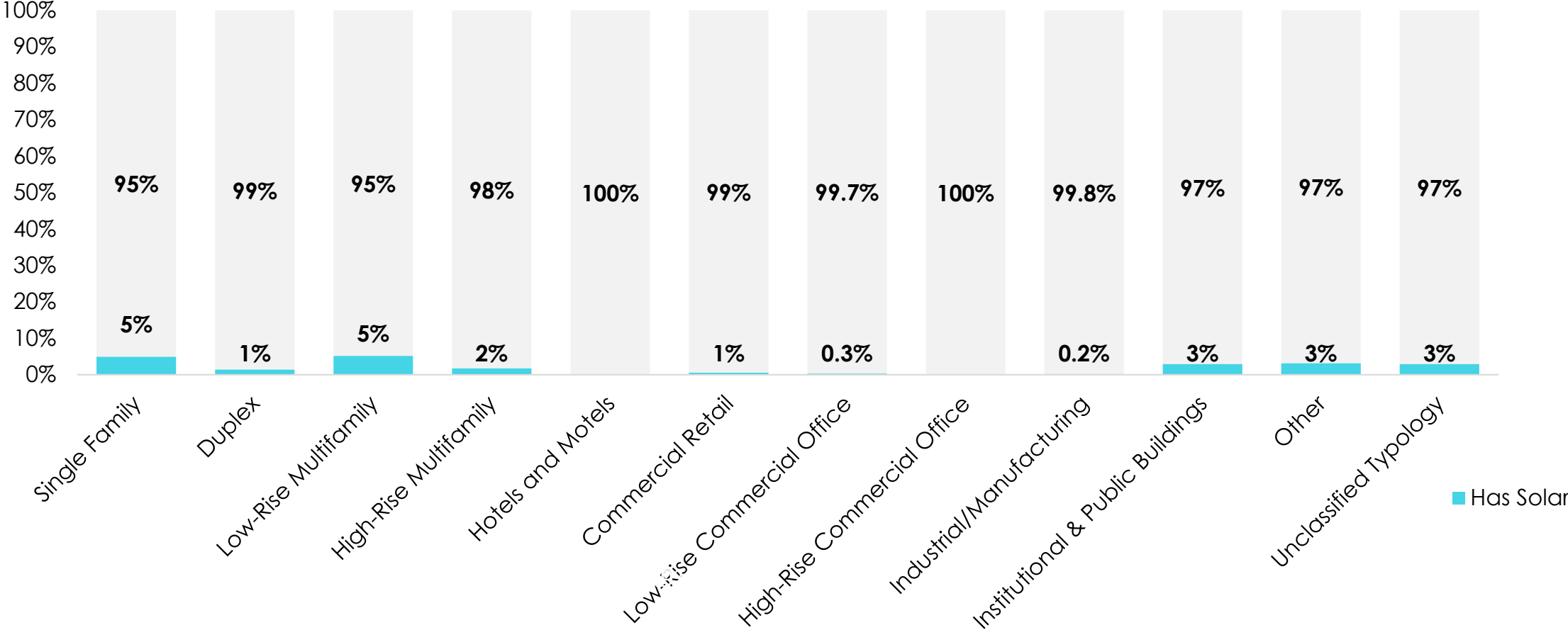
Total Buildings with Solar = 10,664

Proportion of Buildings with Solar



# Ownership & Decision-Making | Solar PV

## Solar PV Installed by Typology





# Solar PV

## Early Adopters

Building Occupant Characteristics

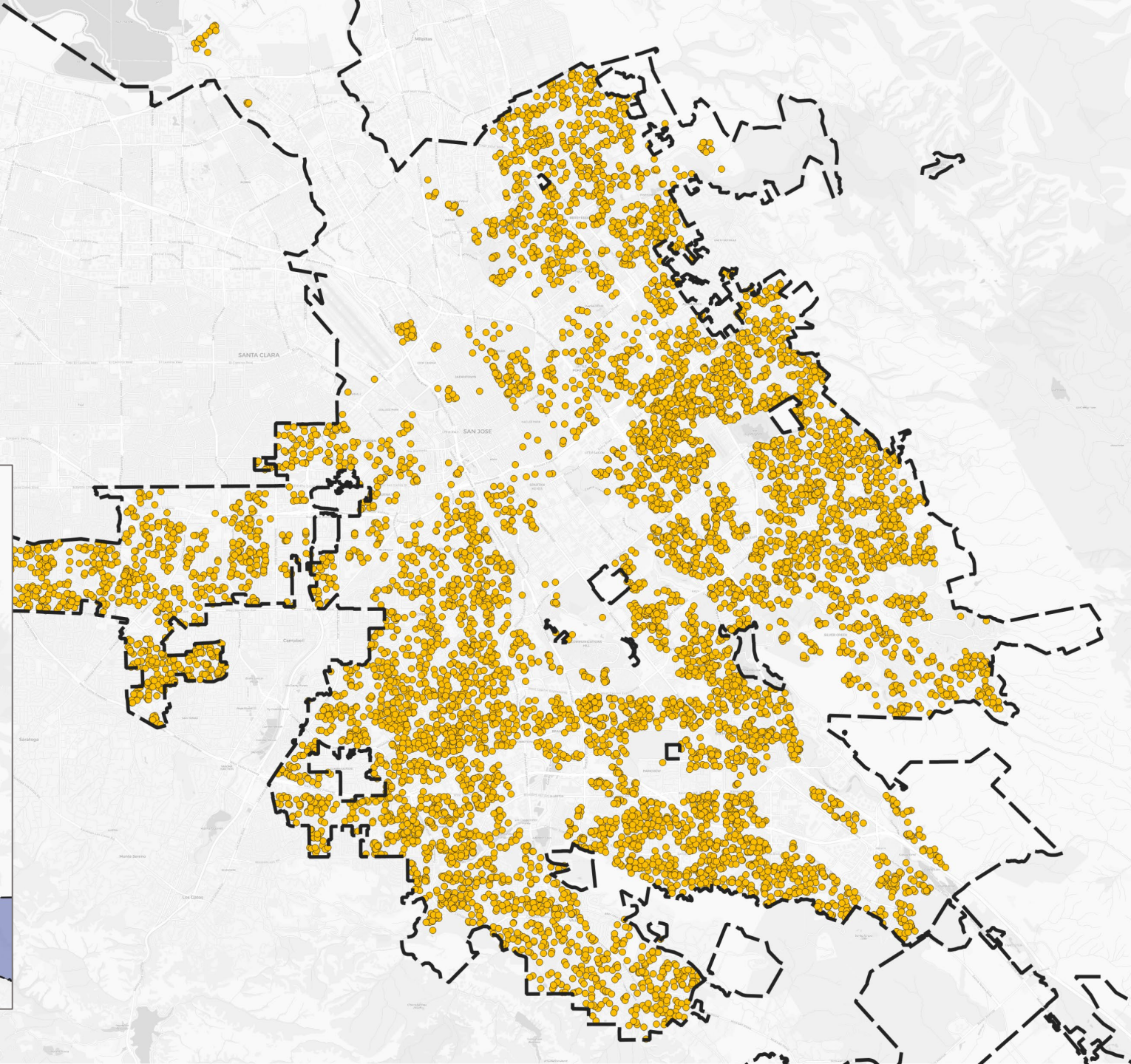
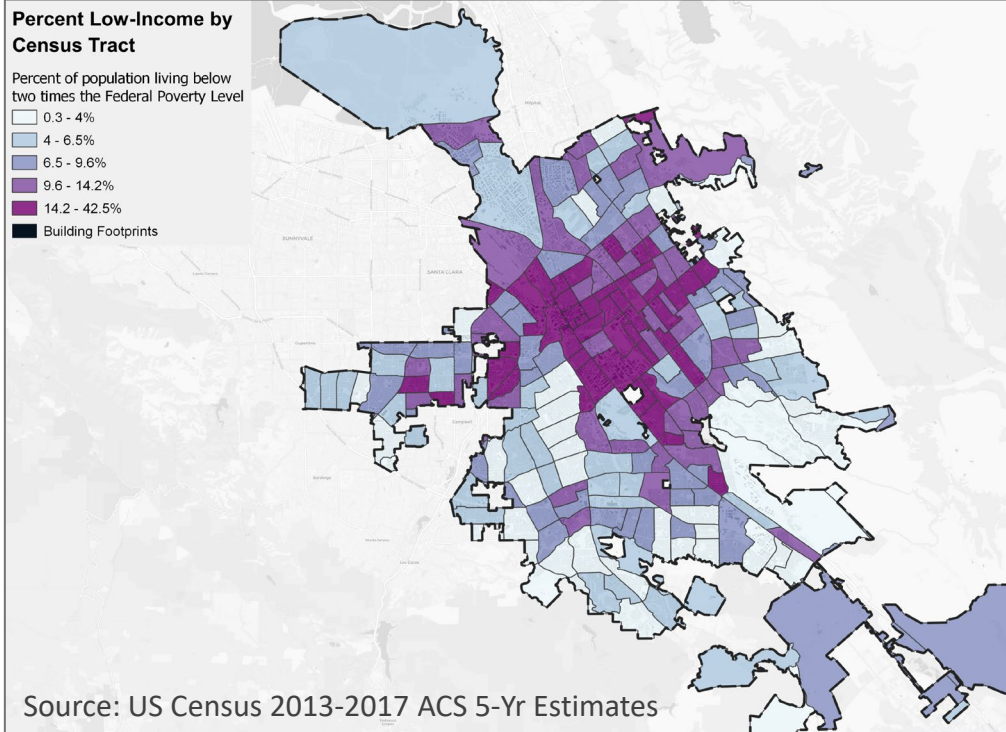
● Has PV

## Location of Properties with Solar PV Installed

Total Parcels with Solar = 9,342

Total Buildings with Solar = 10,664

## For Comparison: Low-income Distribution

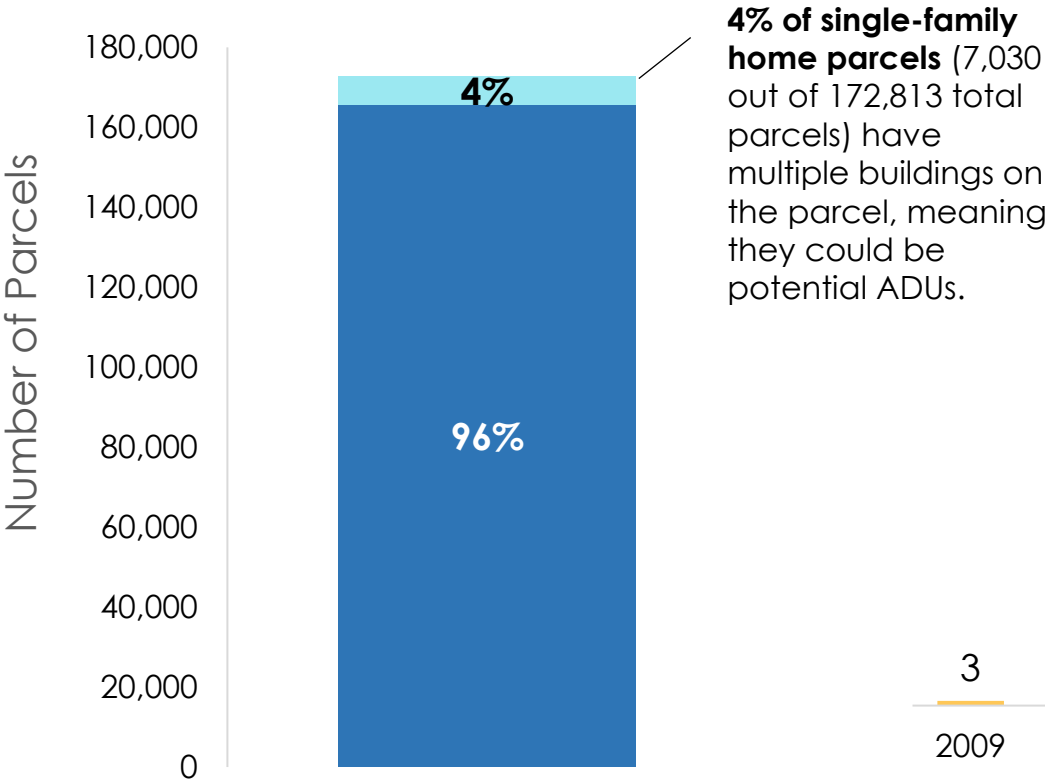


# Ownership & Decision-Making | Potential ADUs

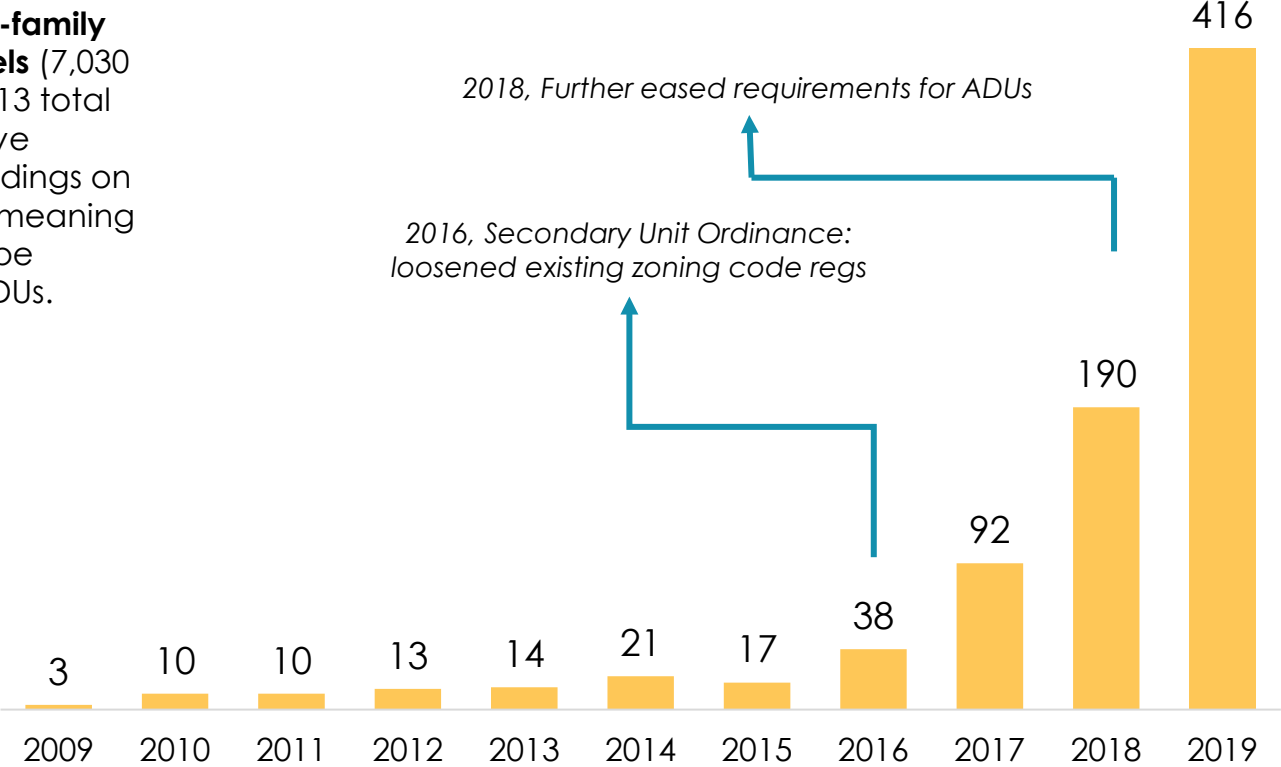
## Potential ADUs in Single Family Homes

Assuming single-family home parcels with multiple buildings on a lot have detached garages or already have an ADU.

### Parcels with Potential ADUs



### Second Unit/ADU Permits

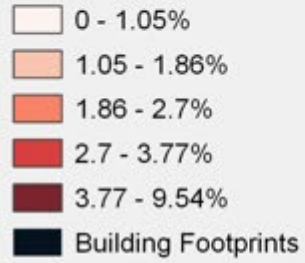




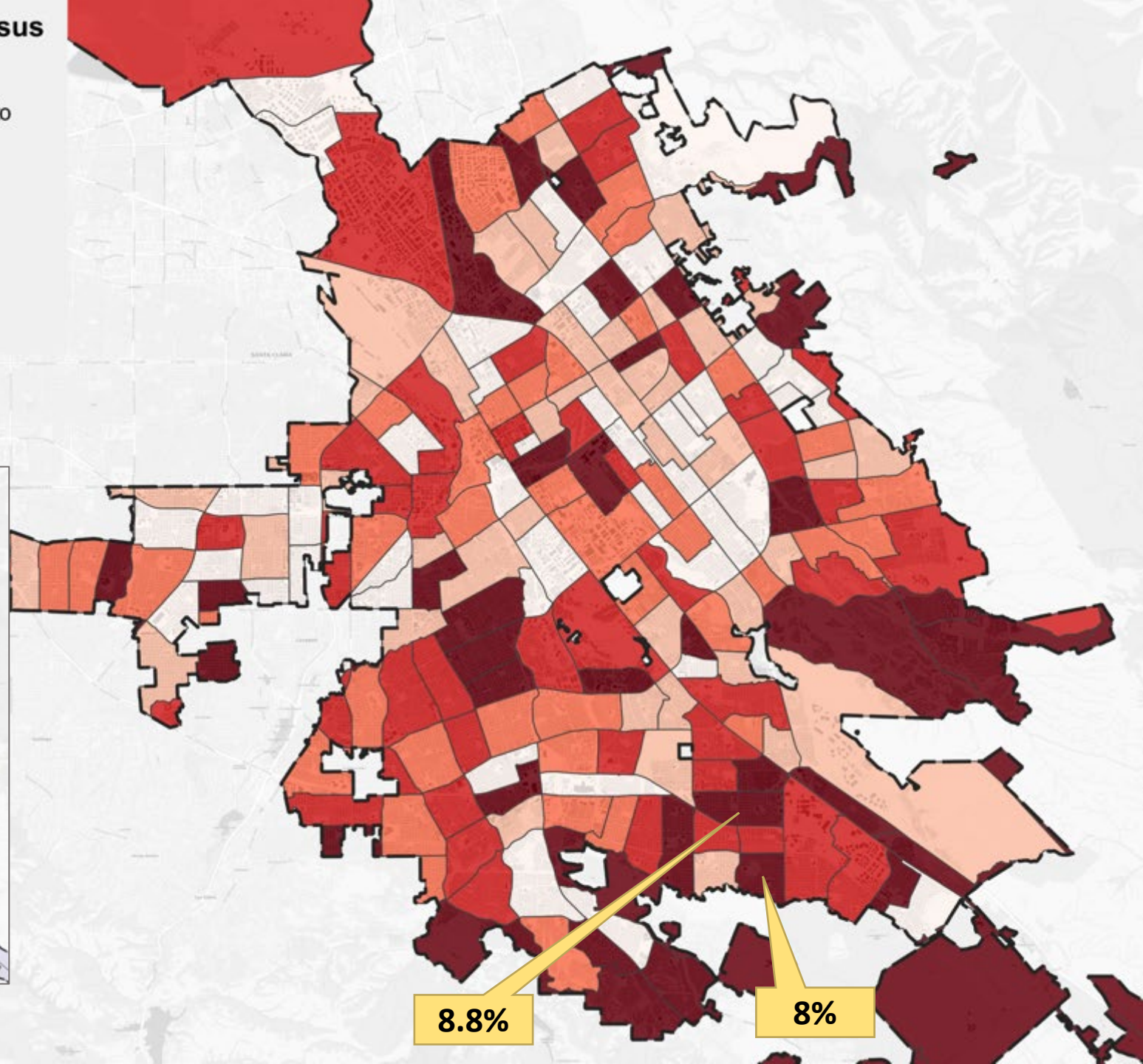
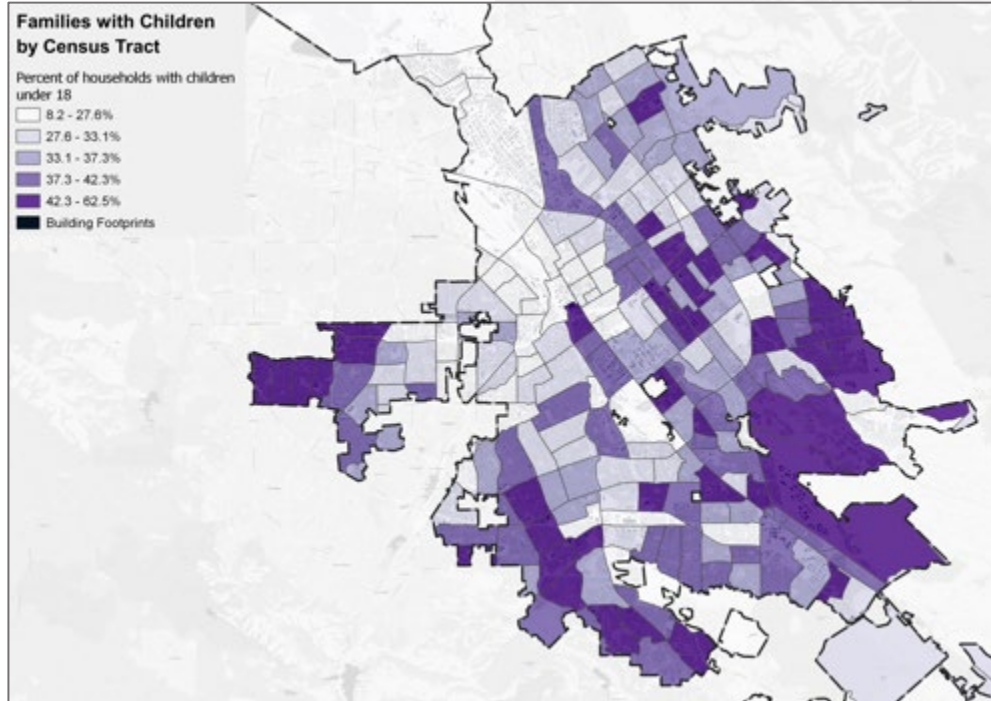
# New Home-owners

## New Homeowners by Census Tract

Percent of Households that Moved into Current Home in 2015 or Later



## For Comparison: Families with Children



8.8%

8%

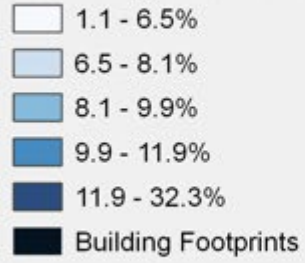


# Baby Boomers

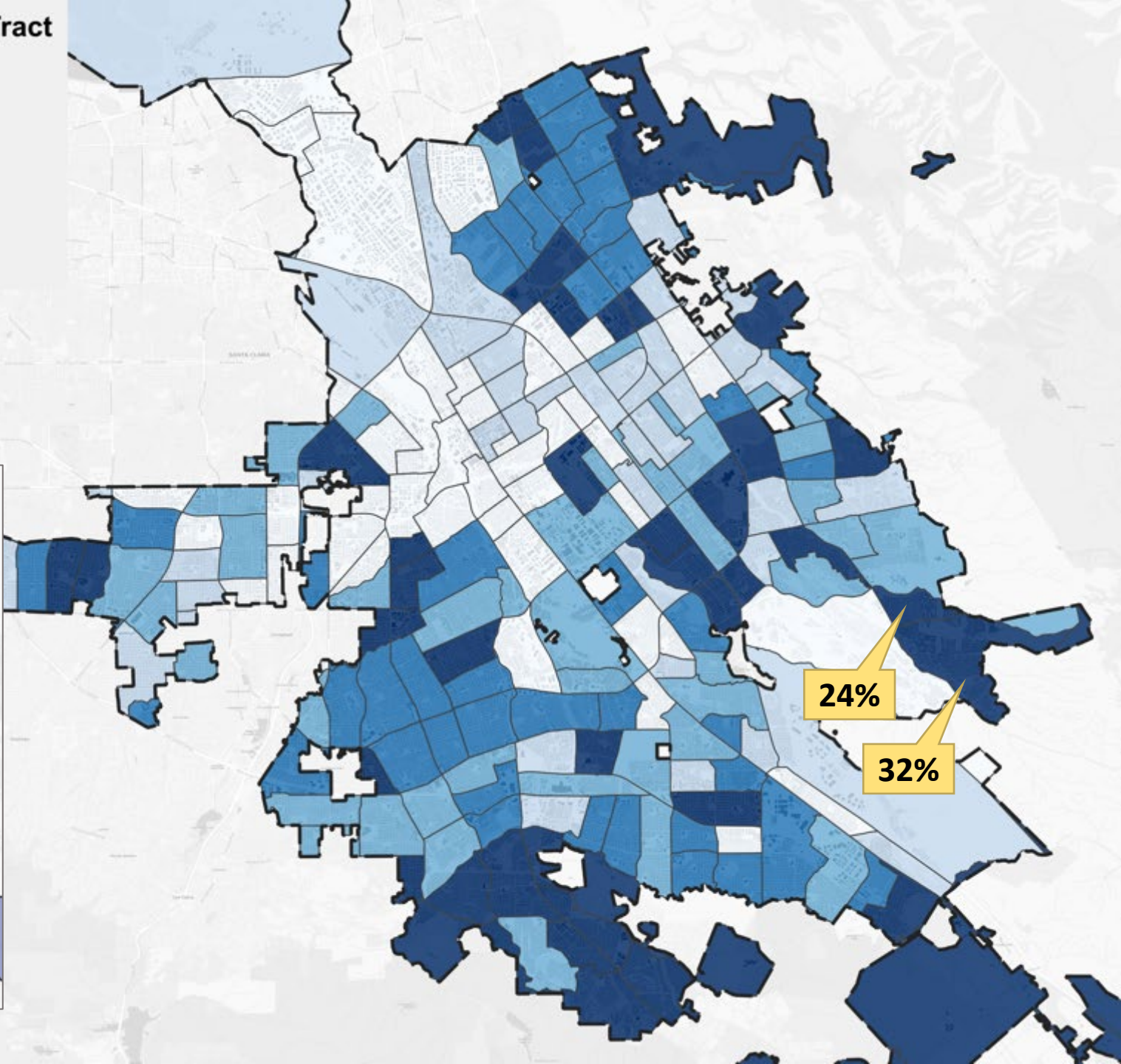
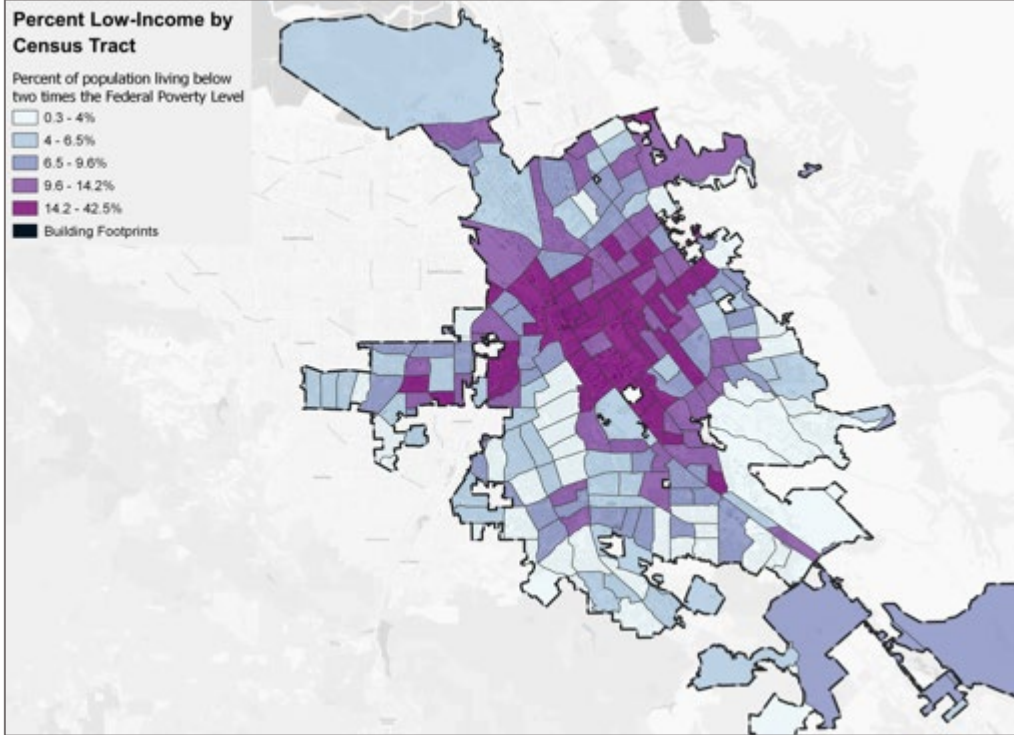
## Ages 65-79

### Baby Boomers by Census Tract

Percent Aged 65 to 79



### For Comparison: Low-income Distribution





# Millennials

## Ages 20-39

### Millennials by Census Tract

Percent Aged 20 to 39

7.5 - 20.5%

20.5 - 26.3%

26.3 - 30.2%

30.2 - 35.1%

35.1 - 72.1%

Building Footprints

72%

54%

### For Comparison: Low-income Distribution

#### Percent Low-Income by Census Tract

Percent of population living below two times the Federal Poverty Level

0.3 - 4%

4 - 6.5%

6.5 - 9.6%

9.6 - 14.2%

14.2 - 42.5%

Building Footprints



# Families with Children

## Households with Children under 18

### Families with Children by Census Tract

Percent of households with children under 18

8.2 - 27.6%

27.6 - 33.1%

33.1 - 37.3%

37.3 - 42.3%

42.3 - 62.5%

Building Footprints

### For Comparison: Low-income Distribution

#### Percent Low-Income by Census Tract

Percent of population living below two times the Federal Poverty Level

0.3 - 4%

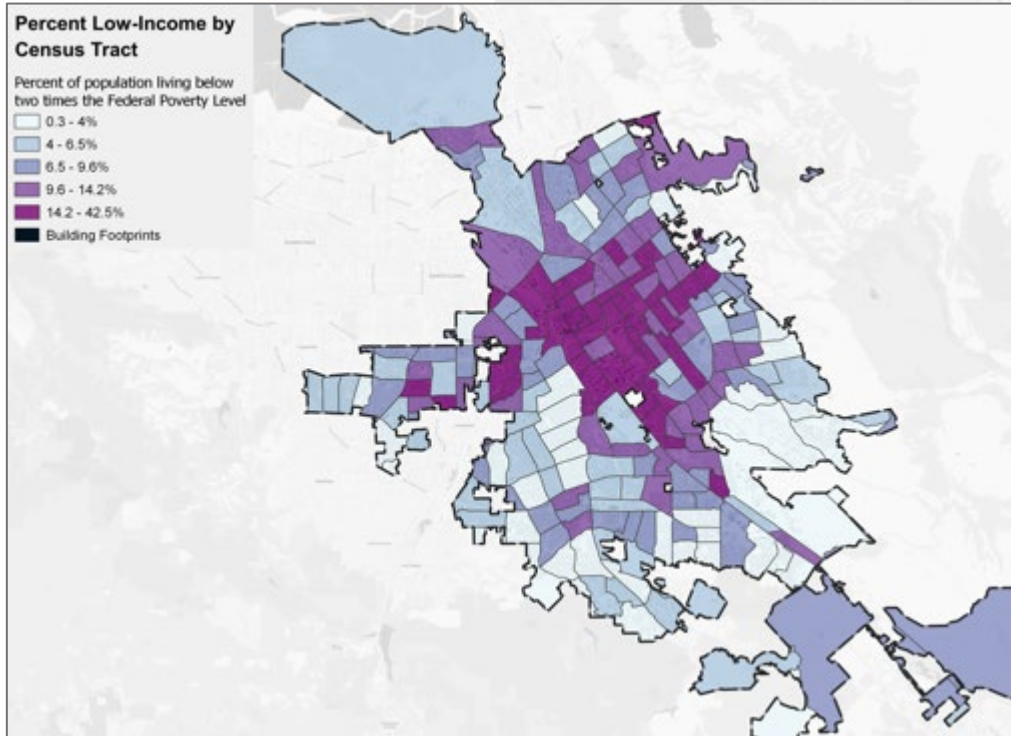
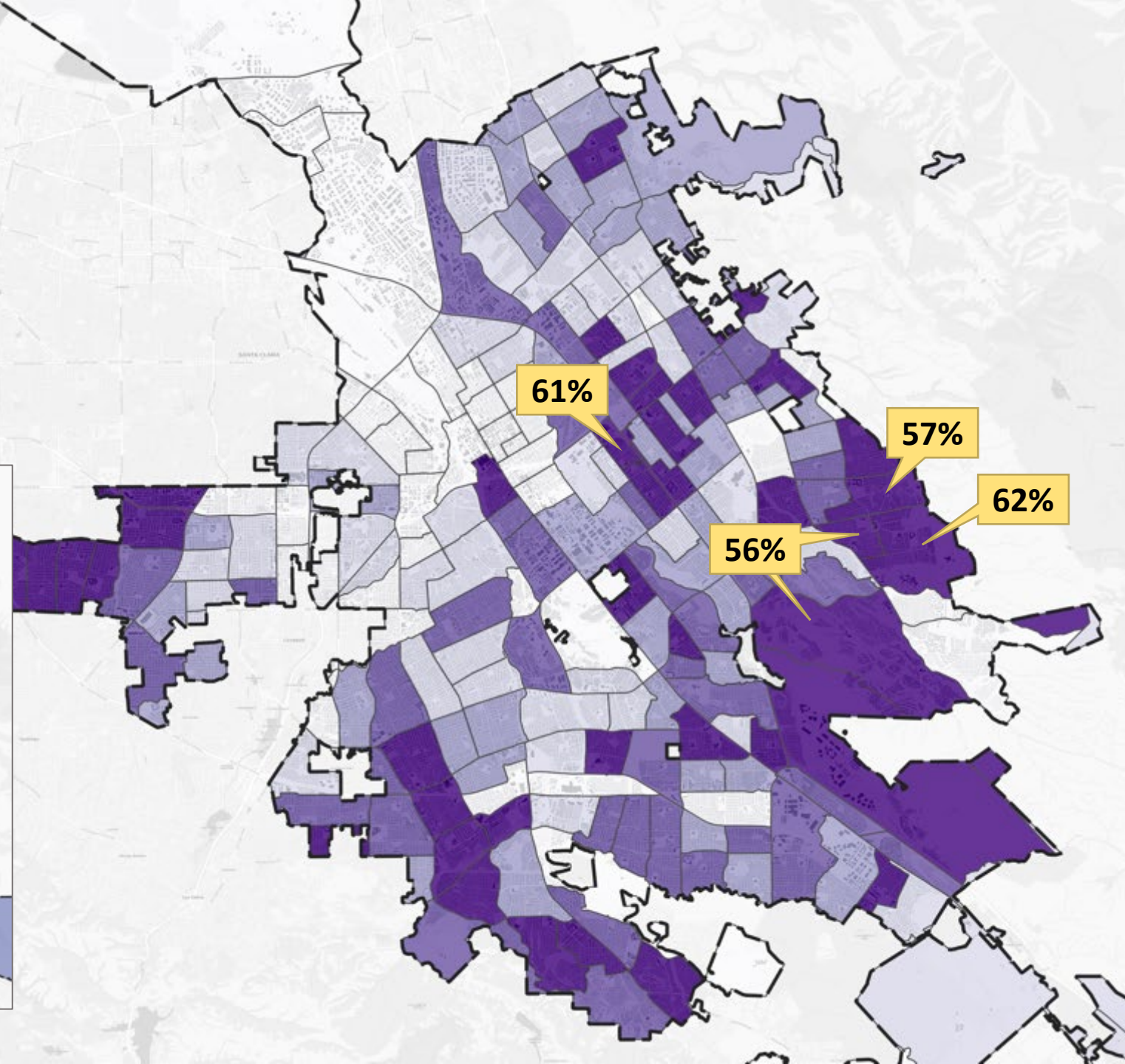
4 - 6.5%

6.5 - 9.6%

9.6 - 14.2%

14.2 - 42.5%

Building Footprints





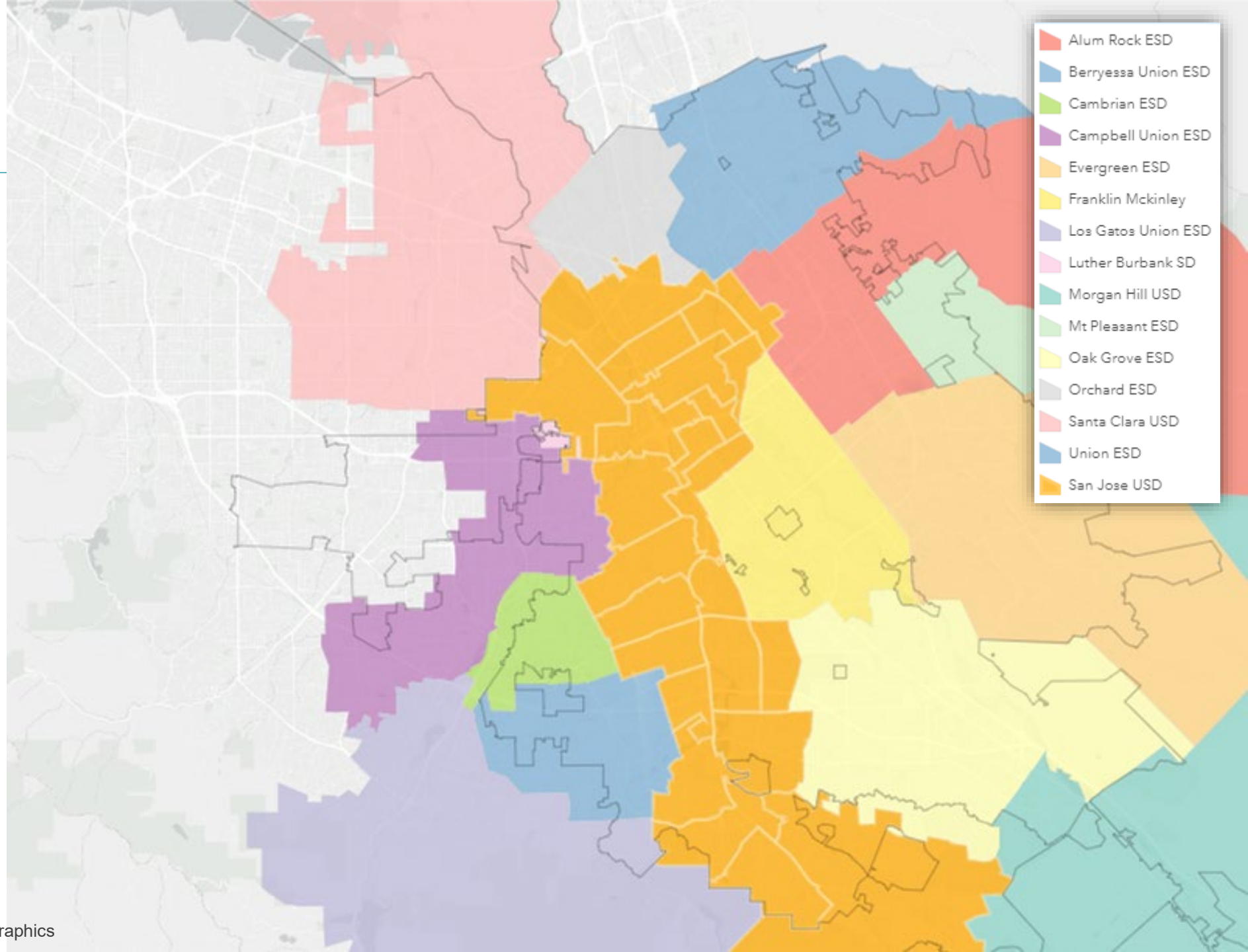
# School Service Areas

## Elementary School Districts

15 Elementary School Districts in San José Unified School District

Includes 24 Elementary Schools:

- Lowell
- Horace Mann
- Washington
- Gardner
- Galarza
- Grant
- Willow Glen
- Trace
- Anne Darling
- Bachrodt
- Booksin
- Schallenberger
- Empire Gardens
- Allen at Steinbeck
- Reed
- Canoas
- Simonds
- Los Alamitos
- Terrell
- Williams
- Carson
- Almaden
- Olinder



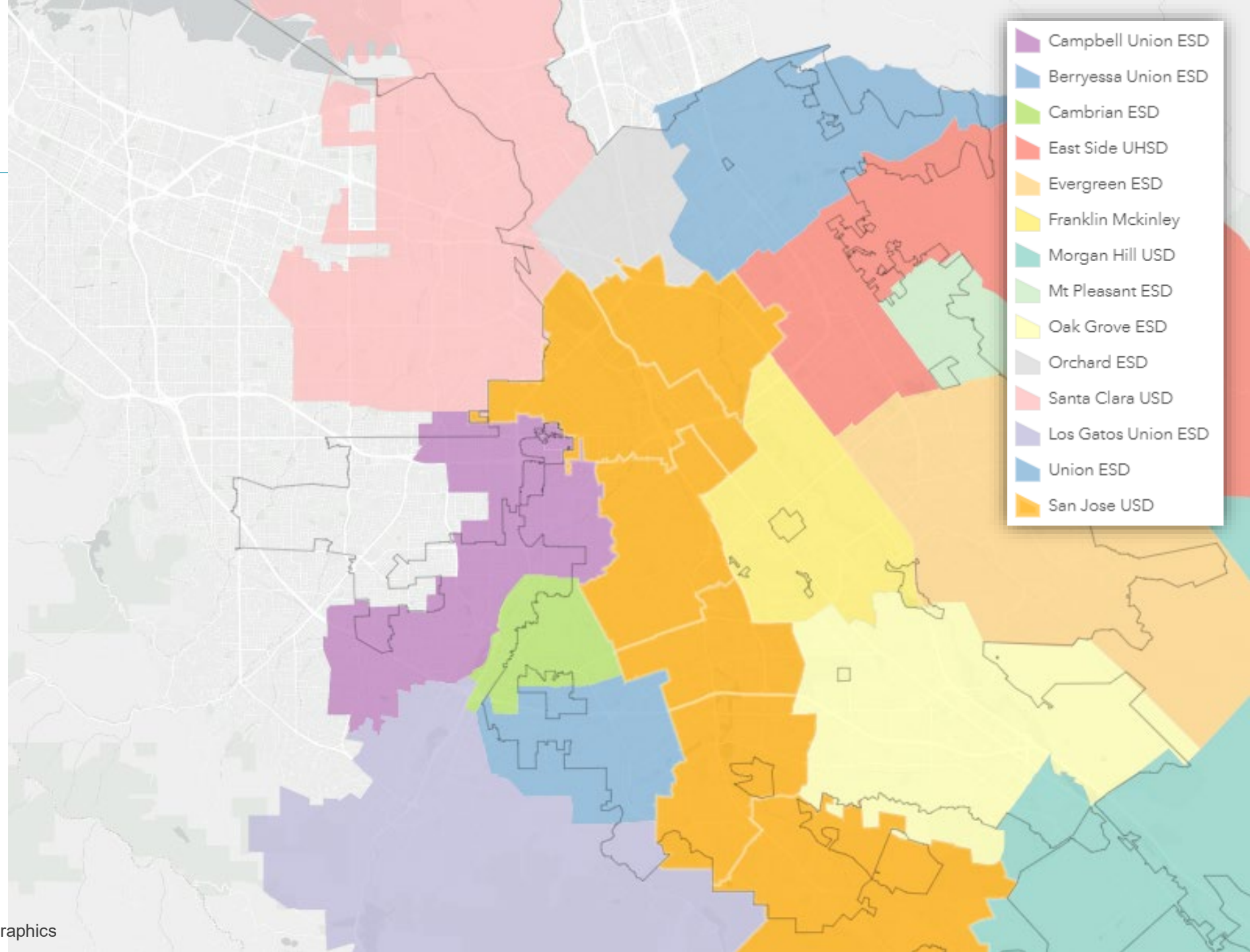
# School Service Areas

## Middle School Districts

14 Middle School Districts in San José Unified School District

Includes 6 Middle Schools:

- Muwekma Ohlone
- Hoover Middle
- Willow Glen Middle
- John Muir Middle
- Bret Harte Middle
- Castillero Middle





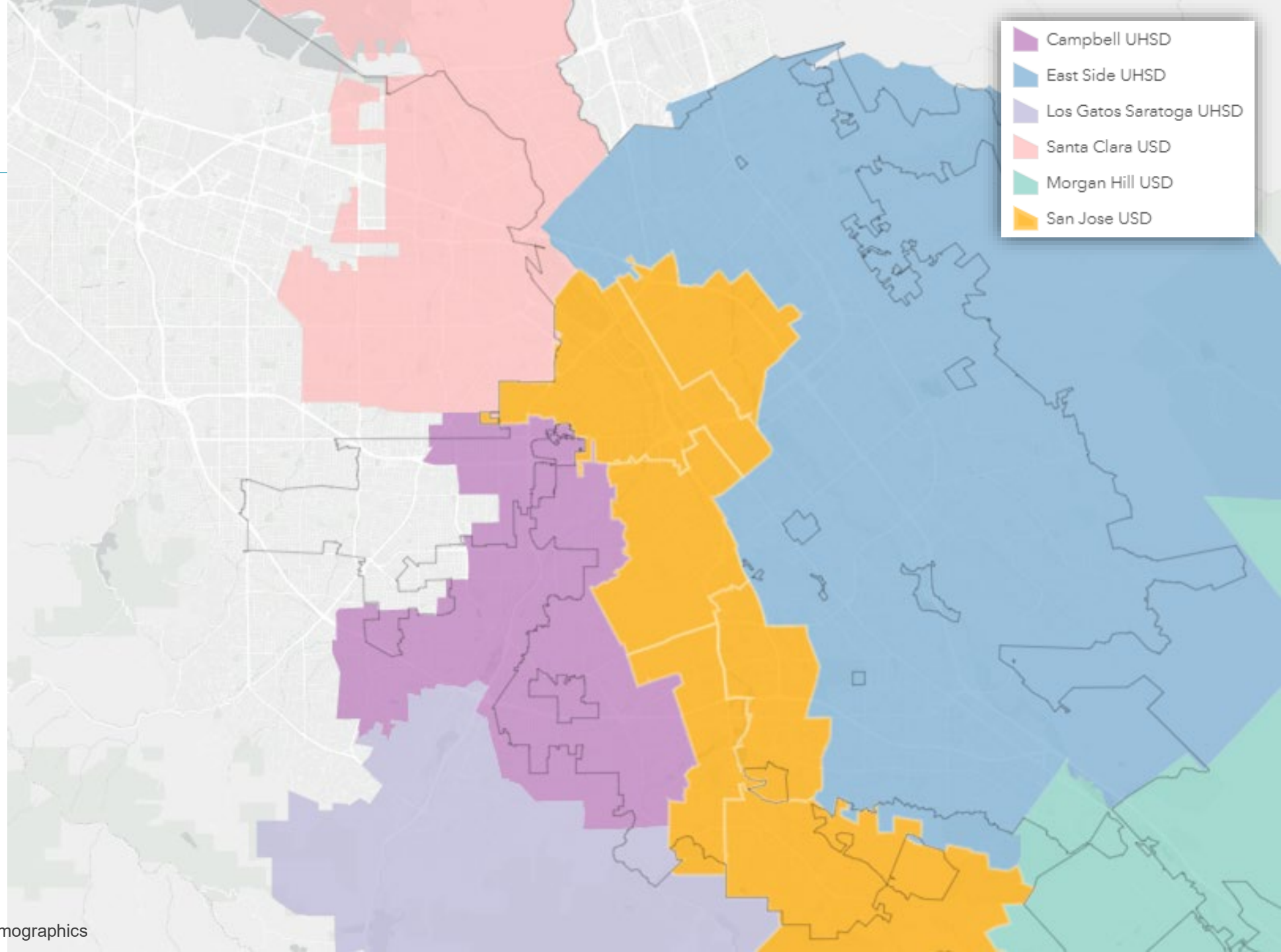
# School Service Areas

## High School Districts

6 High School Districts in San José Unified School District

Including 6 High Schools:

- Lincoln High
- San José High
- Willow Glen High
- Pioneer High
- Leland High
- Gunderson High



# Social Vulnerability Indicators

---

## List of Social Vulnerability Indicators

- Low-income households
- Race distribution
- Energy cost burden
- Asthma rate
- Age over 80
- People with disabilities
- Internet access
- Limited English households
- Spanish-speaking households
- Asian Pacific Islander language-speaking households



# Low-Income Distribution

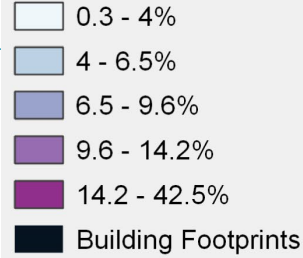
**Low-income** is defined as 200% of the federal poverty line,<sup>1</sup> or:

- **\$24,980** for an individual
- **\$51,500** for a family of four

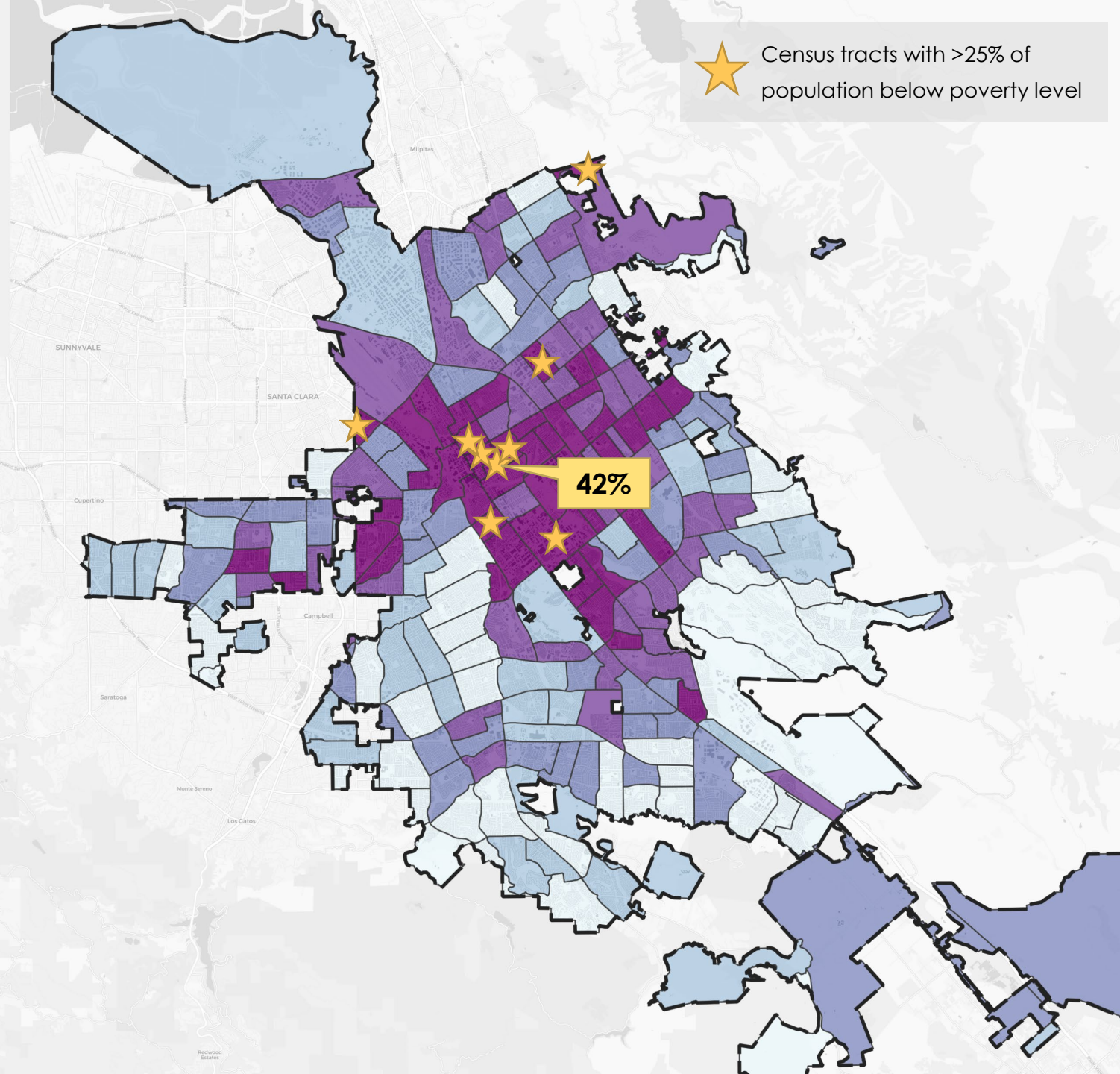
Area Median Income (AMI) is estimated at \$104,234.<sup>2</sup>

## Percent Low-Income by Census Tract

Percent of population living below two times the Federal Poverty Level



★ Census tracts with >25% of population below poverty level



### Number of Buildings by Typology

Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	54,270	48,587	42,834	32,839	178,530
Duplex	780	701	1,740	3,298	6,519
Low-Rise Multifamily	2,520	3,676	6,821	11,038	24,055
High-Rise Multifamily	11	42	145	81	279

<sup>1</sup>Source: U.S. Department of Health and Human Services, 2019 guidelines: <https://aspe.hhs.gov/2019-poverty-guidelines>

<sup>2</sup>Source: U.S. Census Bureau, San José Quick Facts, estimate for 2018: <https://www.census.gov/quickfacts/fact/table/sanJosecitycalifornia,US/PST045219>

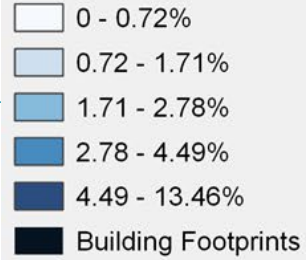


# Race Distribution

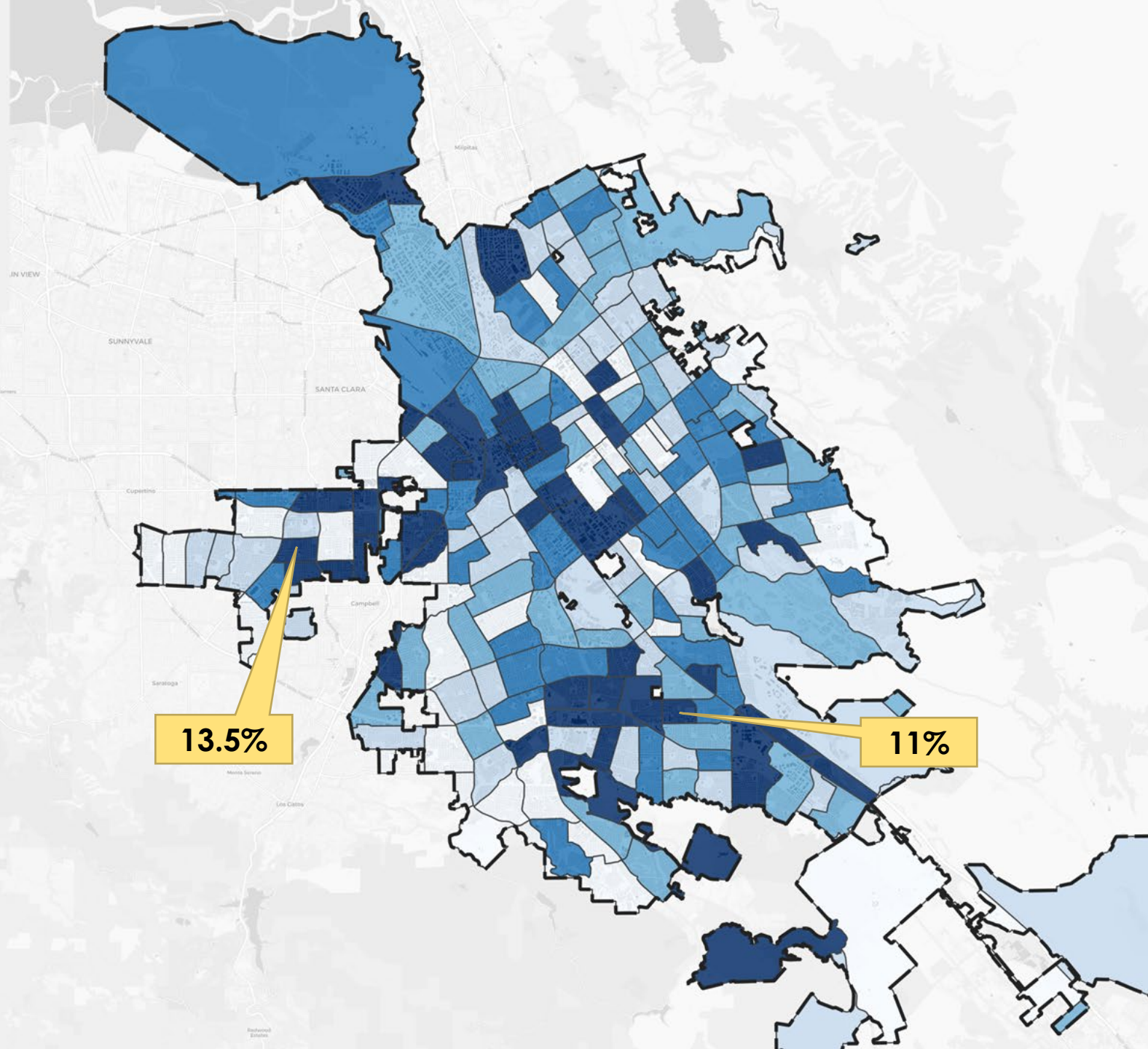
## Black or African American Alone (not Hispanic or Latino)

### Race by Census Tract

Black or African American Alone (Not Hispanic or Latino)



Number of Buildings by Typology					
Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	35,508	47,641	54,609	40,772	178,530
Duplex	1,368	1,309	1,314	2,528	6,519
Low-Rise Multifamily	4,109	5,636	4,859	9,451	24,055
High-Rise Multifamily	36	9	43	191	279



13.5%

11%



# Race Distribution

## Hispanic or Latino

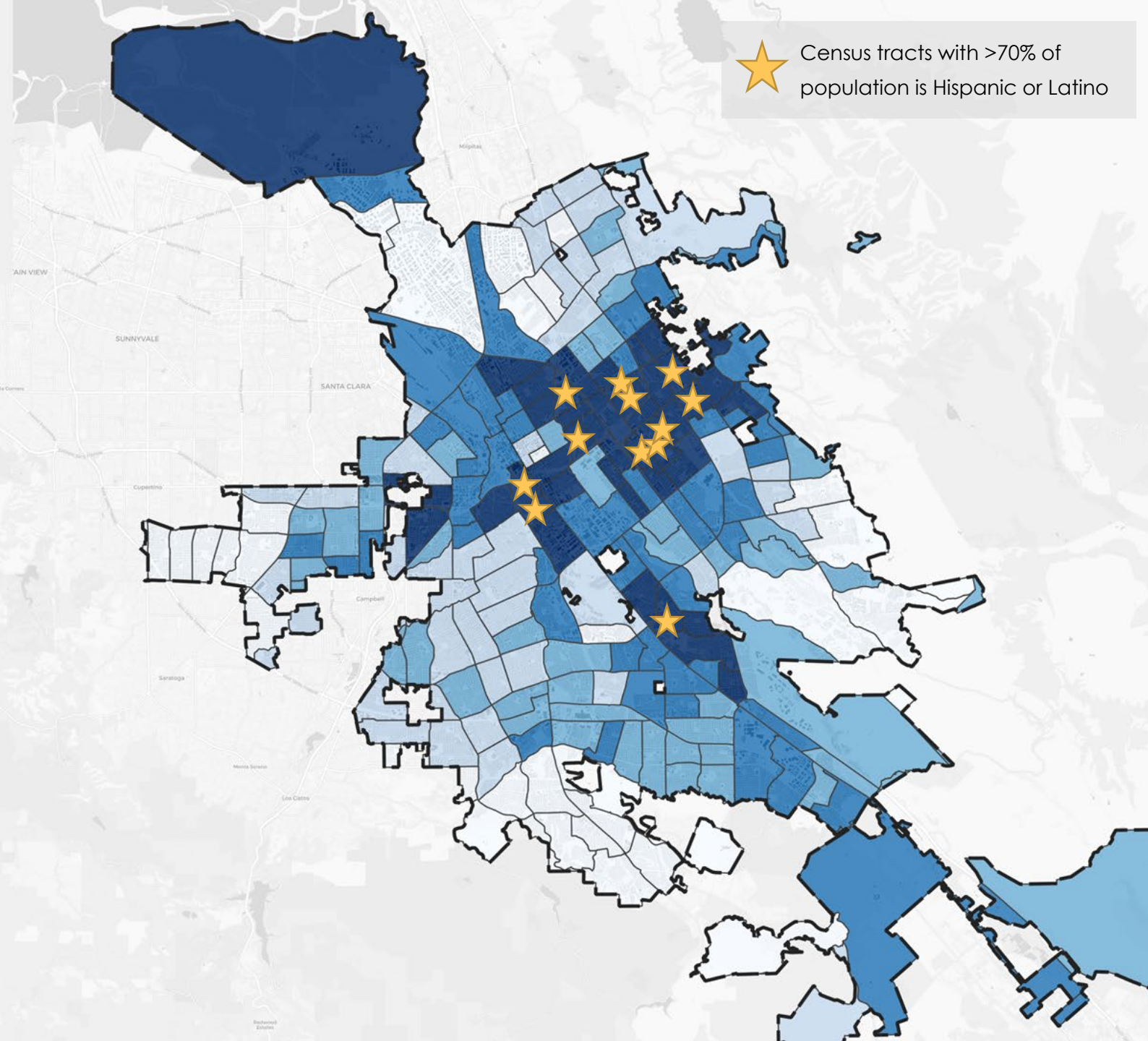
### Race by Census Tract

Hispanic or Latino

- 1 - 11.5%
- 11.5 - 20.1%
- 20.1 - 30.3%
- 30.3 - 45.9%
- 45.9 - 81.5%
- Building Footprints

★ Census tracts with >70% of population is Hispanic or Latino

Number of Buildings by Typology					
Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	27,560	53,091	51,086	46,793	178,530
Duplex	322	863	1,514	3,820	6,519
Low-Rise Multifamily	2,496	4,254	7,351	9,954	24,055
High-Rise Multifamily	35	9	167	68	279





# Race Distribution

## Asian Alone (not Hispanic or Latino)

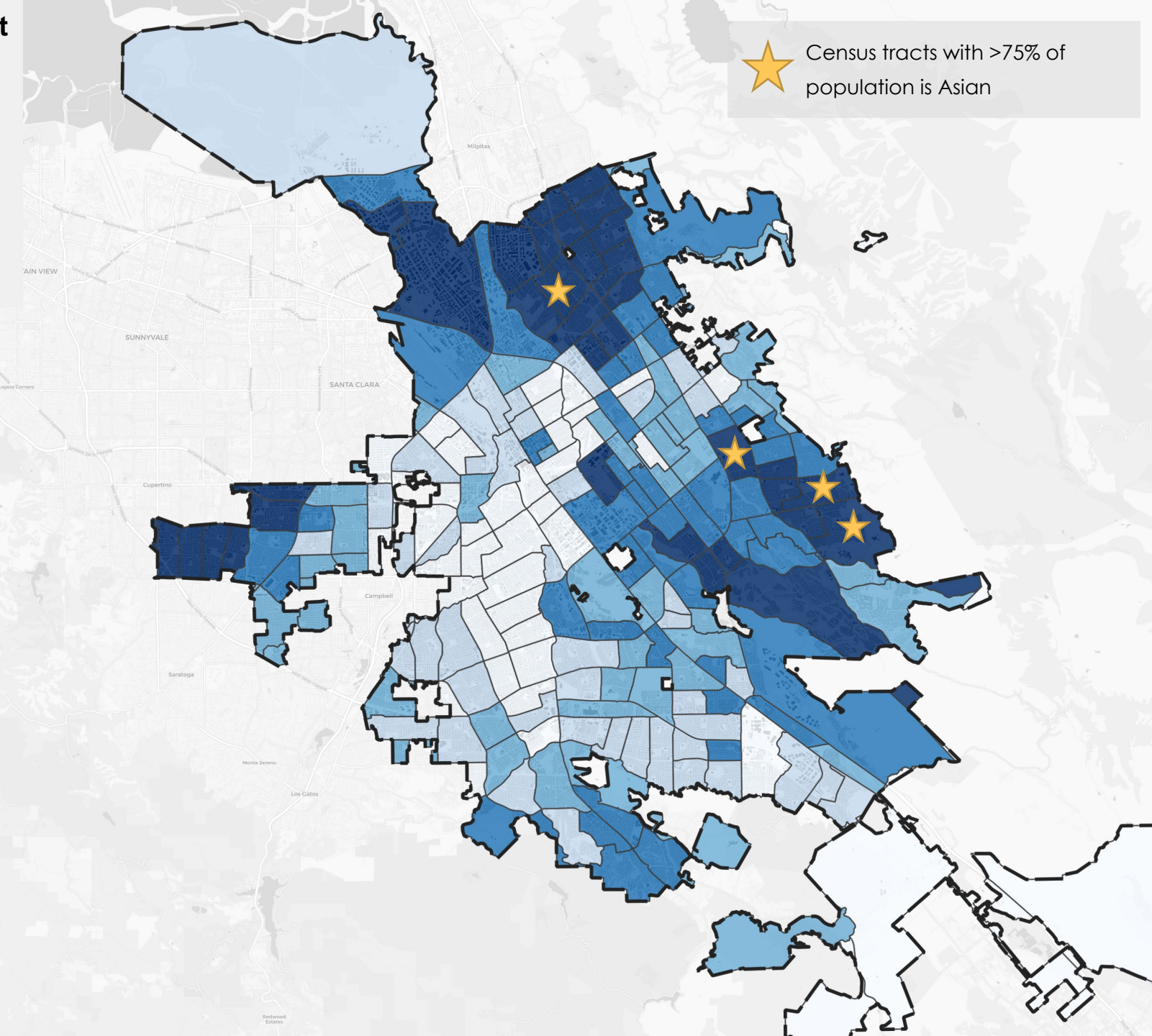
### Race by Census Tract

Asian Alone  
(Not Hispanic or Latino)

- 1.7 - 16.3%
- 16.3 - 22.2%
- 22.2 - 34.9%
- 34.9 - 56.6%
- 56.6 - 79.6%
- Building Footprints

★ Census tracts with >75% of population is Asian

Number of Buildings by Typology					
Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	52,661	43,735	34,958	47,176	178,530
Duplex	3,279	2,087	757	396	6,519
Low-Rise Multifamily	5,059	5,586	7,516	5,894	24,055
High-Rise Multifamily	38	82	120	39	279



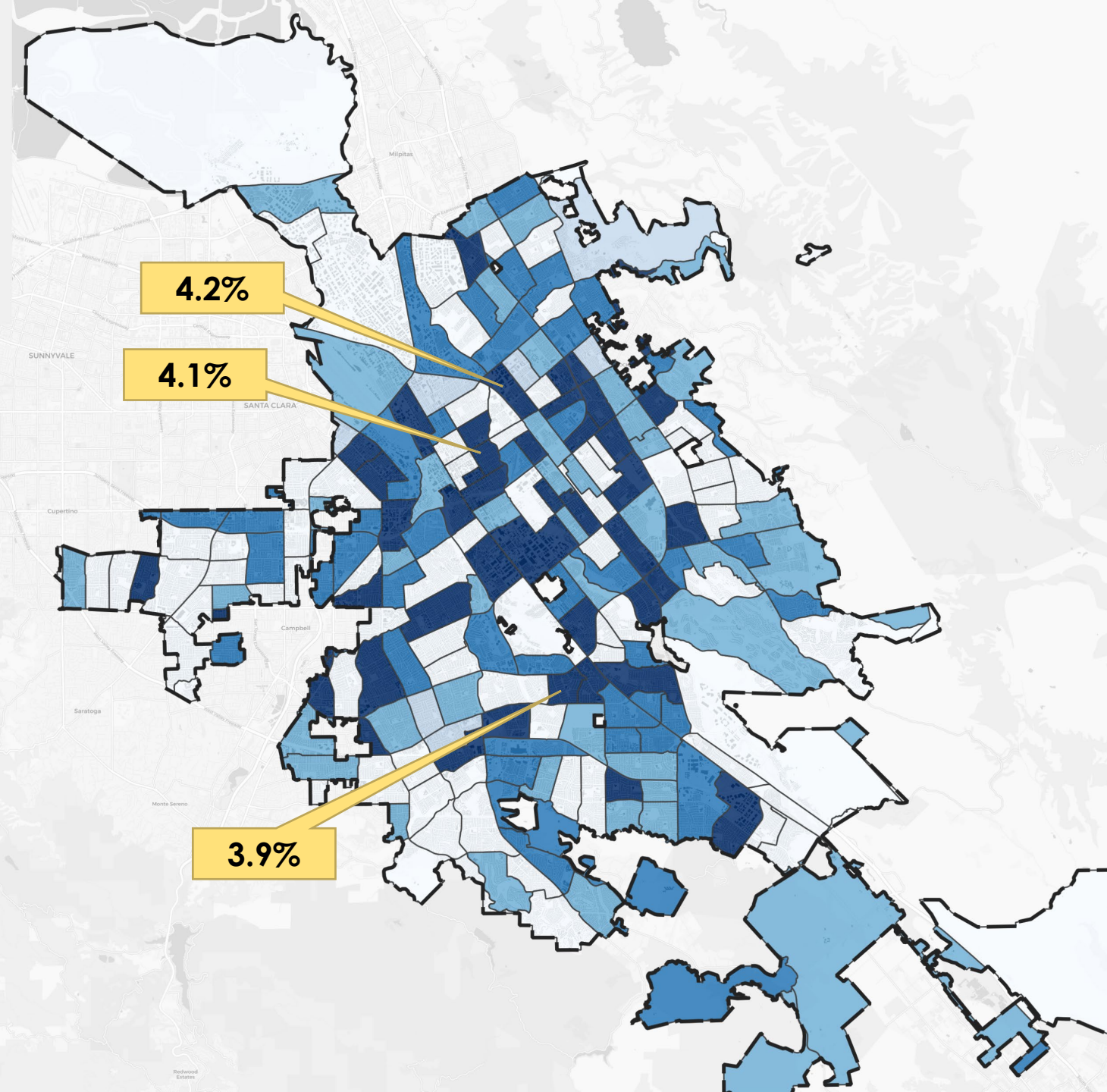
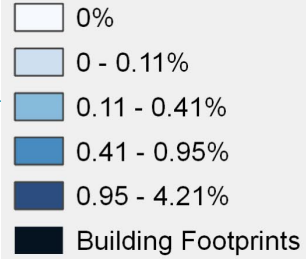


# Race Distribution

## American Indian or Alaskan Native Alone (not Hispanic or Latino)

### Race by Census Tract

American Indian or Alaskan Native Alone (Not Hispanic or Latino)



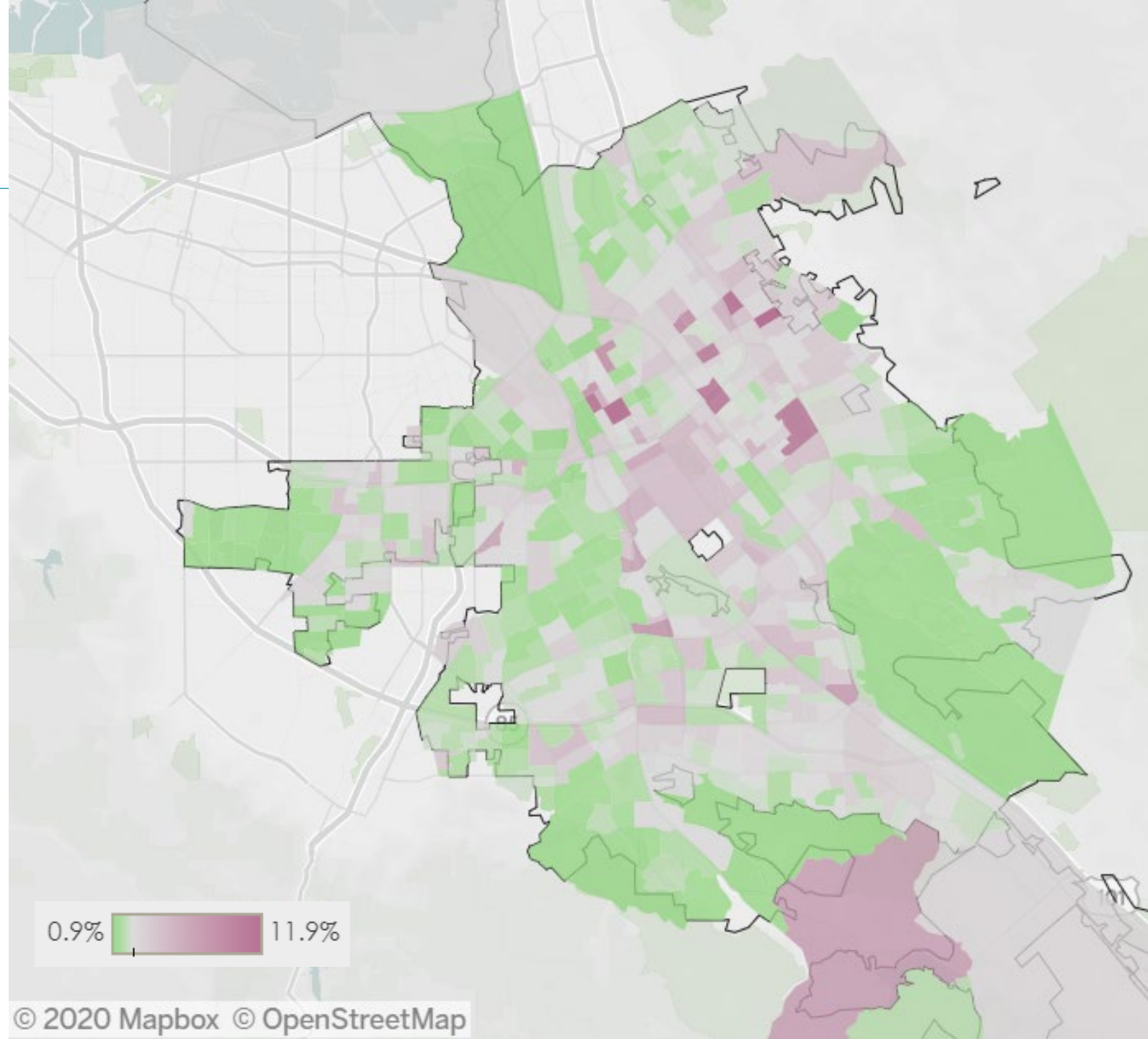
### Number of Buildings by Typology

Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	67,684	18,469	48,079	44,298	178,530
Duplex	1,909	603	1,654	2,353	6,519
Low-Rise Multifamily	6,905	2,008	7,489	7,653	24,055
High-Rise Multifamily	58	90	78	53	279

# Energy Cost Burden

Percentage of households by Census tract with an energy cost burden (electricity + gas) over 5% of household income

- Census tracts range from 0 to 540 energy burdened households
- Average U.S. energy burden: 3.23%
- Average energy burden in San José: 2.35%



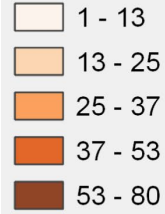


# Emergency Room Visits for Asthma

Age adjusted rate of emergency department visits for asthma by census tract **per 10,000 people**

## Age-Adjusted Rate of Emergency Department Visits for Asthma by Census Tract per 10,000 people

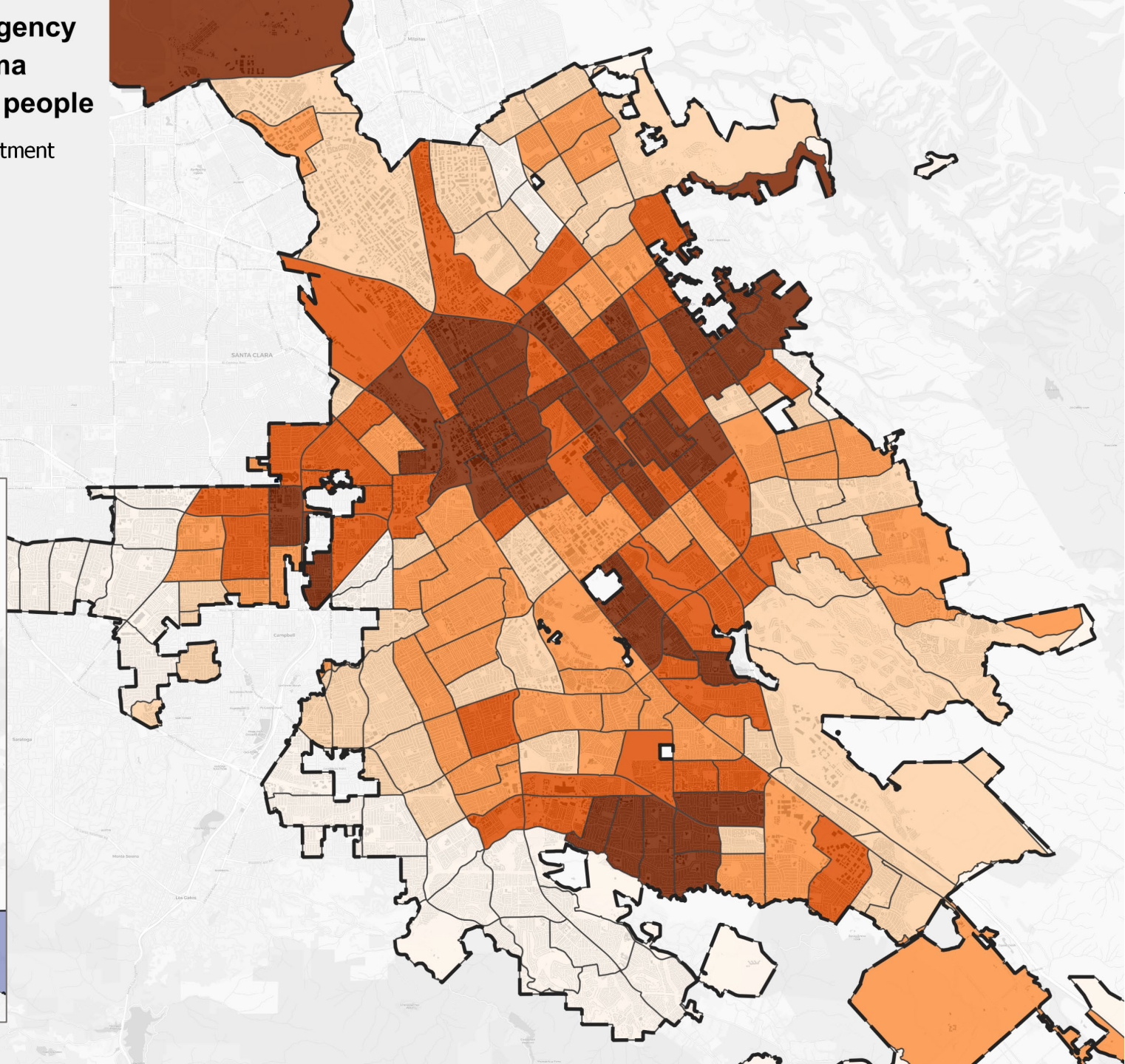
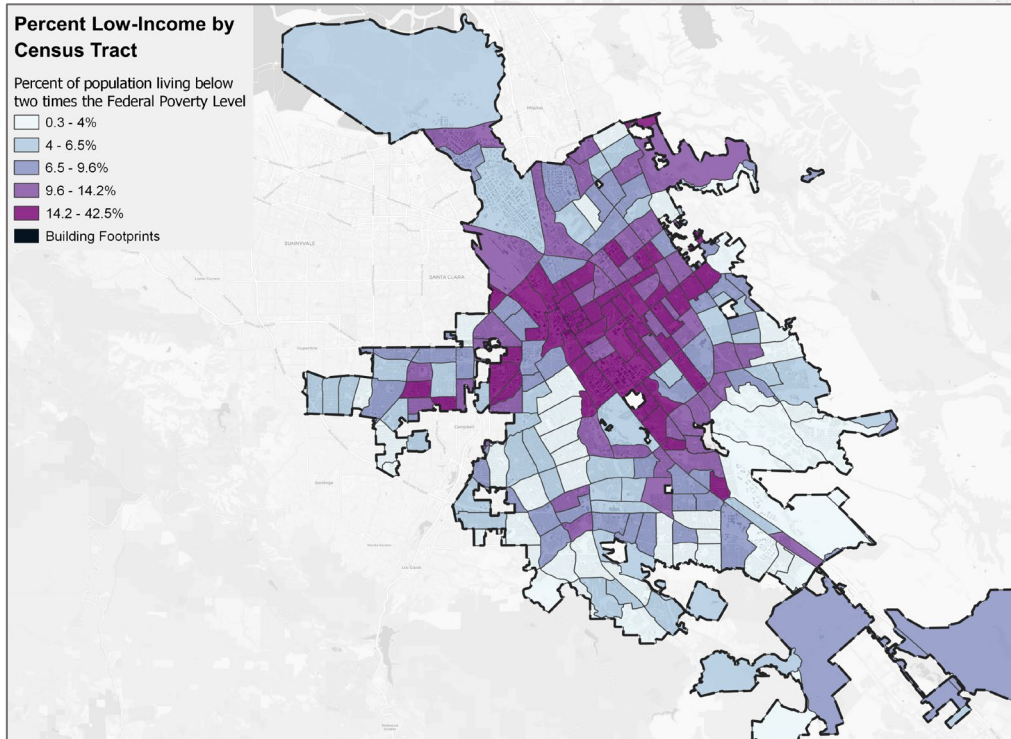
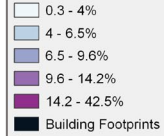
Age-Adjusted Rate of Emergency Department Visits for Asthma by Census Tract per 10,000 people (CalEnviroScreen)



## For Comparison: Low-income Distribution

### Percent Low-Income by Census Tract

Percent of population living below two times the Federal Poverty Level

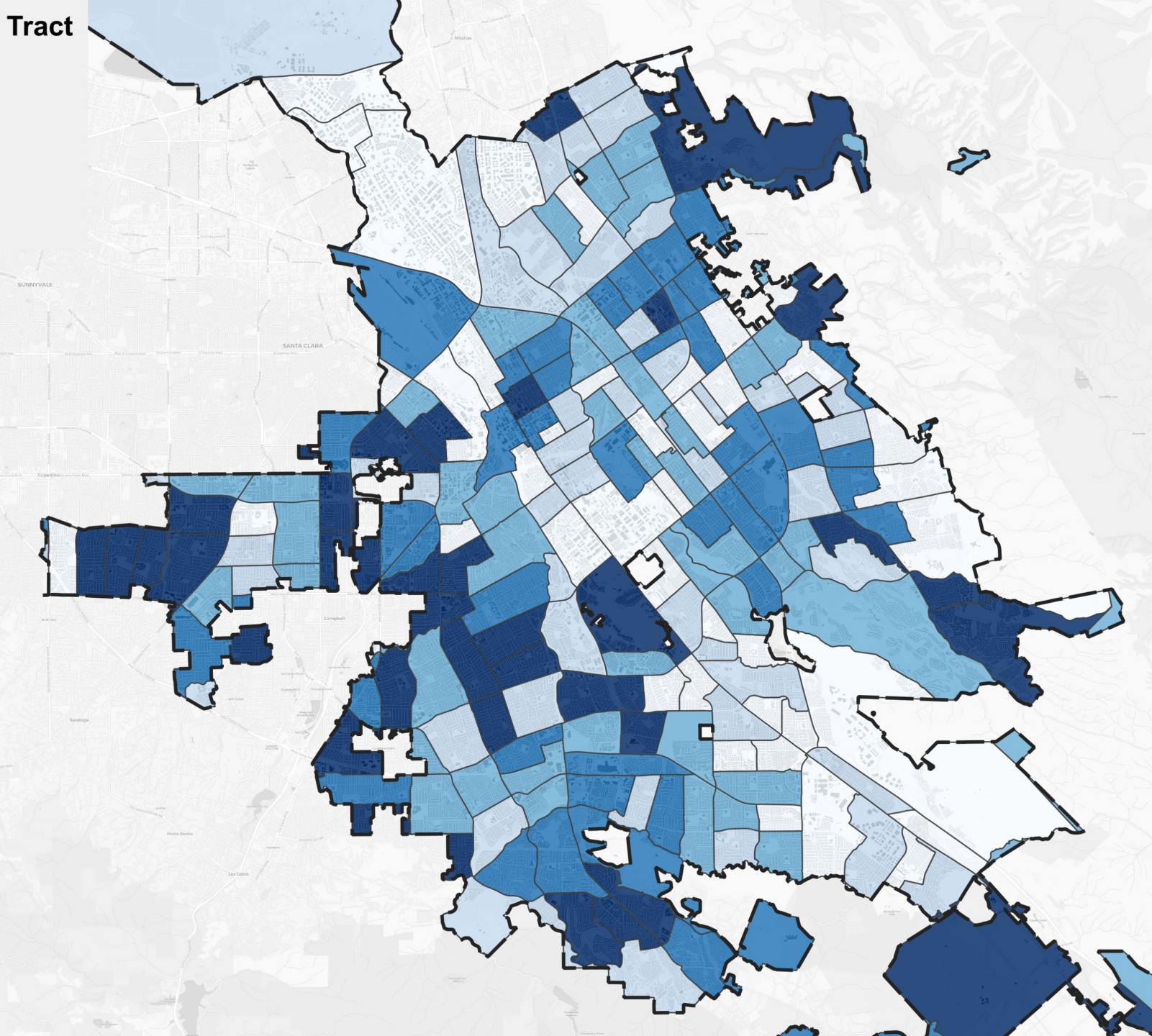
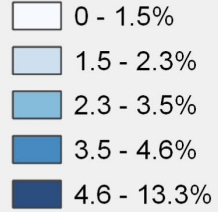




# People over the Age of 80

## Age over 80 by Census Tract

Percent Aged 80+



Number of Buildings by Typology					
Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	35,864	50,637	54,543	37,486	178,530
Duplex	1,855	1,544	2,178	942	6,519
Low-Rise Multifamily	7,725	7,618	5,264	3,448	24,055
High-Rise Multifamily	154	19	86	20	279

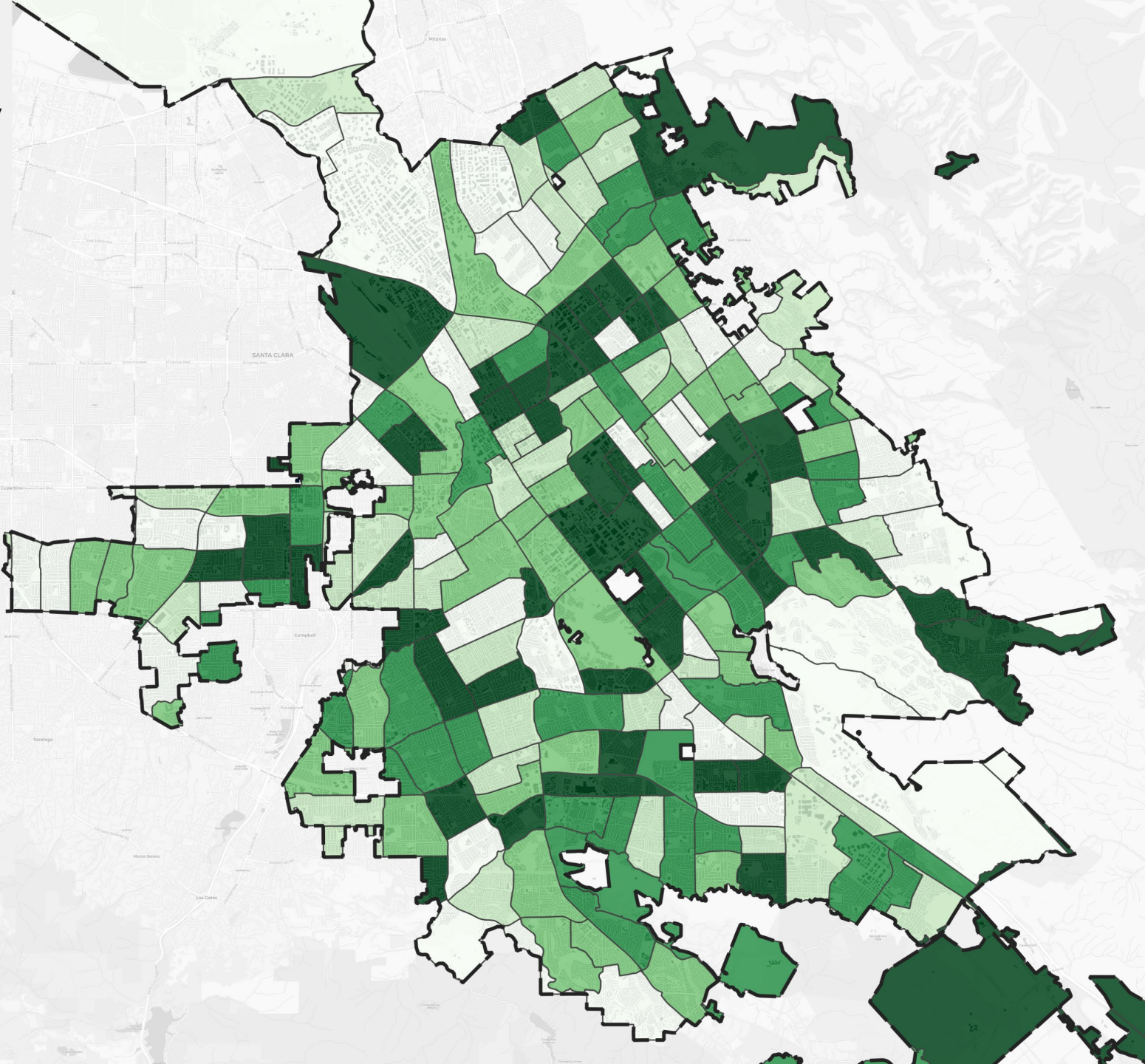
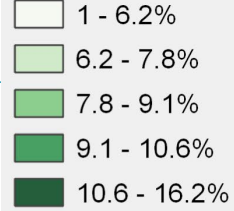
Source: US Census 2013-2017 ACS 5-Yr Estimates



# People with Disabilities

## Percent with Disabilities by Census Tract

Percent of population with a disability



### Number of Buildings by Typology

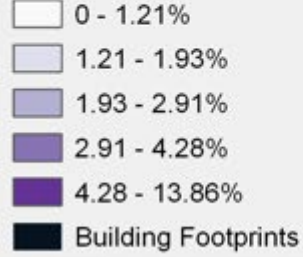
Residential Typology	0-25th percentile	26th-50th percentile	51st-75th percentile	76th-100th percentile	Total Buildings
Single-Family	38,555	39,097	58,120	42,758	178,530
Duplex	840	1,732	1,954	1,993	6,519
Low-Rise Multifamily	3,899	5,211	6,223	8,722	24,055
High-Rise Multifamily	37	125	22	95	279



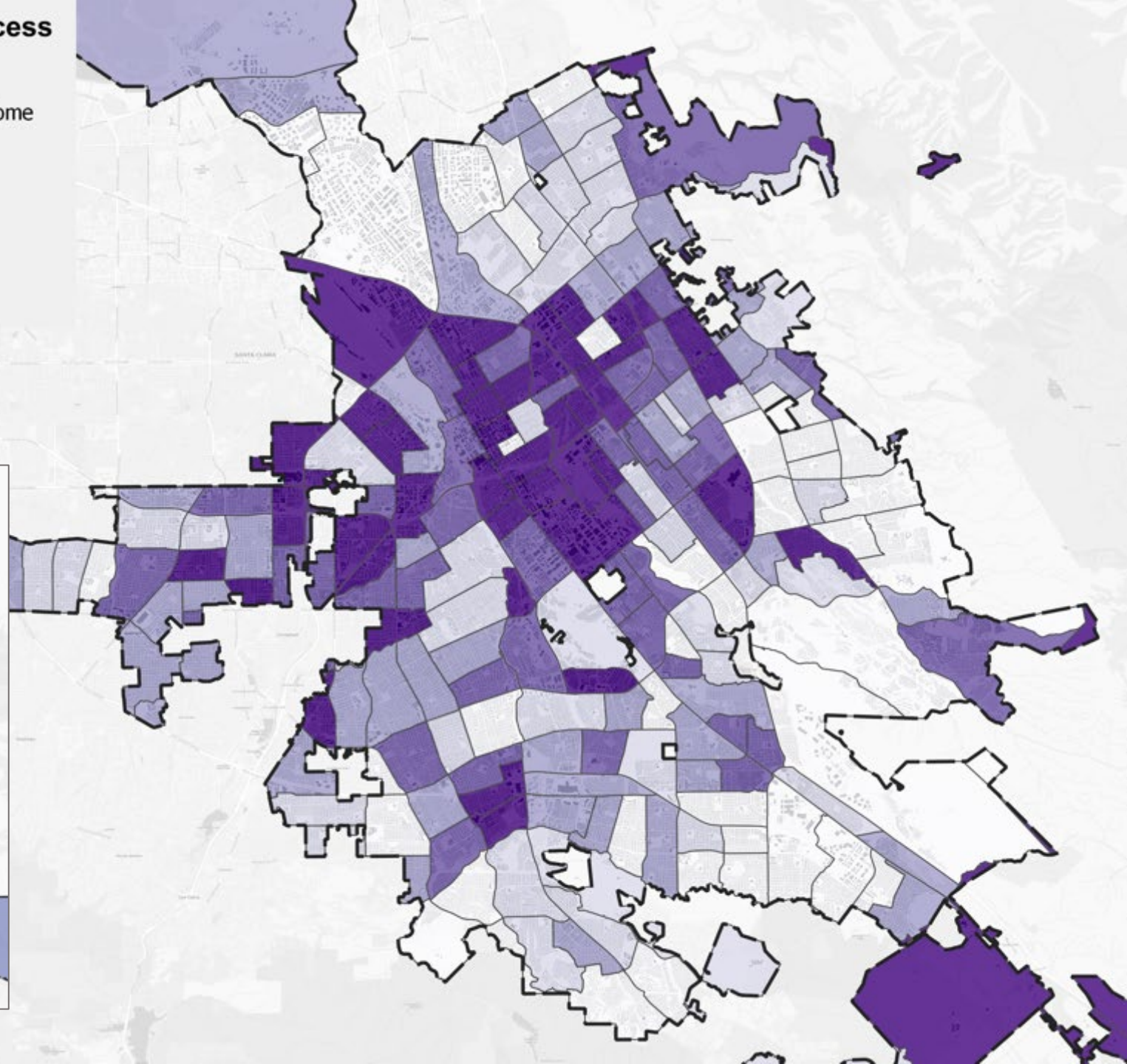
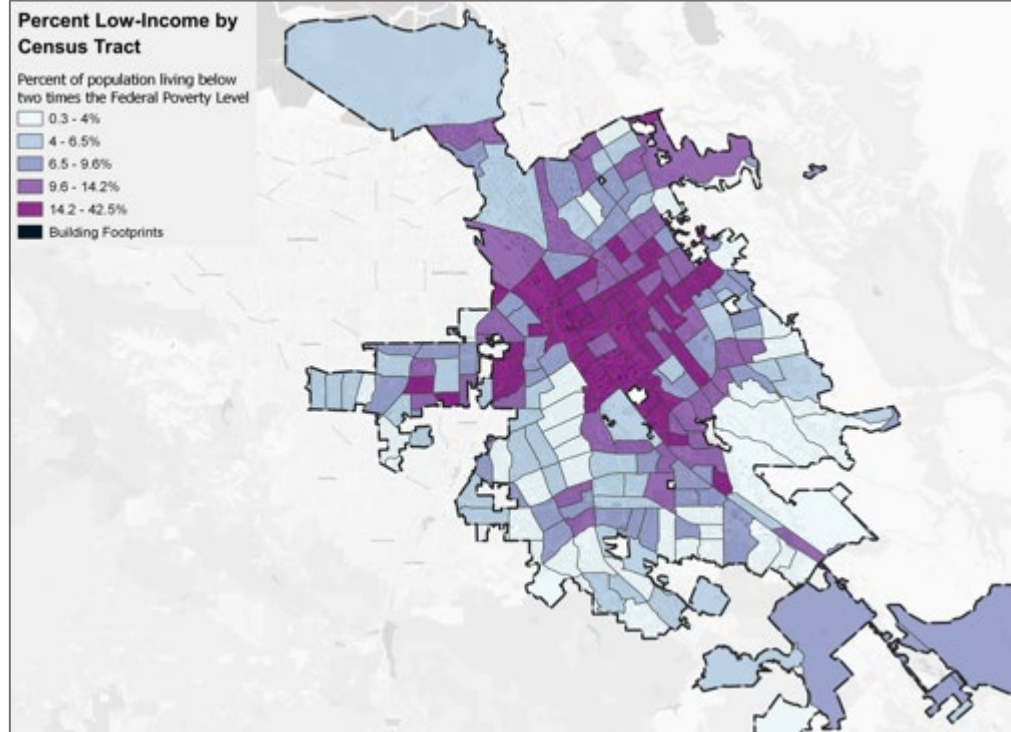
# Internet Access

## People without Internet Access by Census Tract

People without Access to Internet at Home



## For Comparison: Low-income Distribution





# Limited English Households

## Limited English Speaking Households by Census Tract

Percent of limited English speaking households

0 - 5.3%

5.3 - 8.7%

8.7 - 12.6%

12.6 - 18.9%

18.9 - 50.6%

Building Footprints

★ Census tracts with >35% of households speak limited English

## For Comparison: Low-income Distribution

### Percent Low-Income by Census Tract

Percent of population living below two times the Federal Poverty Level

0.3 - 4%

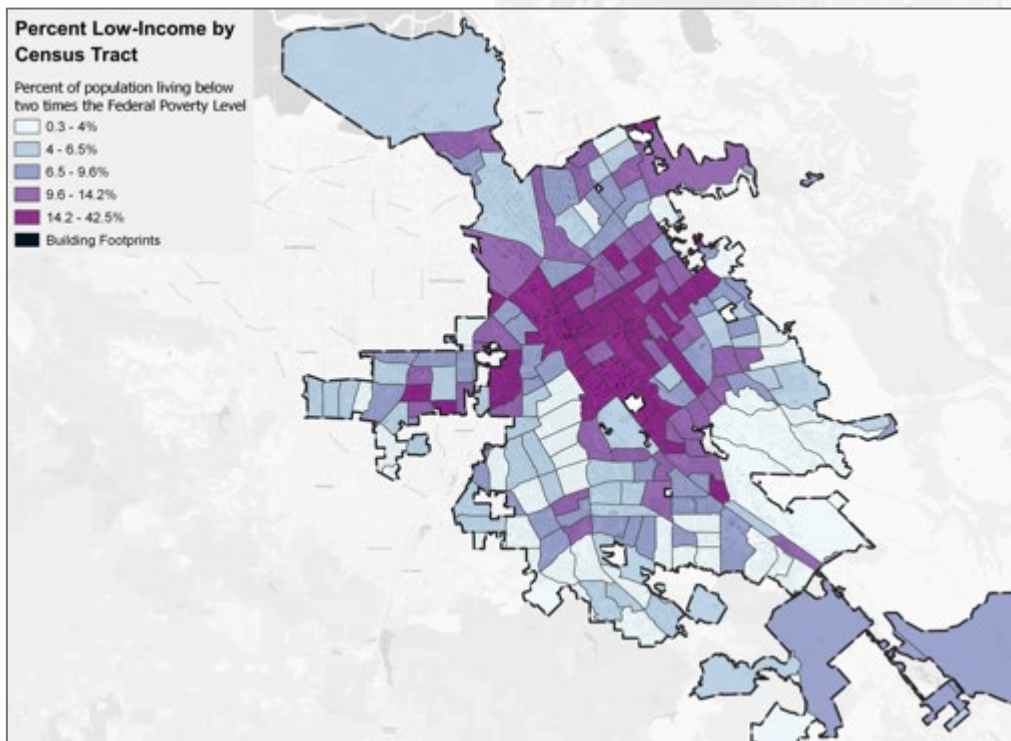
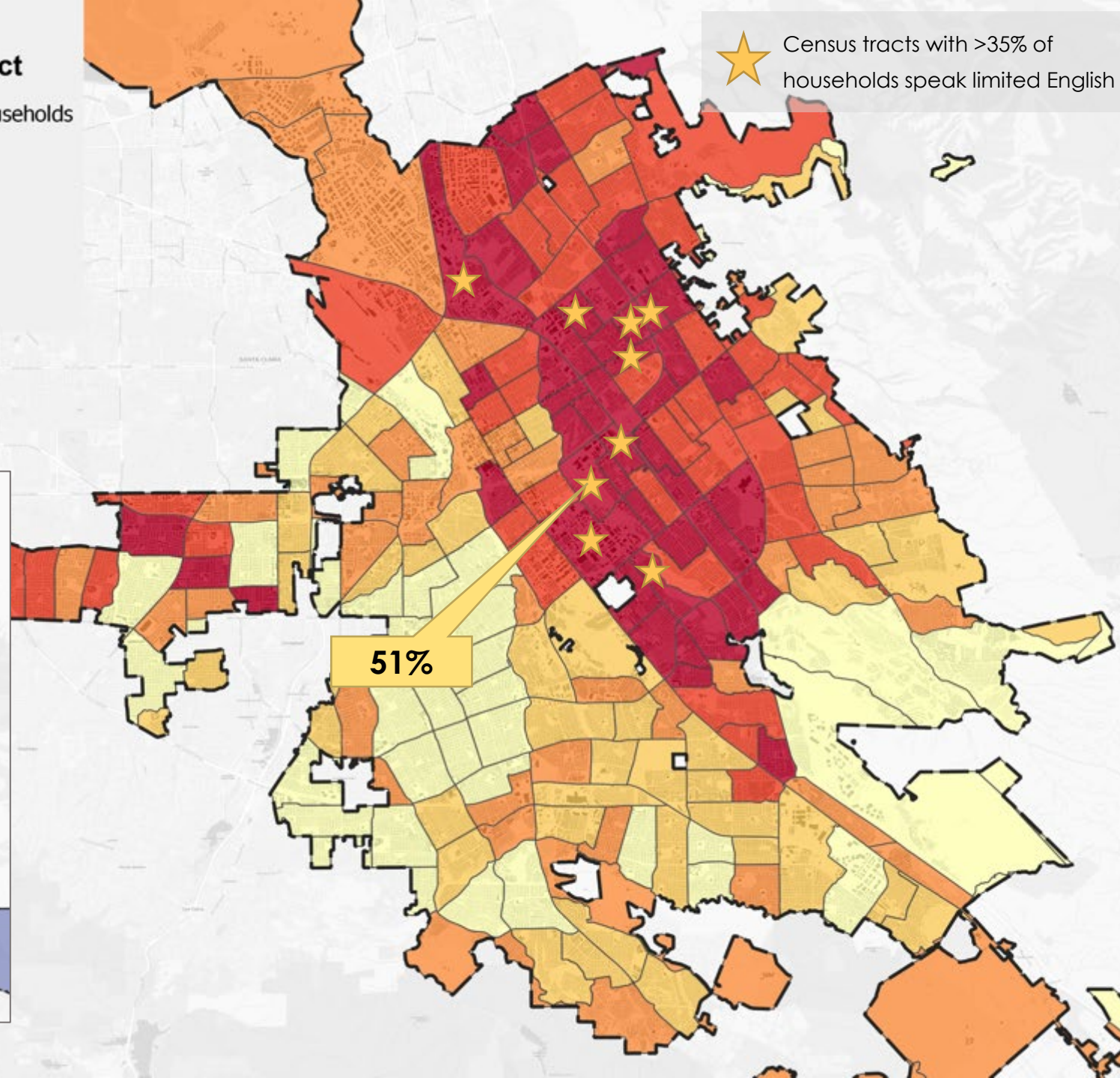
4 - 6.5%

6.5 - 9.6%

9.6 - 14.2%

14.2 - 42.5%

Building Footprints





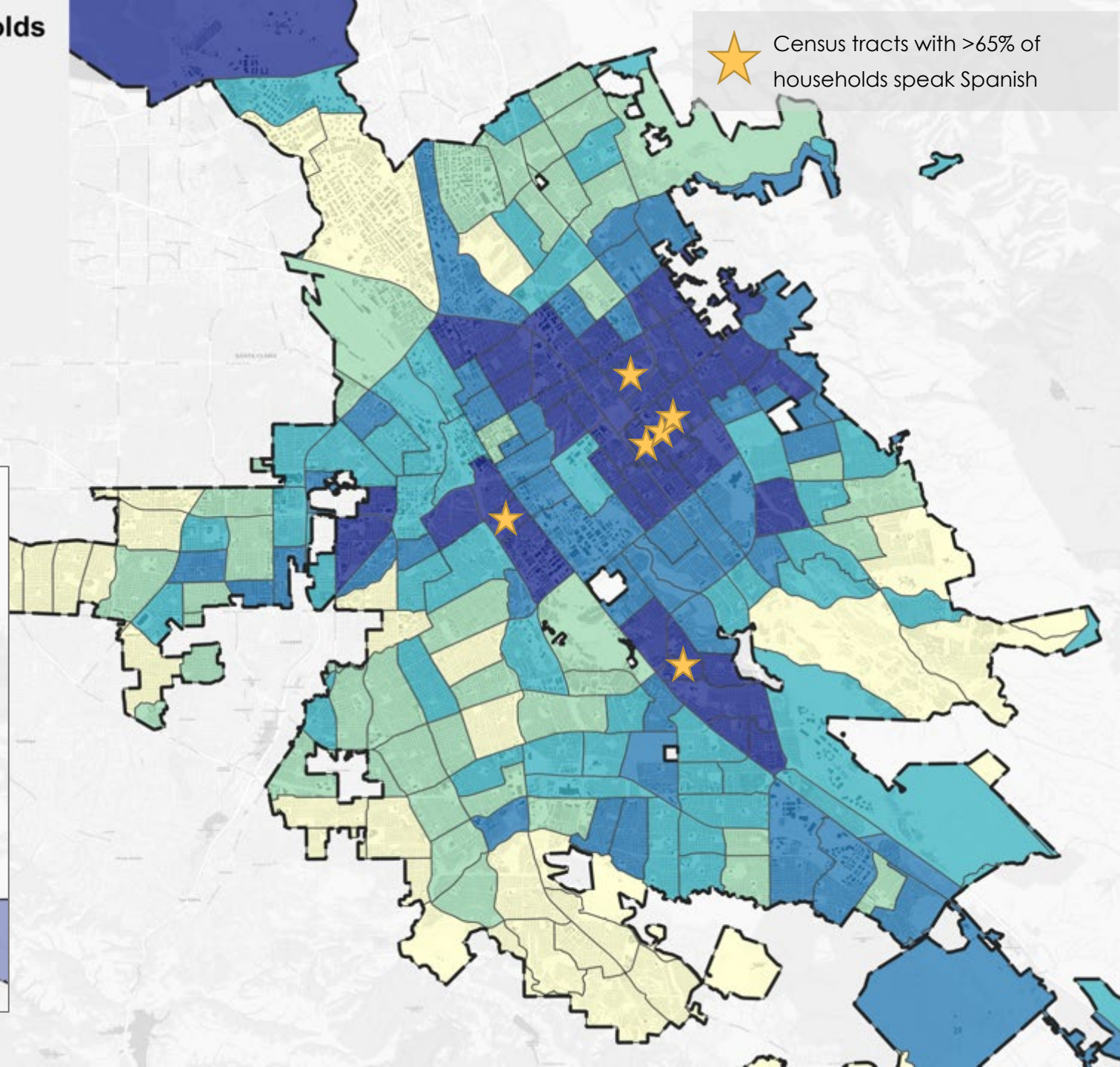
# Spanish-Speaking Households

## Spanish Speaking Households by Census Tract

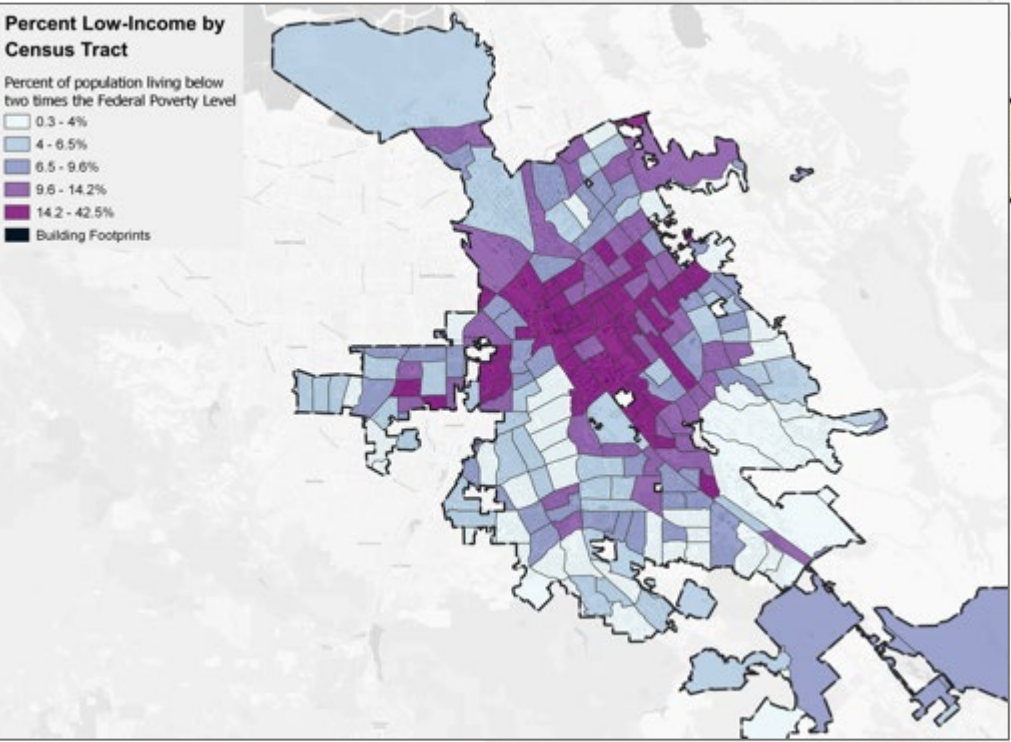
Percent of Households where Spanish is Spoken

- 0 - 6.5%
- 6.5 - 12.6%
- 12.6 - 18%
- 18 - 34%
- 34 - 72.1%
- Building Footprints

★ Census tracts with >65% of households speak Spanish



## For Comparison: Low-income Distribution



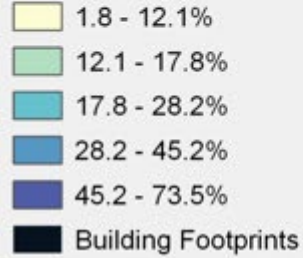
Source: US Census 2013-2017 ACS 5-Yr Estimates



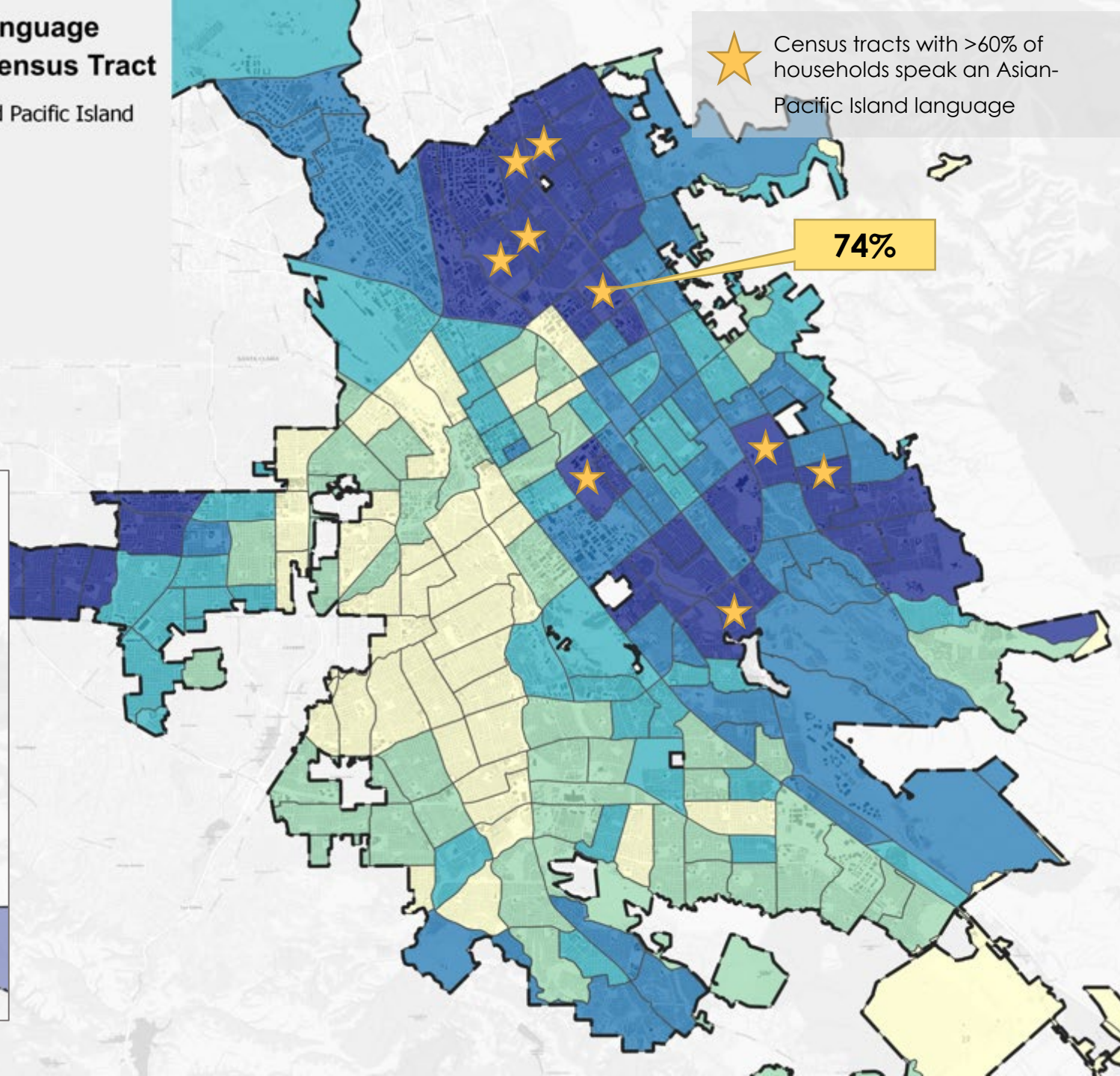
# Asian-Pacific Island Language-Speaking Households

## Asian and Pacific Island Language Speaking Households by Census Tract

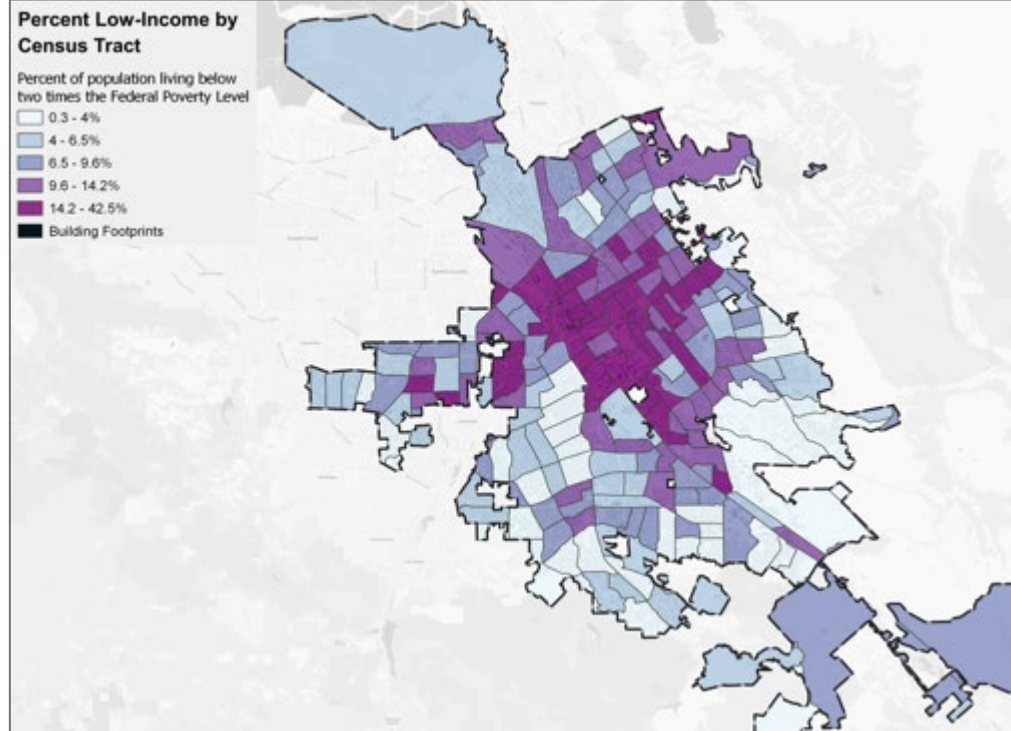
Percent of Households where Asian and Pacific Island Language are Spoken



★ Census tracts with >60% of households speak an Asian-Pacific Island language



## For Comparison: Low-income Distribution



Source: US Census 2013-2017 ACS 5-Yr Estimates



# Environmental Risk Indicators

---

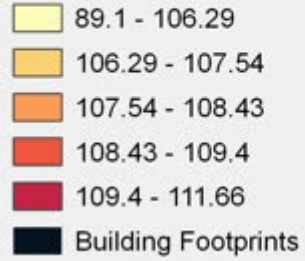
## List of Environmental Risk Indicators

- Heat risk
- Pollution burden
- Wildfire risk
- Public Safety Public Shut-off areas

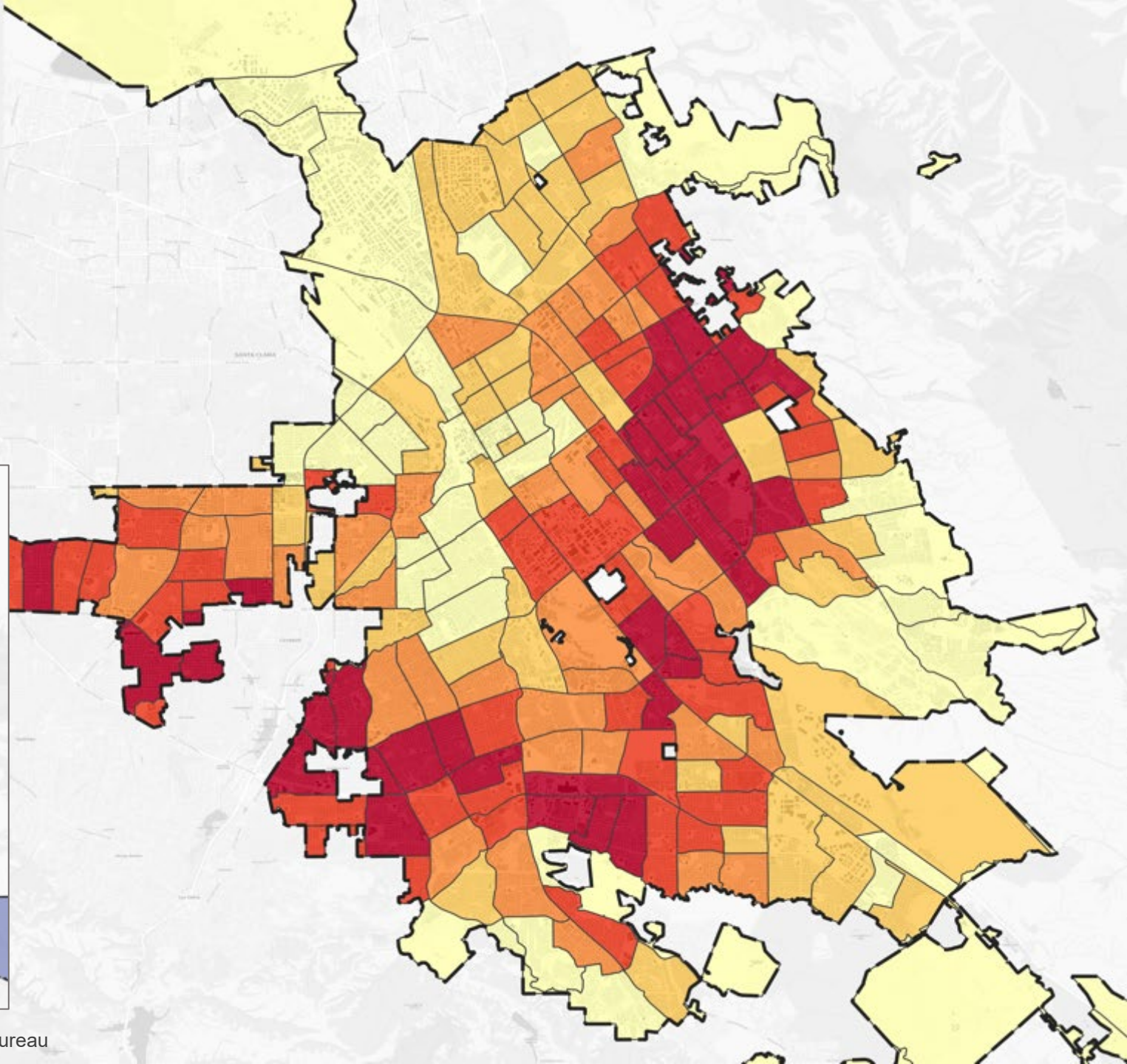
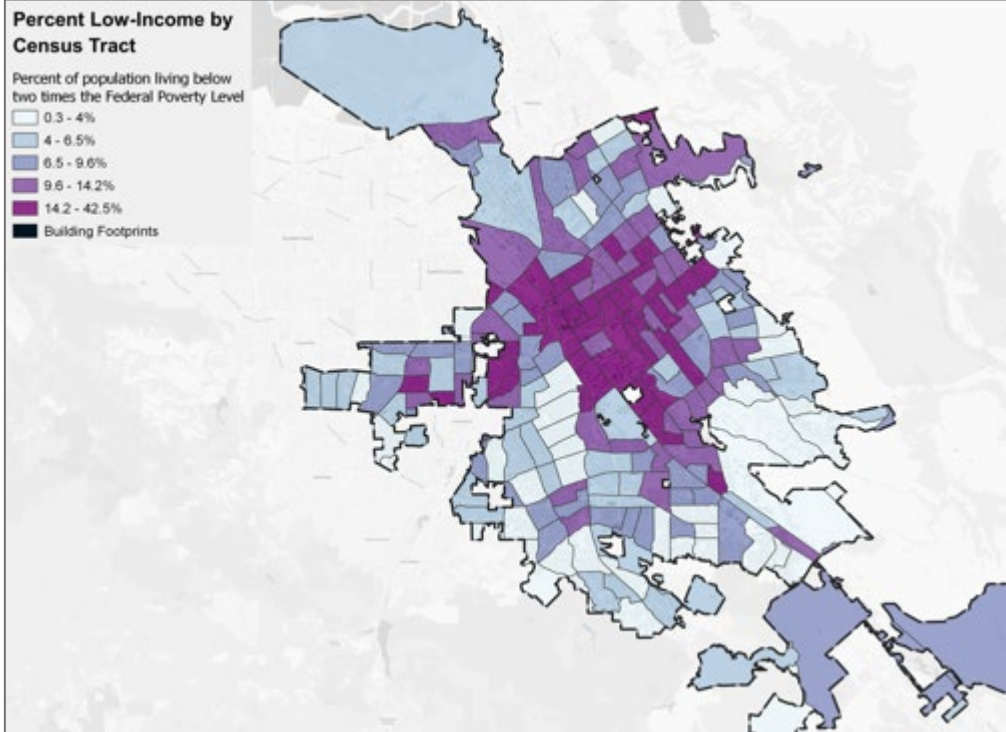
# Heat Risk

## Heat Risk by Census Tract

Median Surface Temperature (F)  
in June-August



## For Comparison: Low-income Distribution

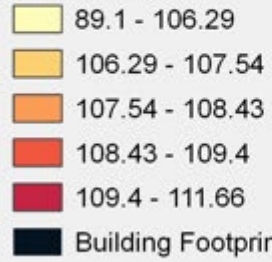




# Heat Risk

## Heat Risk by Census Tract

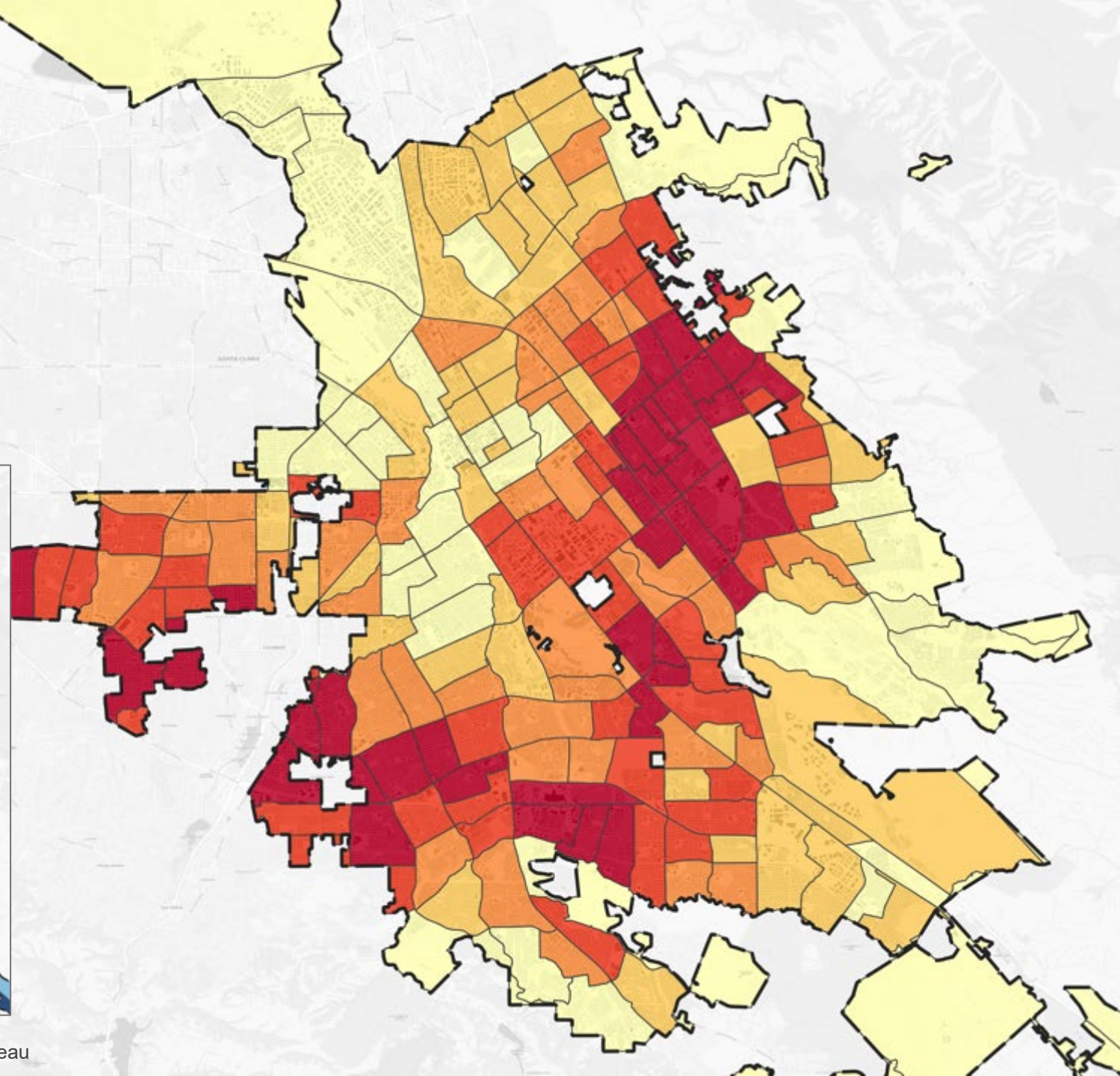
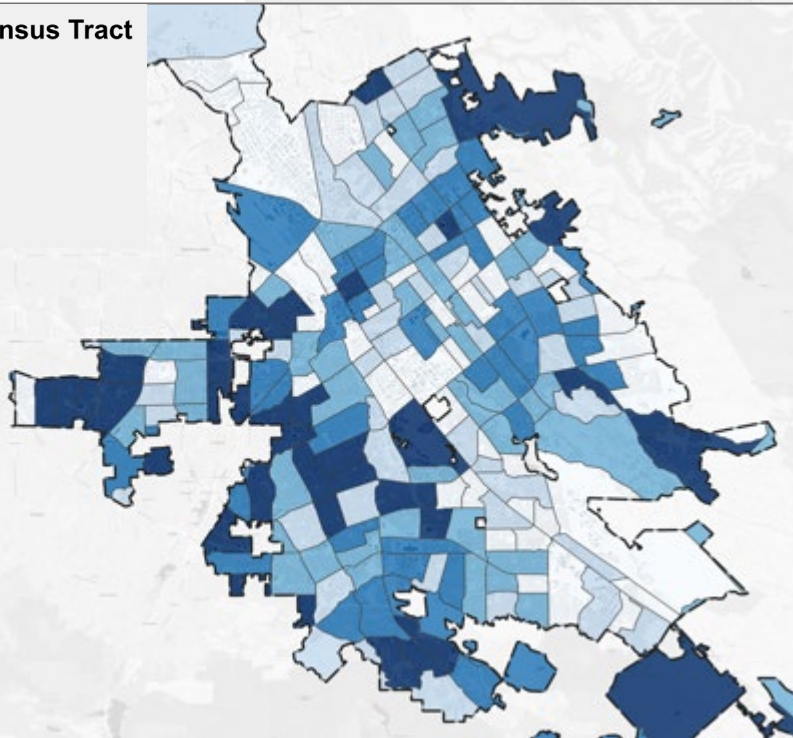
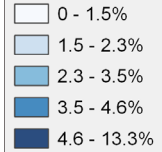
Median Surface Temperature (F)  
in June-August



## For Comparison: Age over 80

### Age over 80 by Census Tract

Percent Aged 80+

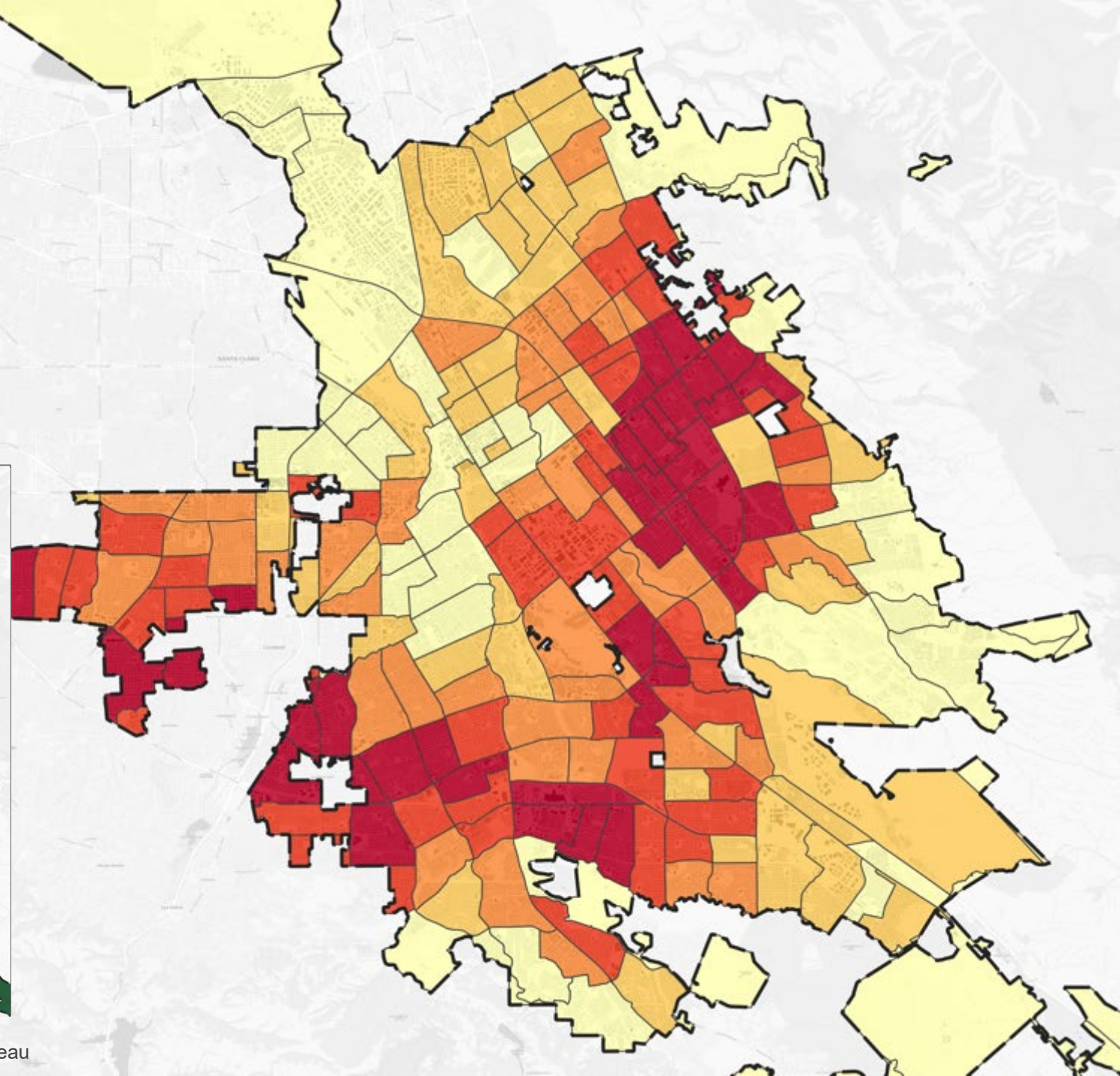
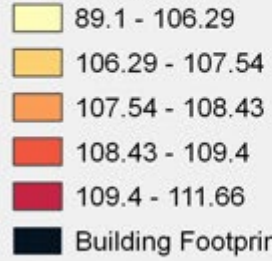




# Heat Risk

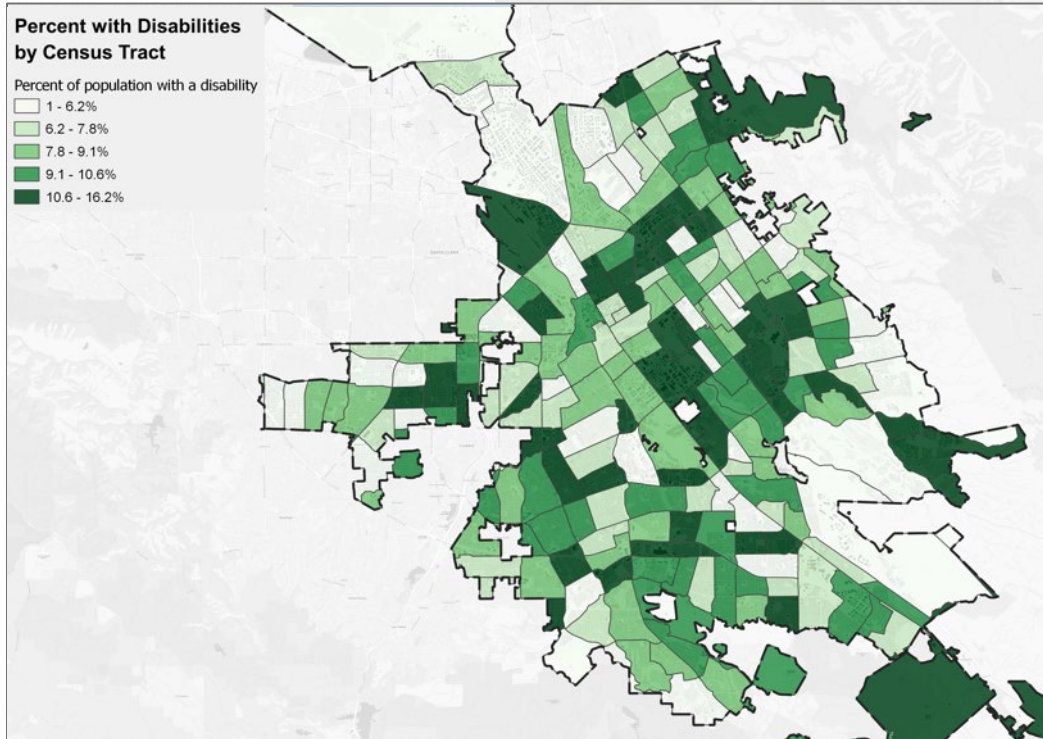
## Heat Risk by Census Tract

Median Surface Temperature (F)  
in June-August



## For Comparison: People with Disabilities

### Percent with Disabilities by Census Tract

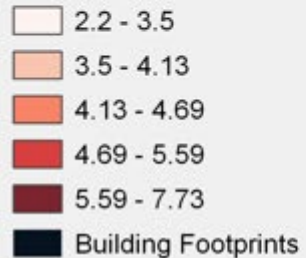




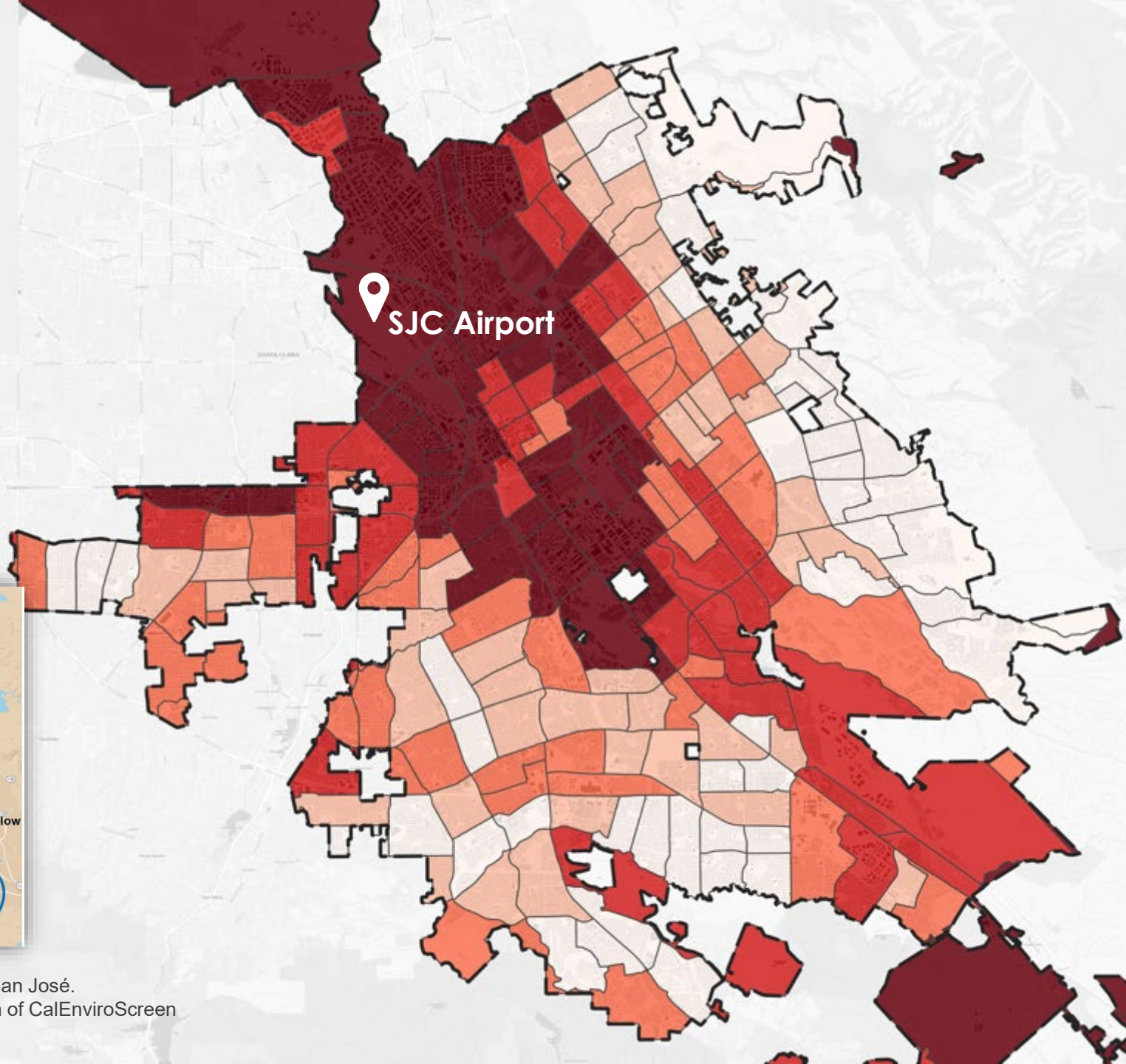
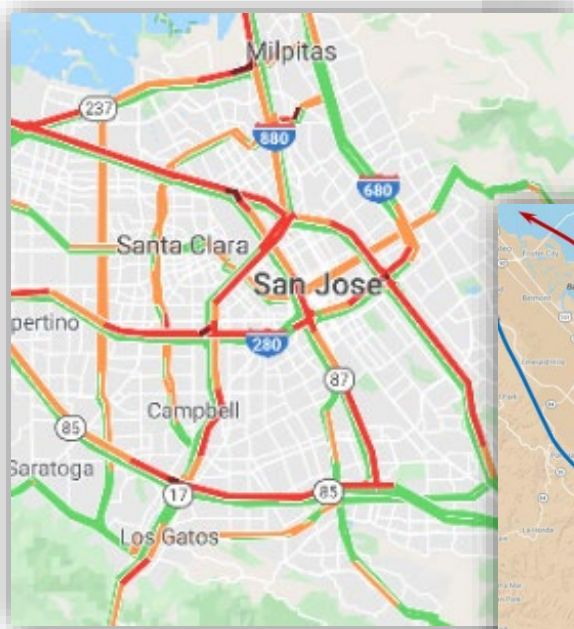
# Pollution Burden

## Exposure to Air Pollution by Census Tract

CalEnviroScreen Pollution Burden Score



For Comparison: San José Airport Flight Paths & Major Highways with typical Tuesday morning traffic



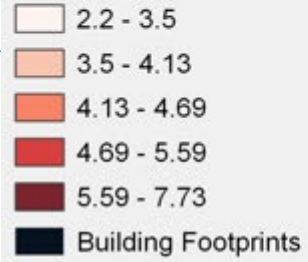
Source: Air pollution – CalEnviroScreen; Traffic – Google Maps; Flight path – Fly San José.  
Note: This map depicts an average of percentiles from the Pollution Burden portion of CalEnviroScreen scoring, including environmental effects and exposure indicators.



# Pollution Burden

## Exposure to Air Pollution by Census Tract

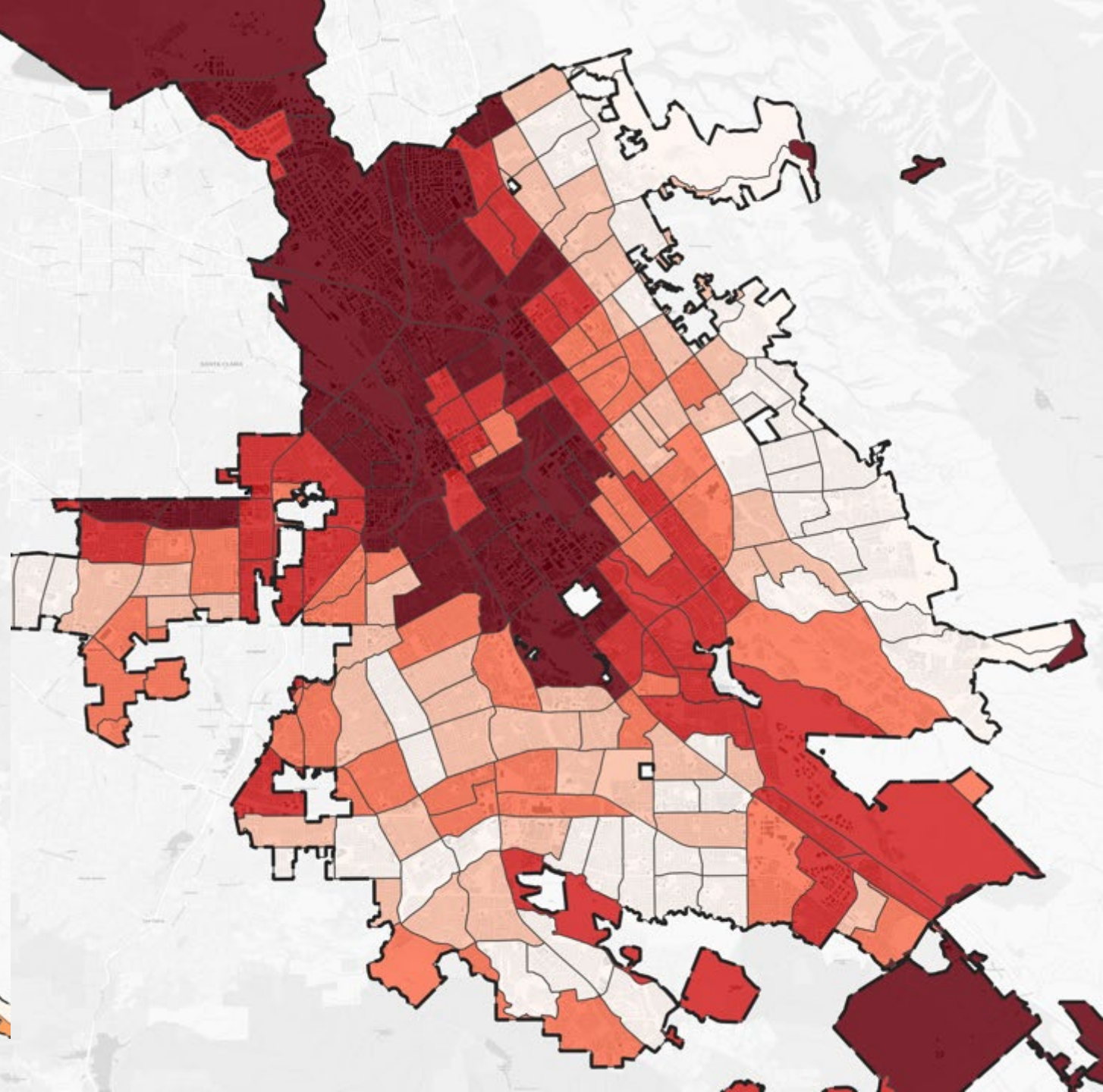
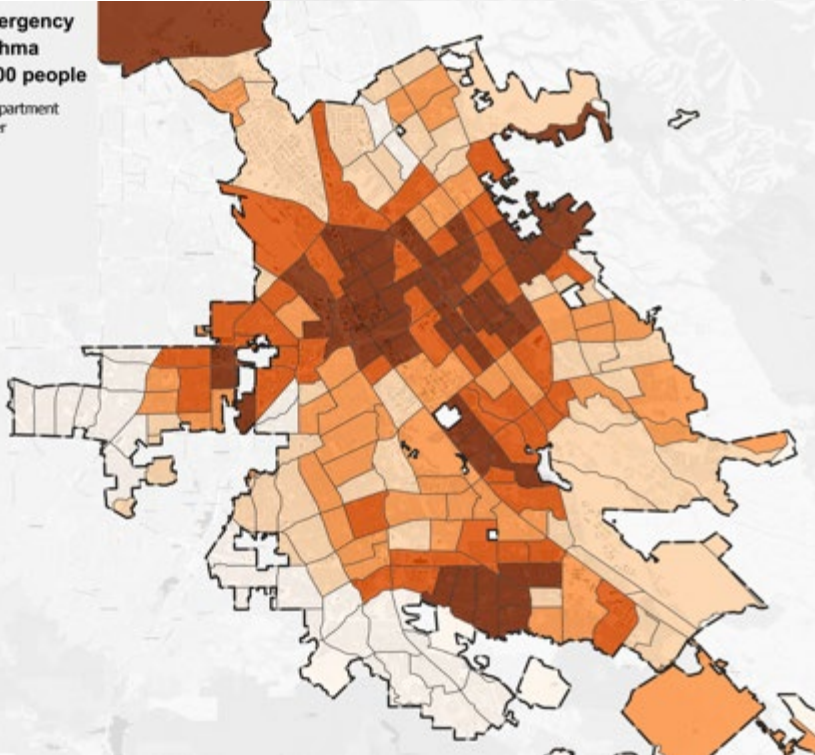
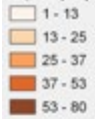
CalEnviroScreen Pollution Burden Score



## For Comparison: Emergency Room Visits for Asthma

Age-Adjusted Rate of Emergency Department Visits for Asthma by Census Tract per 10,000 people

Age-Adjusted Rate of Emergency Department Visits for Asthma by Census Tract per 10,000 people (CalEnviroScreen)







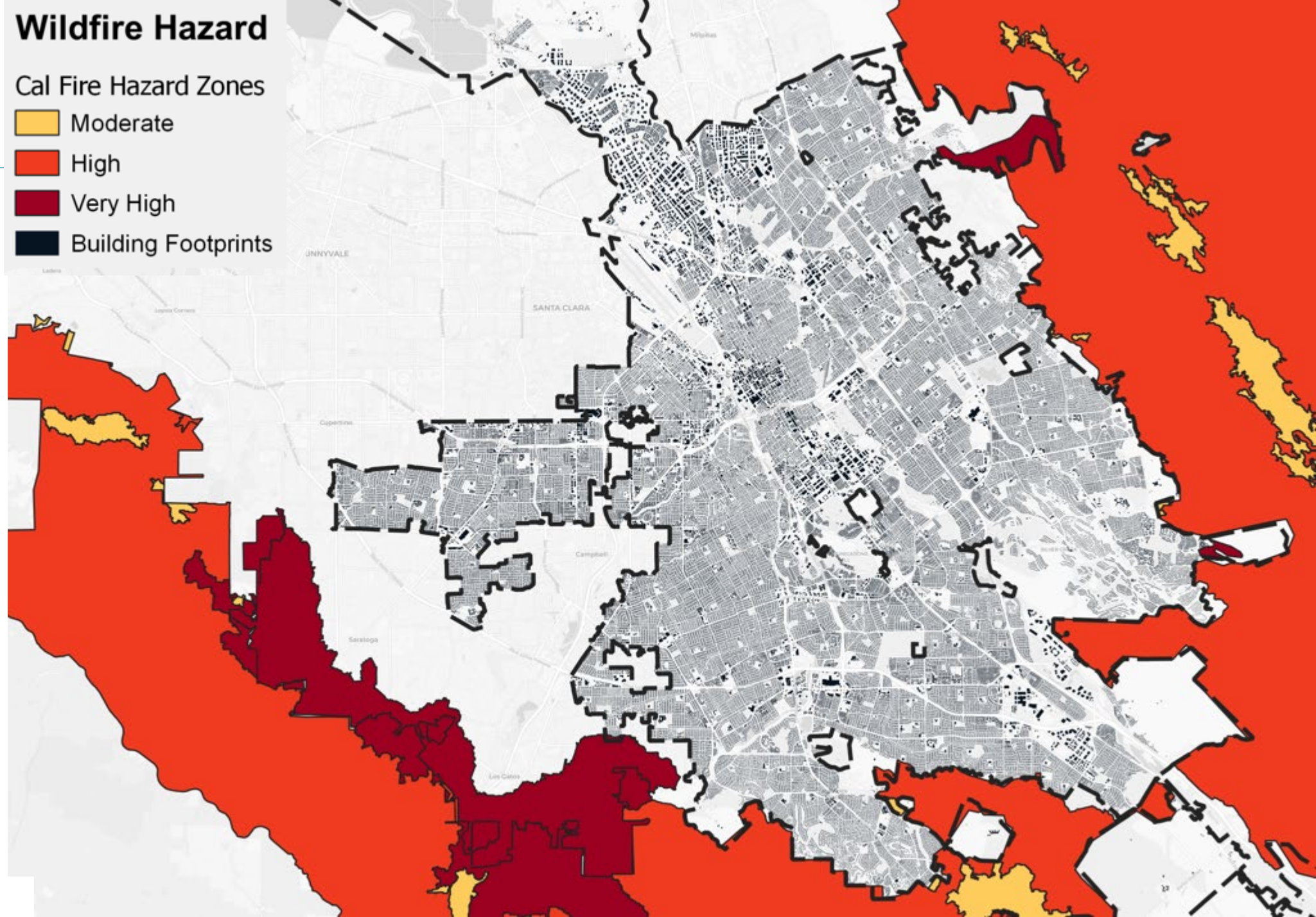


# Wildfire Risk

## Wildfire Hazard

### Cal Fire Hazard Zones

-  Moderate
-  High
-  Very High
-  Building Footprints





# Public Safety Power Shutoffs (PSPS)

## Public Safety Power Shutoffs (PSPS)

- Power Shutoff Regions
- PSPS on 10/9/19
  - PSPS on 10/26/19
  - PSPS on 10/29/19
  - Building Footprints

Areas include all customers that share transmission lines, even if a portion is not in a high-risk fire zone.

No single factor drives a Public Safety Power Shutoff. Some factors include:

A RED FLAG WARNING DECLARED BY THE NATIONAL WEATHER SERVICE



LOW HUMIDITY LEVELS GENERALLY 20% AND BELOW



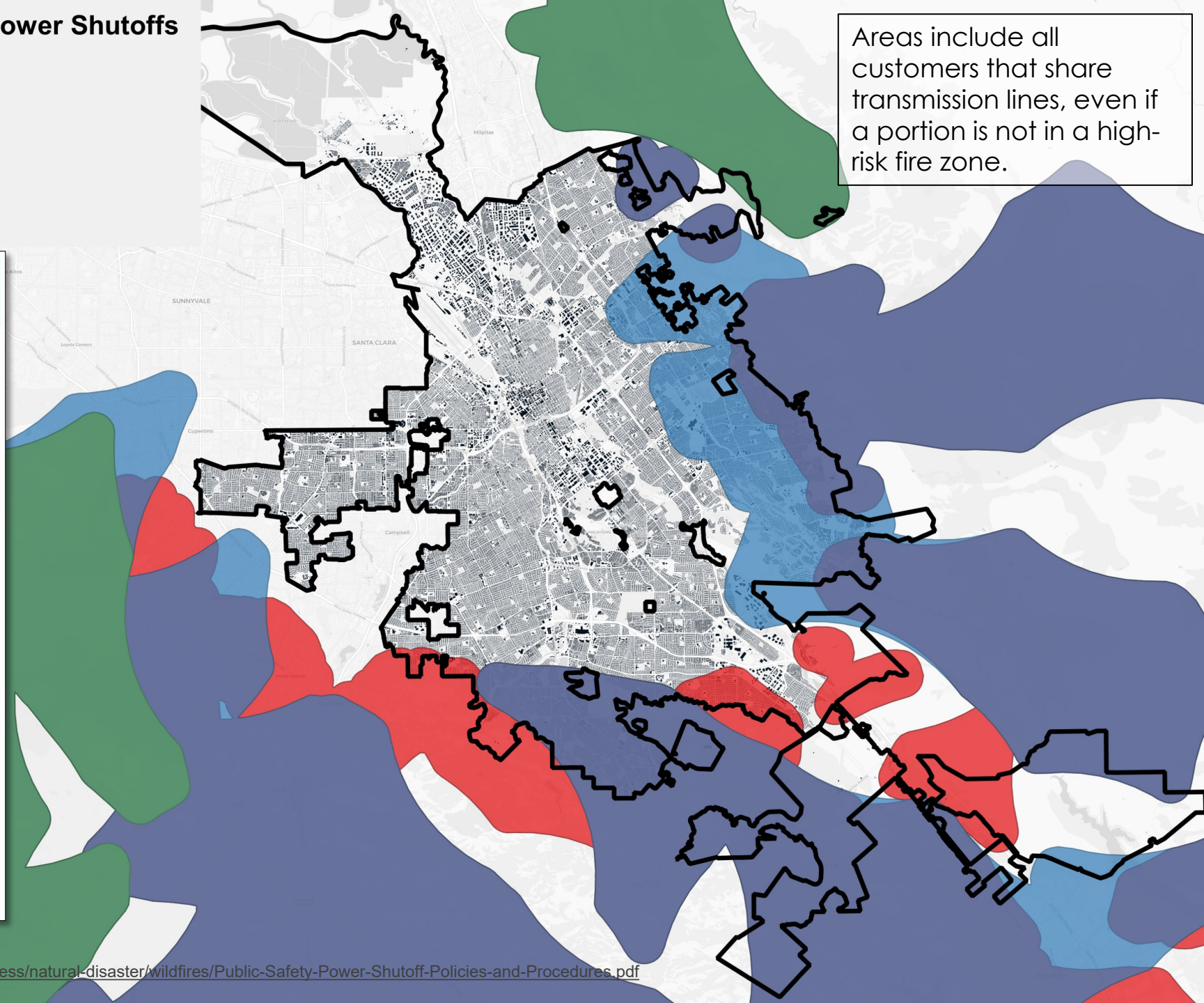
FORECASTED SUSTAINED WINDS GENERALLY ABOVE 25 MPH AND WIND GUSTS IN EXCESS OF APPROX. 45 MPH, DEPENDING ON LOCATION AND SITE-SPECIFIC CONDITIONS SUCH AS TEMPERATURE, TERRAIN AND LOCAL CLIMATE



CONDITION OF DRY FUEL ON THE GROUND AND LIVE VEGETATION (MOISTURE CONTENT)



ON-THE-GROUND, REAL-TIME OBSERVATIONS FROM PG&E CREWS







**BEI** Building  
Electrification  
Institute  
CITIES DRIVING CHANGE



**CLIMATE SMART**  
— SAN JOSE —  
LIVING BETTER TODAY FOR TOMORROW