The Spillover Effects of Upzoning on Neighboring Housing Markets: Evidence from San Jose's Urban Villages

Bennie Chang
Georgetown University
School of Foreign Service

Advised by Professor Xiang Ding

April 17, 2026

Abstract

A housing affordability crisis plagues many metropolitan areas. Many economists attribute rising housing prices to strong consumer demand and a shortage of housing supply, arguing that construction is the solution. However, many metropolitan areas' strict zoning rules prevent new residential development. To address the issue, San Jose in 2011 announced an Urban Villages plan to upzone areas around transit-accessible and commercial areas. Studies explored Urban Villages' effect on upzoned areas, finding that the policy did not increase housing supply; however, few case studies have analyzed upzoning's spillover effects on neighboring areas, where substitutability and changing demand can influence construction activity and housing costs. In this paper, I use a difference-in-differences regression model to identify Urban Villages' spillover effects, measured by five outcome variables: permits issued, housing units permitted, housing units, median home value, and median rent. In neighboring areas, I find a 19.4% decrease in the number of housing units permitted, despite no significant change in the number of permits issued. Furthermore, neighboring areas saw a 3.4% increase in home value, in contrast to a 7.2% decrease in upzoned areas. There is no statistically significant effect on the number of housing units or median rent. The results indicate that upzoning policies can absorb development from neighboring areas and affect property values.

Acknowledgements

Growing up in a 1,100 square feet ranch-style house in West San Jose, I would not have imagined that I would spend a year trying to understand the structural forces shaping my hometown's housing market. This thesis is the brainchild of that curiosity, and of those who supported me on this exploration.

In particular, I would like to thank my adviser, Professor Xiang Ding. From Cambridge-DC calls to scratch papers filled with upzoning diagrams, I am grateful for novel study design suggestions, econometrics guidance, and unbelievably speedy email response times. I also have Professor Angelo Rivera Santos to thank for deadlines and weekly thesis workshop laughs: "Are you in touch with your faculty mentors?"

Then there is Professor Brian McCabe for entertaining my infill development questions on neighborhood walks, and Professor C.J. Gabbe for lending his Bay Area expertise to this paper. I thank Laura Maurer from San Jose's Planning Division for Urban Village history and data, along with librarians Abby Scheetz and Ding Ye for guidance. The list does not end there: Dean Annette Russell, my fellow Regional and Comparative Studies thesis writers, those who shared their knowledge, and friends and family who indulged me as I read and learned. Thank you.

Table of Contents

1 Introduction 3

2 Background 5

3 Literature Review 6

4 Data 7

4.1 Data Collection 7

4.2 Independent Variable 7

4.3 Outcome Variables 7

4.4 Controls 8

5 Methodology 9

5.1 Difference-in-Differences Regression Model 9

5.2 Treatment Year 10

5.3 Data Mapping 11

5.4 Consultation 12

6 Results 13

6.1 Permits Issued 13

6.2 Housing Units Permitted 14

6.3 Housing Units 15

6.4 Median Home Value 16

6.5 Median Rent 18

7 Conclusion 20

8 References 21

9 Appendix A: Descriptive Statistics 23

10 Appendix B: Robustness Checks 34

1 Introduction

Housing unaffordability can be seen in New York City, where Gen Zers pay half their paycheck in rent. In Los Angeles, it is the Millennials watching homeownership slip out of reach. In San Jose, it is the Boomers wondering how orchard fields became one of the most expensive places to live on Earth.

The 2020s' housing affordability crisis has brewed over a decade. Before the 2008 Global Financial Crisis, strong consumer demand for housing prompted developers to *build, baby, build.* U.S. construction boomed, reaching nearly 9% of GDP in 2006 (Kirchhoff 2011). By 2010, however, construction plummeted to 5% (Kirchhoff 2011). Home values fell by an average of 30% between 2006 and 2009, and 3.8 million houses foreclosed between 2007 and 2010 (Rich 2013). The housing miracle of the early 2000s disappeared, and America plummeted into its worst recession since the Great Depression. While the country eventually recovered, the construction industry as a whole did not.

In January 2006, over 2.2 million new housing units were built; December 2025 saw fewer than 1.4 million ("New Privately-Owned Housing Units Started" 2026). While some regions, like the Sunbelt, thrived for a period, the U.S. still needs to build 3 to 4 million homes on top of projected construction to correct the shortage ("The Outlook for US Housing Supply and Affordability" 2025).

Structural issues like high labor and materials costs plague the industry. Clearing bureaucratic red tape, such as local permitting approval, can take months or even years. Yet an issue even larger, affecting almost every jurisdiction, looms: zoning.

Zoning is a land-use regulation used by nearly every city, town, or jurisdiction in the U.S. It dictates what can be built where. For example, you *cannot* repurpose an unused industrial space as a multi-family apartment complex. Your Connecticut house *must* sit on an acre of land. The requirements go on: only five units here, you cannot build there, this is reserved for commercial use—no housing, please.

The 1910s gave birth to zoning. In 1916, New York City and Berkeley, California implemented the first comprehensive zoning code and single-family zones, respectively (Bronin 2024). Early advocates argued that homes should not neighbor factories, that schools should not neighbor bars. Jurisdictions across the country followed suit, with commercial, industrial, retail, and residential zones becoming ubiquitous in local planning. Zoning undoubtedly improved city design in many regards, but its restrictive designations limited the buildable housing stock to designated zones. Moreover, many zoning codes prescribed narrow residential uses, often overzoning for single-family homes to the detriment of more affordable and densely populated multi-family and mixed-use neighborhoods.

Stringent zoning codes limit housing supply and drive up prices, prompting reform-minded advocates' support for zoning reform. By making zoning more inclusive, these development-friendly *Yes In My Backyard* (YIMBYs) hope to increase the amount of buildable land and allowable housing types to address the housing affordability crisis. However, a vocal group opposes development: *Not In My Backyard* (NIMBYs). Usually middle-class homeowners, NIMBYs seek to preserve their lifestyle and their community's built environment, arguing that development negatively affects current residents and depresses property values. Nevertheless, zoning reform progressed, driven by YIMBY activism, market demand, and state legislation, among other factors.

At the heart of zoning reform is upzoning, which allows higher-density development. Advocates hope for multi-family homes in previously single-family zones, mixed-use spaces with apartments in previously commercial-only corridors, and other density-increasing changes. Property owners and cities can request upzonings, and depending on the jurisdiction, local officials or the city council will review and decide the case. While commonly seen as binary (a parcel is either upzoned or not), upzoning should also be viewed on a scale. Areas upzoned from low-density single-family to medium-density single-family should be treated differently from those upzoned to high-density mixed-use.

This paper explores upzoning and its effect, not only on upzoned land but also on neighboring housing markets, hereafter referred to as neighboring areas. Using a difference-in-differences regression model, I analyze the effect of San Jose's Urban Villages plan on five housing construction and price indicators that measure the market trends. The construction indicators—the number of new housing construction permits issued, the number of new housing units permitted, and the number of housing units—track the development pipeline and identify where the construction bottleneck or acceleration occurs. The median home value and the median rent are the price indicators that capture the market's valuation and the resulting impact on neighborhood affordability. Together, these variables, commonly used in housing studies, help tell San Jose's upzoning story. This research indicates that in neighboring areas, the number of housing units permitted decreased and median home value increased, while other factors remained largely unchanged.

2 Background

Through the mid-20th century, lush orchards blanketed San Jose, California. Apricots and prunes decorated the landscape of West San Jose, the quiet suburban neighborhood I call home. Once known as the Valley of Heart's Delight, as my octogenarian neighbors would explain, the valley transformed into Silicon Valley, home to HP, Intel, Apple, Google, and Meta. With the silicon came the engineers and the home builders. Orchards cleared way for single-family suburban neighborhoods and elementary schools. While technically a major American city, the City of San Jose is more of a suburban sprawl: 94% of its residential land is zoned for single-family residential use (City San José 2025b). The city's land is almost entirely developed, capping the housing supply in a market where growing demand from wealthy earners willing to cut multi-million dollar checks for a 1950s, 1000-square-foot ranch home on a tenth-of-an-acre drives prices up and up. In a Chapman University study, researchers found San Jose to be the most expensive metropolitan housing market in the country (Cox 2025).

In November 2011, San Jose announced one of its solutions: Urban Villages. Designated as "areas that include residential and jobs-based developments; have access to transit; and are walkable and bicycle-friendly," Urban Villages are pockets within the city identified by local planners as prime development opportunities (City San José 2025c). Most sit along commercial and transit corridors. Almost all are underutilized and are prime for denser development from private developers. As of November 2025, 66 areas are designated Urban Villages, almost all of which were announced 14 years earlier. After designation, the city drafted construction plans for community feedback and city council approval, which are necessary for development to commence. Yet only two villages are under construction; only 14 were approved (City San José 2025c).

Urban Villages are not only development projects but also government-initiated upzonings. In San Jose, upzoning occurs in the zoning code, a legal document, or in the General Plan, a goal-oriented document. Title 20 of the Municipal Code outlines the official, formal zone for each parcel in the city (City San José 2025e). However, amending the code is a tedious process, so the city uses its state-mandated General Plan—a document that guides a city's land-use planning, among other areas—as an unofficial zoning code. Falling under the latter, the Envision San Jose 2040 General Plan was adopted in November 2011, giving birth to Urban Villages (City San José 2025a). While upzoning outside of Urban Villages occurs, they are piecemeal and infrequent, often seen as municipal code changes initiated by citizens (Gabbe 2019). Consequently, I focus on Urban Villages, the largest upzoning in the city since the global financial crisis.

3 Literature Review

Both large cities and small towns pursue zoning reform in hopes of promoting development, but research focuses on upzoning's effects in larger cities like New York City, Chicago, Minneapolis, and Portland. New York City studies found that relaxing zoning policies can result in more construction, but that development in inexpensive or already densely built areas is not profitable (Liao 2026; Rollet 2025). By upzoning parcels where development is most profitable, cities can successfully encourage development (Rollet 2025). These studies use real estate prices, rents, building permits, occupancy counts, and household incomes, among other data sources, for analysis. Despite the good intentions of upzoning, not all studies find upzoning effective in increasing housing supply. In Chicago, upzoning did not increase the number of permits issued or the number of housing units; however, property value did increase (Freemark 2020). These studies reveal that upzoning's effect on housing supply is city-specific, and that permit data and financial indicators like home value and rent are common ways to measure upzoning's effects.

In California, each of its three most populous cities—Los Angeles, San Diego, and San Jose—underwent city-wide upzonings. Los Angeles' Transit Oriented Communities (TOC), announced in 2013, identifies areas within a half-mile from major bus and metro stops. Roughly 120 miles south, San Diego announced in 2020 its own transit-oriented development strategy, Complete Communities (City San Diego 2026). Of course, there are also San Jose's Urban Villages.

In Los Angeles, a study by Tanrisever found that upzoning increased the number of housing units, without decreasing unit size, and increased home prices (Tanrisever 2024). The study also observed that neighboring areas within a one-mile radius of TOC zones experienced a similar but delayed effect, revealing the potential of spillover effects. While no comparable study exists for San Diego, a 2011 paper by Gabbe et al. on San Jose revealed that Urban Villages did not affect residential and commercial permits issued, large development projects, property transactions, or assessed property values in the 9 years after its announcement (Gabbe et al. 2021). In other words, upzoning did not increase housing supply. From the pair of studies, Los Angeles appears more like a New York City and San Jose a Chicago. These results are likely because of both exogenous factors, like geography, and endogenous factors, a topic worth further exploration.

Inspired by Tanrisever's research on spillover effects and Gabbe's study on San Jose, I set out to examine the spillover effect on neighboring areas of San Jose's Urban Villages. I identified five outcome variables of interest: permits issued, housing units permitted, housing units, median home value, and median rent. I selected these five because permit and housing unit data are common proxies for construction progress while home value and rent measure price changes in housing markets (Freemark 2020; Rollet 2025; Liao 2026; Gabbe et al. 2021; Tanrisever 2024). Based on Gabbe et al.'s finding that there was a lack of construction within Urban Villages, I hypothesized that in neighboring areas, Urban Villages would not affect permits issued, housing units permitted, or housing units because villages would absorb growth. While few studies have explored upzoning's spillover effects onto neighboring areas, I suspected that San Jose's neighboring experience would be similar to upzoned areas in the city or that of Chicago, which saw a lack of newly permitted housing units or additional new housing construction (Freemark 2020). However, I expected neighboring areas' median home value and rent to increase because of increased access to desirable amenities in Urban Villages without the drawbacks of direct proximity, as seen in the literature (Matthews and Turnbull 2007; Duncan 2011).

4 Data

4.1 Data Collection

To analyze upzoning's effects, I collected data from the City of San Jose and the U.S. Census. San Jose's Geographic Information Systems (GIS) Open Data contained Urban Villages shapefiles, while the city's online permit database listed all issued permits (San Jose CA GIS Open Data 2025; City San José 2025d). The Census' American Community Survey (ACS) 5-year estimates, a benchmark dataset in urban economics, proved essential in measuring outcome variables (US Census Bur. 2026). ACS data are reported in census tracts, with San Jose having 240 census tracts and roughly 4,000 residents per tract. After data collection, I merged Urban Village shapefiles and permit addresses into census tracts, the most precise geographical areas of analysis possible based on publicly available data. The merging process is outlined in the methodology section.

4.2 Independent Variable

Upzoning, specifically that of Urban Villages, is my independent variable. I identified 66 Urban Villages by filtering for Urban Villages in the Growth Area 2040 shapefile on the San Jose GIS Open Data website, which provides a binary 0 or 1 identification (San Jose CA GIS Open Data 2025). The data cleanly defines upzoning based on announced Urban Villages at the time of data collection, October 2025. Using the data assumes a uniform announcement date for each village, which the city's planning department confirmed; however, the city has modified some villages since 2011, a factor that this data does not take into account. Nevertheless, the Urban Villages shapefile is the most reliable way to measure Urban Villages' upzoning.

4.3 Outcome Variables

I chose to measure five outcome variables: permits issued, housing units permitted, housing units, median home value, and median rent. The first three measure construction progress while home value and rent measure upzoning's financial implications.

Permits issued and housing units permitted were collected from San Jose's permits database and filtered for "new construction" with at least one housing unit, indicating new housing construction (City San José 2025d). For permits issued, I count the number of new permits per census tract. For housing units permitted, I count the total housing units across those permits. To eliminate double-counting, I deduplicate using property addresses. This is the most direct measurement in my dataset, requiring no proxy.

Housing units are measured using the total number of housing units per census tract as reported in the ACS. This measures the overall housing supply rather than new construction specifically. As a proxy for construction, housing units do not distinguish between new construction, demolition, or conversion; however, it reflects the net outcome that upzoning policy ultimately targets: an increase in housing supply as measured by housing units.

Median home value and median rent are also directly from the ACS census tract estimates. Both are self-reported by residents, meaning they reflect perceived rather than assessed or transacted values. This is a meaningful limitation: the measures capture homeowner and renter sentiment about value rather than actual market dynamics. Both variables can fluctuate across years due to small tract-level sample sizes.

4.4 Controls

Two control variables are included in all models: median income and population, both drawn from the ACS. Median income controls for the possibility that changes in outcome variables reflect shifting purchasing power rather than the policy itself. Rising incomes increase willingness to pay for housing, which would push home values and rent upward regardless of upzoning's effect. Population controls for demand-side growth. Without it, increases in permits issued, housing units permitted, or housing units could reflect a growing population rather than a policy response. Both controls are log-transformed to account for the skewed distributions typical of income and population data at the census tract level and to improve model fit.

5 Methodology

5.1 Difference-in-Differences Regression Model

To identify spillover effects, I run six difference-in-differences regression models. The base model compares outcomes before and after the 2011 Urban Villages announcement across three tract categories: directly upzoned tracts, neighboring tracts within 0.5 miles of an Urban Village boundary, and comparison tracts between 0.5 and 1.5 miles out. Models 1 through 3 test each category separately and jointly. Models 4 through 6 repeat the same specifications with log-transformed outcome variables.

Table 1: Difference-in-Differences Model Specifications

Model	**Name**	**Specification**
1	Neighbor	$Y_{it} = \beta_0 + \beta_1(NeighborUpzone_i \times Post_t) + \gamma X_{it} + \alpha_i + \delta_t + \varepsilon_{it}$
2	Direct Upzone	$Y_{it} = \beta_0 + \beta_1(Upzone_i \times Post_t) + \gamma X_{it} + \alpha_i + \delta_t + \varepsilon_{it}$
3	Combined	$Y_{it} = \beta_0 + \beta_1(Upzone_i \times Post_t) + \beta 2(NeighborUpzone_i \times Post_t) + \gamma X_{it} + \alpha_i + \delta_t + \varepsilon_{it}$
4–6	Log specs	Models 1–3 repeated with log-transformed outcome variable (*log* or *log+1* depending on outcome).

Where:

Y_{it} = Outcome variable for census tract i in year t: permits issued, housing units permitted, housing units, median home value, and median rent

$Upzone_i$ = Indicator = 1 if tract i is within an Urban Village boundary

$NeighborUpzone_i$ = Indicator = 1 if tract i is within 0–0.5 miles of an Urban Village boundary

$Post_t$ = Indicator = 1 for years after treatment year

X_{it} = Controls: median income, population

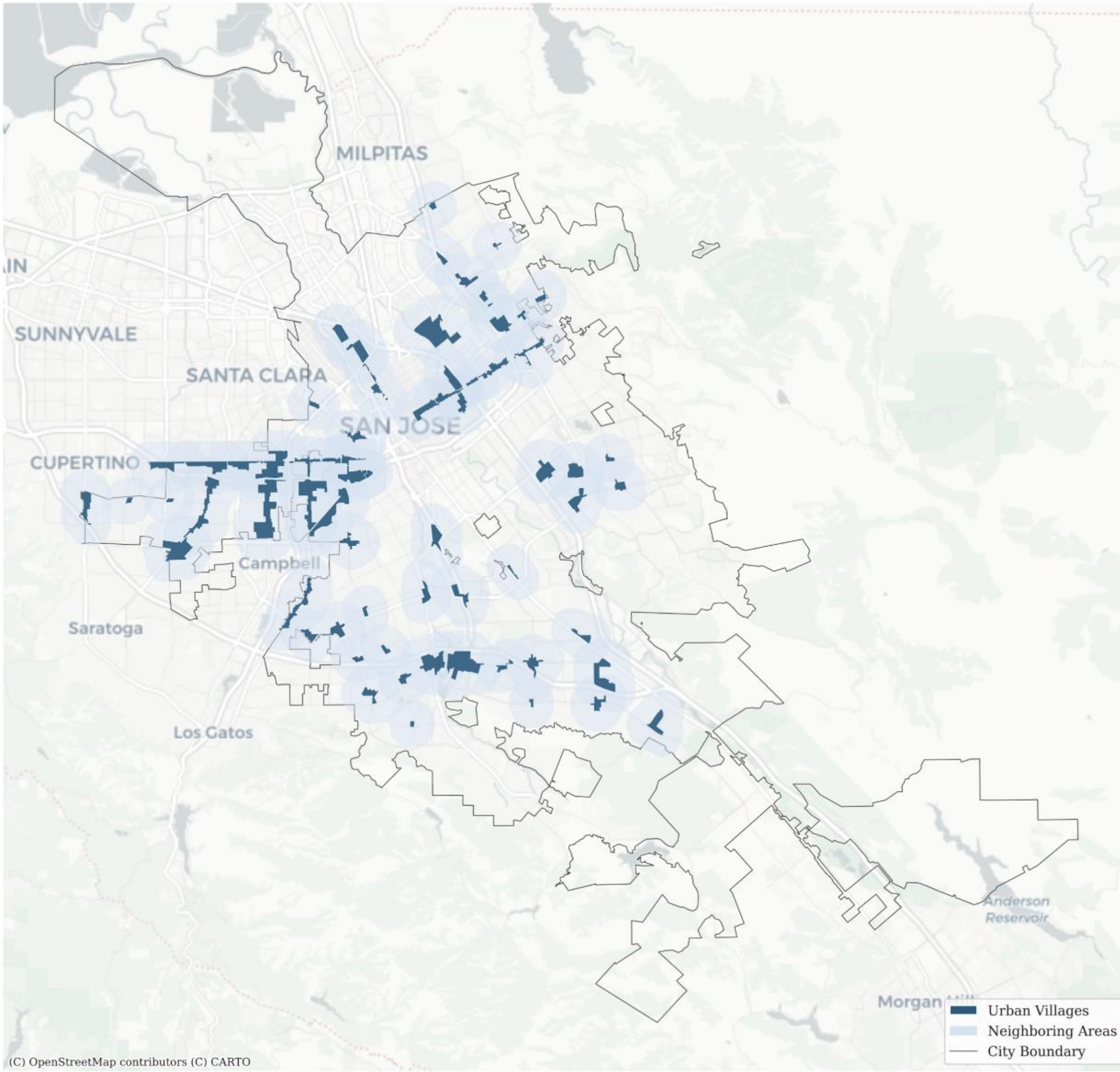
α_i = Census tract fixed effects

δ_t = Year fixed effects

ε_{it} = Clustered error term (tract level)

Notes: Comparison group is census tracts 0.5–1.5 miles from upzoned areas. Standard errors clustered at the census tract level.

Figure 1: Urban Villages and Neighboring Areas in San Jose, California



Notes: This map illustrates designated Urban Villages and their surrounding 0.5-mile Euclidean buffers, representing primary growth areas and adjacent residential zones. The San Jose city limit is delineated by a solid boundary. Data is sourced from the City of San Jose Open Data Portal and processed using the NAD83 / California Zone 3 (ftUS) coordinate system.

All models include census tract and year fixed effects to control for time-invariant tract characteristics and city-wide trends. Standard errors are clustered at the tract level.

5.2 Treatment Year

All models use 2011, the year of the Urban Villages policy announcement, as the base treatment year. Outcome variables are coded based on the timeline through which each is expected to respond to upzoning.

For all ACS-based variables, I reference the midpoint of each 5-year estimate rather than the release year. For example, a 2011 ACS release is coded as 2009 to better represent the period the data captures. For permit data, I use the raw permit issuance year.

Price variables like home value and rent use the coded year directly, reflecting how prices and residential decisions respond to market expectations rather than completed construction. Construction responses, including permits issued and housing units permitted, also carry no lag, as they can immediately respond to a policy announcement. The housing units variable is the only one assigned a lag, with the four years representing the average California production timeline for market-rate apartments (Ward and Schlake 2025). The four-year lag is a conservative estimate of the construction timeline in San Jose's Urban Villages, where approval and construction may take longer because of affordable housing requirements. To account for this, I also modeled a 6-year construction lag (Table B6 in Appendix B) and found a decrease of 64 units in upzoned tracts, likely reflecting the demolition of housing units before redevelopment.

Table 2: Outcome Variable Years Lagged and Rationale

Outcome Variable	**Years Lagged**	**Category**	**Rationale**
Permits Issued	**0**	*Construction response*	Permits are filed at the start of the development process and can respond to upzoning immediately after announcement.
Housing Units Permitted	**0**	*Construction response*	Like permits, housing unit approvals are an early-stage construction signal tied directly to the announcement year.
Housing Units	**4**	*Construction response*	Physical construction takes time. A 4-year lag from announcement to completed units accounts for planning, permitting, and build timelines.
Median Home Value	**0**	*Price response*	Home values respond to market expectations. Buyers and sellers reprice upon policy announcement, not upon construction completion.
Median Rent	**0**	*Price response*	Rent adjusts quickly at lease renewal. Landlords reprice in response to anticipated neighborhood change, consistent with the announcement year.

Notes: All models use the 2011 Urban Village policy announcement as the treatment year.

5.3 Data Mapping

All outcome variables are measured at the census tract level. To assign tracts to treatment categories, I used Python to calculate the centroid of each tract. Tracts whose centroids fell within an Urban Village boundary were coded as upzoned. Tracts outside Urban Village boundaries but within 0.5 miles of one were coded as neighboring, inspired by Tanrisever's Los Angeles study, which used a one-mile radius (Tanrisever 2024). Given the lack of substantial residential construction within San Jose's Urban Villages, as found by Gabbe et al., I suspected spillover effects would be localized to immediately adjacent tracts, so I used the tighter 0.5-mile radius (Gabbe et al. 2021). Tracts between 0.5 and 1.5 miles from any Urban Village boundary serve as the comparison group. As a robustness check, I ran Tanrisever's one-mile radius for neighboring areas, with tracts between 1 and 2 miles serving as the comparison group. These results, which can be found in Appendix B, were overwhelmingly statistically insignificant, confirming my hypothesis that neighboring spillover effects are better measured by observing immediately adjacent tracts within the 0.5-mile band. A limitation of this mapping approach is that Urban Village boundaries do not align precisely with census tract boundaries, meaning tract labels should be viewed as estimations rather than precise classifications. Other mapping approaches, like looking at the share of the tract that fell within the Urban Village boundary, could also be used in the future.

ACS outcome variables were matched to tracts by census tract ID. Because tract boundaries changed over time, I used the ACS 2010 tract definition throughout the analysis and dropped the select few tracts that did not conform.

Permit data required additional processing since permits are address-coded rather than tract-coded. I geocoded each permit address to its corresponding census tract and aggregated permit counts and housing units to the tract level. I initially used Assessor Parcel Numbers (APNs) for deduplication, but APN changes over time caused roughly 40% of records to be lost. Switching to address-based matching retained 99.7% of the data.

5.4 Consultation

To verify the treatment timeline, I consulted the General Plan and Analytics Team within San Jose's Planning Division. They confirmed that nearly all Urban Villages were announced in 2011, with a few exceptions, supporting the use of a single base treatment year rather than staggered village-level dates.

6 Results

The five outcome variables reveal that Urban Villages did not result in construction in neighboring areas, similar to directly upzoned areas. Moreover, the number of housing units permitted actually decreased by 19.4%. In the process, neighboring home values increased by 3.4%, in contrast to a 7.2% decrease in upzoned areas.

6.1 Permits Issued

The first outcome variable I tested was the spillover effect on permits issued. The table below presents results across all six models.

Table 3: Effect of Urban Village Upzoning on Permits Issued

	Permits Issued (Levels)			**Permits Issued (Log+1)**		
	(1)Neighbor	***(2)Direct***	***(3)Combined***	***(4)Neighbor***	***(5)Direct***	***(6)Combined***
Upzone × Post	—	3.211 (2.466)	3.174 (2.493)	—	0.286 (0.329)	0.275 (0.319)
Neighbor Upzone × Post	-0.465 (0.361)	—	-0.431 (0.362)	-0.129* (0.068)	—	-0.126* (0.067)
Median Income (log)	0.066 (0.847)	-0.003 (0.858)	0.009 (0.860)	-0.017 (0.130)	-0.025 (0.131)	-0.022 (0.131)
Population (log)	-4.533*** (1.609)	-4.554*** (1.635)	-4.576*** (1.628)	-1.039*** (0.225)	-1.036*** (0.226)	-1.043*** (0.225)
Observations	2,694	2,694	2,694	2,694	2,694	2,694
R^2 (Within)	-0.006	0.006	-0.002	-0.043	-0.015	-0.041
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Log specification uses log(1+permits) transformation. Treatment defined by Urban Village policy announcement (2011). Comparison group is census tracts 0.5–1.5 miles from upzoned areas. Negative within R^2 indicates the model explains less variance than the within-group mean alone, consistent with high permit volatility across tracts.*

Neighboring areas show a marginally significant log coefficient of -0.129 with a p-value of 0.058, as seen in model (4), while directly upzoned areas show no significant effect with a log coefficient of 0.286 with a p-value of 0.386, as seen in model (5). For neighboring areas, the levels models are not statistically significant while one log model is marginally significant, meaning interpretations should be made with caution. Results hold when moving from individual to combined models. While the negative R^2 values may appear counterintuitive, they are consistent with the high volatility in permit data, in which spikes and drops in development make it difficult to create a linear model that out-performs a tract's average, and they do not invalidate the estimated coefficients.

The marginal result for neighboring areas raises the possibility that upzoning suppressed permit filings nearby. Two explanations are plausible. Developers may be deterred from investing in neighboring areas, waiting to see whether Urban Villages attract enough activity to justify construction next door. Alternatively, developers consolidating projects into fewer, larger multifamily buildings would file fewer permits even while planning the same number of units. Section 6.2 tests whether housing units permitted followed a similar pattern. In directly upzoned Urban Village areas, the results show that upzoning did not affect permit activity, consistent with Gabbe et al.'s findings.

The results for neighboring areas partially contradict my hypothesis that no spillover effect would be noticeable. Given no measurable construction increase in upzoned areas from Gabbe et al.'s study, I did not anticipate a potentially negative spillover in the number of permits issued. The existing literature on successful upzoning suggests neighboring areas should see more activity, not less (Tanrisever 2024). That the opposite may be occurring here suggests that when development does not materialize in designated zones, it may dampen rather than encourage adjacent investment.

6.2 Housing Units Permitted

Next, I examined housing units permitted, a more precise measure of development intentions than permit counts alone. The table below presents results across all six models.

Table 4: Effect of Urban Village Upzoning on Housing Units Permitted

	Housing Units (Levels)			**Housing Units (Log+1)**		
	(1)Neighbor	***(2)Direct***	***(3)Combined***	***(4)Neighbor***	***(5)Direct***	***(6)Combined***
Upzone × Post	—	8.312 (16.457)	8.031 (15.893)	—	0.255 (0.586)	0.237 (0.554)
Neighbor Upzone × Post	-3.383 (3.576)	—	-3.296 (3.526)	-0.215** (0.108)	—	-0.213** (0.107)
Median Income (log)	-17.022** (7.309)	-17.253** (7.370)	-17.165** (7.381)	-0.206 (0.207)	-0.216 (0.209)	-0.210 (0.208)
Population (log)	-41.689 (26.196)	-41.630 (25.931)	-41.800 (26.143)	-1.711*** (0.417)	-1.703*** (0.413)	-1.714*** (0.416)
Observations	2,694	2,694	2,694	2,694	2,694	2,694
R^2 (Within)	-0.032	-0.027	-0.032	-0.070	-0.044	-0.070
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Log specification uses log(1+housing units) transformation. Treatment defined by Urban Village policy announcement (2011). Comparison group is census tracts 0.5–1.5 miles from upzoned areas. Negative within R^2 reflects high volatility in housing unit counts across tracts.*

Neighboring areas show a statistically significant result: the log coefficient is -0.215 with a p-value of 0.047, as seen in model (4). On the other hand, directly upzoned areas show no significant effect: the log coefficient is 0.255 with a p-value of 0.664, as seen in model (5). As with the number of permits issued, levels models for neighboring areas are not statistically significant while some log models are, warranting caution. Results are consistent across individual and combined models. While the negative R^2 values may appear counterintuitive, they are consistent with the high volatility in permit data, in which spikes and drops in development make it difficult to create a linear model that out-performs a tract's average, and they do not invalidate the estimated coefficients.

The neighboring area result is a key finding from this research: a 19.4% decrease in housing units permitted ($e^{-0.2151} - 1 = -0.1935$) followed the Urban Villages announcement. I attribute this to two possible reasons. First, the government designation of Urban Villages as priority development zones may be drawing developer attention inward rather than outward. Second, developers may be holding investment in reserve, anticipating that proximity to Urban Villages signals future upzoning in neighboring areas, making it rational to wait for higher-density approvals before committing capital. I find the first reason more compelling because San Jose is unlikely to upzone more areas when existing Urban Villages are not yet completed and because upzoning is rare in San Jose (Gabbe 2019). The directly upzoned area result indicates that even planned construction within Urban Villages did not produce more permitted housing units, suggesting that projects are either unapproved or that the change in permitted housing unit count is too few to register statistically.

This contradicts my hypothesis that neighboring areas would see the same amount of activity as before the 2011 Urban Village announcement. The finding also raises a question: if fewer units are being permitted, is the existing housing stock changing as well?

6.3 Housing Units

To test whether the permitted unit decline translated into a change in actual housing supply in neighboring areas, I examined total housing units per tract. The table below presents results across all six models.

Table 5: Effect of Urban Village Upzoning on Housing Units (Lagged Outcome by 4 Years)

	Housing Units t+4 (Levels)			**Housing Units t+4 (Log)**		
	(1)Neighbor	***(2)Direct***	***(3)Combined***	***(4)Neighbor***	***(5)Direct***	***(6)Combined***
Upzone × Post	—	-52.053 (36.013)	-58.835 (38.066)	—	-0.018 (0.017)	-0.020 (0.017)
Neighbor Upzone × Post	-58.647 (40.901)	—	-59.763 (41.293)	-0.015 (0.015)	—	-0.015 (0.015)
Median Income (log)	254.11** (105.56)	253.90** (106.31)	257.42** (106.61)	0.080** (0.040)	0.080** (0.040)	0.081** (0.040)
Population (log)	968.07*** (333.23)	981.06*** (344.67)	968.06*** (332.69)	0.288*** (0.094)	0.291*** (0.097)	0.288*** (0.094)
Observations	1,940	1,940	1,940	1,940	1,940	1,940
R^2 (Within)	0.265	0.248	0.265	0.172	0.169	0.172
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Treatment year is fixed at 2011 (policy announcement). Outcome variable is housing units measured 4 years after each observation year (t+4), reflecting the average California production timeline for market-rate apartments. Comparison group is census tracts 0.5-1.5 miles from upzoned areas. Reduced observations reflect the loss of the final 4 years of outcome data due to the forward shift.*

Neither neighboring nor upzoned areas show any statistically significant change. In neighboring areas, the log coefficient is -0.015 with a p-value of 0.315, as seen in model (4). Both levels and log models, along with individual and combined models, are consistent in neighboring areas, making null results robust. The log coefficient for upzoned areas is -0.018 with a p-value of 0.280, as seen in model (5).

The null result for neighboring areas confirms my hypothesis that Urban Villages would not spur housing construction outside their boundaries. The finding contrasts with that of Tanrisever's Los Angeles study, where neighboring areas experienced delayed but positive construction spillovers (Tanrisever 2024). I suspect the difference lies in upzoning's effect on new residential development in directly upzoned areas. Los Angeles' TOC generated actual housing construction while San Jose's Urban Villages did not. The comparison suggests that spillover effects on housing supply may depend not on upzoning itself but on whether that upzoning succeeds in spurring residential development. Future research could examine whether the spillovers' effect depends on a city's success in increasing housing construction through upzoning. On the front of upzoned areas, the absence of any housing unit change is consistent with Gabbe et al.'s findings through 2019 and suggests the years since did not materially change the construction trend (Gabbe et al. 2021).

Regarding neighboring areas, the gap between the decrease in housing units permitted in Section 6.2 and the consistency in housing units here is reasonable. The most likely explanation is that a reduction in annual new construction permit activity does not affect the existing housing stock. If new construction does not occur, existing homes will not be demolished if they can still house occupants, an idea that can be tested by analyzing whether remodeling permits increase in neighboring areas with Urban Villages. A secondary possibility is that the four-year construction lag assumed here is too short for San Jose, where planning and build timelines may run longer because of affordable housing requirements. To account for this, I ran a 6-year lag, and I found statistically insignificant results across five of the six models. However, for model (2), upzoned areas saw a 64 housing unit decrease after the policy announcement, likely reflecting the demolition necessary before redevelopment in Urban Villages. Full results can be found in Table B6 in Appendix B.

6.4 Median Home Value

Having found no effect on construction, I turned to whether Urban Villages affected property values. The table below presents results across all six models.

Table 6: Effect of Urban Village Upzoning on Median Home Value

	Median Home Value (Levels)			Median Home Value (Log)		
	(1)Neighbor	*(2)Direct*	*(3)Combined*	*(4)Neighbor*	*(5)Direct*	*(6)Combined*
Upzone × Post	—	-38,030* (22,070)	-35,660 (25,600)	—	-0.075** (0.029)	-0.072** (0.034)
Neighbor Upzone × Post	27,450*** (9,857)	—	27,060*** (9,870)	0.034** (0.016)	—	0.033** (0.016)
Median Income (log)	26,700 (23,860)	31,980 (24,540)	28,530 (24,040)	0.089* (0.050)	0.097* (0.052)	0.093* (0.051)
Population (log)	-39,470 (40,640)	-45,390 (41,320)	-38,850 (40,490)	0.029 (0.047)	0.022 (0.050)	0.030 (0.048)
Observations	1,698	1,698	1,698	1,698	1,698	1,698
R^2 (Within)	0.069	0.018	0.069	0.107	0.074	0.107
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Levels models report coefficients in USD. All models include entity and time fixed effects with log-transformed controls for median income and population. Treatment defined by Urban Village policy announcement (2011). Comparison group is census tracts 0.5–1.5 miles from upzoned areas. Observations reduced to 1,698 reflecting available ACS home value data across the study period.*

Neighboring areas show a statistically significant positive effect: the log coefficient is 0.034 with a p-value of 0.036, as seen in model (4). The levels and log models are significant for neighboring areas, and results hold across individual and combined specifications, making this finding one of the most robust in the study. Directly upzoned areas show a statistically significant negative effect: the log coefficient is -0.075 with a p-value of 0.011, as seen in model (5). However, the direct upzoning level in model (2) is only marginally significant, so estimates for home value changes should be interpreted with caution, as they may not represent a robust or stable effect.

Neighboring areas saw home values rising 3.4% ($e^{0.0336} - 1 = 0.0342$), or $27,450, confirming my hypothesis. Two mechanisms are often mentioned in the literature. One is that homeowners may anticipate future upzoning of their own parcels, raising expected sale prices. This, however, is unlikely to be the case in San Jose, as the direct effect of upzoning actually decreased home value by 7.2% ($e^{-0.0747} - 1 = -0.0720$). The more likely mechanism is that homeowners perceive improved access to amenities like restaurants and retail space through the construction of Urban Villages, all without facing the density and disruption of being directly in the development zone. In other words, they get the benefits of upzoning by being nearby, without facing the costs. The amenity-access interpretation carries more weight because it does not require homeowners to have sophisticated knowledge of future zoning plans. It also aligns with NIMBY rhetoric that homeowners do not necessarily oppose development but rather only development in their own backyards. This result is consistent with my hypothesis and mirrors the home value spillovers Tanrisever observed in Los Angeles, even in the absence of construction (Tanrisever 2024).

Upzoned areas saw self-reported home values fall by 7.2%, or roughly $38,030. Because housing supply did not increase, this decline is unlikely to reflect a supply-side price correction. Instead, it more likely reflects homeowner sentiment: residents in Urban Village areas may view the government designation as a threat to neighborhood character rather than an opportunity.

Again, this is consistent with NIMBY resistance to upzoning, particularly given that many Urban Villages include affordable housing, which some existing homeowners may view as undesirable.

6.5 Median Rent

Next, I examined median rent to test whether the price appreciation observed in neighboring home values translated into the rental market. This outcome variable, however, should be interpreted with caution. Rent is self-reported in the ACS and notoriously inconsistent: some respondents include utilities while others do not, and reported figures may reflect an individual's share of rent rather than the unit's total cost. These variations mean that tract-level median rent captures general price trends but cannot be treated as a precise market rate. The table below presents results across all six models.

Table 7: Effect of Urban Village Upzoning on Median Rent

	Median Rent (Levels)			**Median Rent (Log)**		
	(1)Neighbor	***(2)Direct***	***(3)Combined***	***(4)Neighbor***	***(5)Direct***	***(6)Combined***
Upzone × Post	—	202.62 (122.83)	203.74 (123.80)	—	0.088* (0.045)	0.091** (0.044)
Neighbor Upzone × Post	-0.309 (43.889)	—	6.900 (44.444)	0.014 (0.025)	—	0.017 (0.025)
Median Income (log)	86.006 (110.27)	73.094 (106.89)	72.608 (107.72)	0.056 (0.058)	0.051 (0.057)	0.050 (0.058)
Population (log)	283.37** (132.77)	285.66** (134.79)	287.61** (134.20)	0.185** (0.084)	0.182** (0.086)	0.187** (0.084)
Observations	1,399	1,399	1,399	1,399	1,399	1,399
R^2 (Within)	0.100	0.117	0.125	0.144	0.125	0.163
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Levels models report coefficients in USD per month. All models include entity and time fixed effects with log-transformed controls for median income and population. Treatment defined by Urban Village policy announcement (2011). Comparison group is census tracts 0.5–1.5 miles from upzoned areas. Observations reduced to 1,399 reflecting available ACS rent data across the study period.*

Neighboring areas show no statistically significant effect across either specification: the log coefficient is 0.014 with a p-value of 0.573, as seen in model (4). Neighboring area results are consistent across levels and log and hold across individual and combined models. Directly upzoned areas show a marginally significant log coefficient of 0.088 with a p-value of 0.052, as seen in model (5), but the levels model for the same group is not significant. The combined model is statistically significant, producing a log coefficient of 0.091 with a p-value of 0.040, as seen in model (6). The divergence between levels and log results for upzoned areas means that the results should be interpreted cautiously.

In directly upzoned areas, rent prices increased by 9.2% ($e^{0.0883} - 1 = 0.0923$), a marginally significant but striking contrast to the 7.2% home value decrease found in Section 6.4. The divergence likely reflects a difference in who sets each price and why. Home values are self-reported by owner-occupants, who tend to be the NIMBY residents most sensitive to densification and neighborhood change. Rent prices, by contrast, are set by landlords who are primarily investors rather than residents. Urban Villages are often transit-accessible, commercial areas that naturally attract institutional and professional real estate investors who track zoning changes and actively manage their properties. These landlords may view the Urban Village designation as a positive demand signal and price accordingly, even without visible construction. With some of the highest incomes and housing demand in the country, many renters are likely able and willing to absorb a 9.2% rent increase to live in amenity-rich, transit-accessible upzoned areas, regardless of whether construction ever materializes. Because housing units did not increase over this period, this pattern is consistent with demand-driven rent appreciation rather than a response to supply tightening.

Neighboring areas tell a different story. Despite the home value appreciation documented in Section 6.4, rents did not adjust, contradicting my hypothesis. One possible explanation is that neighboring landlords are less likely to follow local upzoning announcements that do not directly affect their properties. Without tangible changes, neighboring landlords are less likely to consider policy changes when setting their monthly rent, in contrast to landlords in directly upzoned areas. Consequently, landlord-set rent prices did not increase while self-reported home values did appreciate.

7 Conclusion

The apricots and prunes that once decorated the landscape of West San Jose, the quiet suburban neighborhood I call home, are decades removed, now substituted with parcels of single-family residences. The valley that San Jose calls home is no longer the Valley of Heart's Delight but one plagued by a housing affordability crisis. In November 2011, San Jose announced one of its solutions, Urban Villages. However, new construction in upzoned areas failed to materialize. No new construction in neighboring areas occurred either.

This paper explores how upzoning affected the city over 15 years. The simple answer is: not much. As of November 2025, 66 areas were designated Urban Villages. However, only two are under development, and only 14 were approved. I offer a few nuances:

First, upzoning did not generate positive spillover effects, like increased construction, into neighboring areas. If anything, it may suppress development. Neighboring areas saw a 19.4% decrease in housing units permitted following the Urban Villages announcement, suggesting that upzoning may absorb growth from neighboring areas. I suspect that this is because Urban Villages failed to produce new construction in directly upzoned areas, in contrast to Los Angeles (Tanrisever 2024).

Second, Urban Villages increased the perceived value of homes in neighboring areas by 3.4% while suppressing them in upzoned areas by 7.2%, suggesting that upzonings can depress and elevate home values at the same time.

Third, in directly upzoned areas, Urban Villages may have driven rent prices up by approximately 9.2% despite no significant amounts of new housing. This suggests that landlords increased rents because of Urban Villages, but many renters do not yet reap the promised benefits of increased access to amenities. When those benefits will come to fruition is as certain as when the apricot and prune trees from the Valley of Heart's Delight will bear fruit.

San Jose's wealth likely moderates some of these effects. For example, while San Jose homeowners may continue to renovate their properties and sell at a windfall profit, disinvestment may affect less affluent cities rather than becoming a slight property depreciation nuisance. This hypothesis is one worth testing.

The upzoning literature would benefit from examining an alternative set of cities, where we might expect outcomes to be different because of the market factors, land use policies, population pressures, and other factors at play. For example, research into unsuccessful upzonings could be beneficial. Another is focusing on less affluent cities, which could help us understand how city wealth shapes upzoning results. By analyzing upzoning's effect on neighboring areas, researchers can contextualize upzoning's effect on different neighborhoods.

These takeaways reveal that, while often implemented with good intentions, upzoning carries risks. Housing construction may not only stagnate but also decrease in neighboring areas and could, perhaps more importantly, eventually affect the city's housing supply. Upzoning may unconsciously select the winners and losers of property valuations, and renters may be forced to pay more despite not receiving the promised benefits of upzoning. No city that upzones hopes for failure. Yet cities like San Jose grapple with that reality. Looking forward, when cities decide whether to upzone, evaluating how upzoning occurs, the likelihood of success, and the city-specific risks is the responsible action. If that occurs, a young boy in West San Jose may one day be able to gently reach for the trees for a bite worth the wait. Like the Valley of Heart's Delight.

8 References

Bronin, Sara C. 2024. *Key to the City: How Zoning Shapes Our World.* First edition. W. W. Norton.

City of San Diego. 2026. "Complete Communities." https://www.sandiego.gov/complete-communities.

City of San José. 2025a. "Envision San José 2040 General Plan." https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/citywide-planning/envision-san-jos-2040-general-plan.

City of San José. 2025b. "Opportunity Housing." https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/citywide-planning/opportunity-housing.

City of San José. 2025c. "Urban Villages." https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/citywide-planning/urban-villages.

City of San José. 2025d. "Yearly Permit Data Reports." https://csjpbce.sanjoseca.gov/reportviewer/getreports.asp?rt=py.

City of San José. 2025e. "Zoning Code - Municipal Code Title 20." https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/ordinances-proposed-updates/zoning-code-title-20.

Cox, Wendell. 2025. *Demographia International Housing Affordability, 2025 Edition.* May 13.

Duncan, Michael. 2011. "The Impact of Transit-Oriented Development on Housing Prices in San Diego, CA." *Urban Studies* 48 (1): 101–27. https://doi.org/10.1177/0042098009359958.

Freemark, Yonah. 2020. "Upzoning Chicago: Impacts of a Zoning Reform on Property Values and Housing Construction." *Urban Affairs Review* 56 (3): 758–89. https://doi.org/10.1177/1078087418824672.

Gabbe, C. J. 2019. "Local Regulatory Responses during a Regional Housing Shortage: An Analysis of Rezonings in Silicon Valley." *Land Use Policy* 80 (January): 79–87. https://doi.org/10.1016/j.landusepol.2018.09.035.

Gabbe, C. J., Michael Kevane, and William A. Sundstrom. 2021. "The Effects of an 'Urban Village' Planning and Zoning Strategy in San Jose, California." *Regional Science and Urban Economics* 88 (May): 103648. https://doi.org/10.1016/j.regsciurbeco.2021.103648.

Kirchhoff, Suzanne. 2011. "The Construction Sector in the U.S. Economy." Congressional Research Service, May 3. https://www.everycrsreport.com/reports/R41806.html.

Liao, Hsi-Ling. 2026. "The Effect of Rezoning on Local Housing Supply and Demand: Evidence from New York City." *Regional Science and Urban Economics* 117 (February): 104188. https://doi.org/10.1016/j.regsciurbeco.2025.104188.

Matthews, John W., and Geoffrey K. Turnbull. 2007. "Neighborhood Street Layout and Property Value: The Interaction of Accessibility and Land Use Mix." Springer Nature Link, The Journal of Real Estate Finance and Economics, July 3. https://link.springer.com/article/10.1007/s11146-007-9035-9.

"New Privately-Owned Housing Units Started: Total Units." 2026. February 18. https://fred.stlouisfed.org/series/HOUST.

Rich, Robert. 2013. "The Great Recession." Federal Reserve History, November 22. https://www.federalreservehistory.org/essays/great-recession-of-200709.

Rollet, Vincent. 2025. "Zoning and the Dynamics of Urban Redevelopment." Preprint, August.

San Jose CA GIS Open Data. 2025. "Growth Areas 2040." https://gisdata-csj.opendata.arcgis.com/datasets/23b5b6f7d81440d3bbc83b30b5e6cdb8_520/explore?location=37.332044%2C-121.880204%2C12.

Tanrisever, Idil. 2024. "Upzoning and Neighborhood Change: Evidence from Los Angeles." SSRN Scholarly Paper No. 5010930. Social Science Research Network, September 30. https://doi.org/10.2139/ssrn.5010930.

"The Outlook for US Housing Supply and Affordability." 2025. October 21. https://www.goldmansachs.com/insights/articles/the-outlook-for-us-housing-supply-and-affordability.

U.S. Census Bureau. 2026. "American Community Survey 5-Year Estimates." https://data.census.gov/table/ACSDP1Y2024.DP05?g=310XX00US41940.

Ward, Jason M., and Luke Schlake. 2025. *The High Cost of Producing Multifamily Housing in California: Evidence and Policy Recommendations.* https://www.rand.org/pubs/research_reports/RRA3743-1.html.

9 Appendix A: Descriptive Statistics

Table A1: Descriptive Statistics — Pooled Panel Summary

Variable	Obs.	Mean	Std. Dev.	Min	P25	Median	P75	Max
Urban Village								
Permits Issued	150	2.4	7.4	0	0	0	1.75	58
Housing Units Permitted	150	17.4	56.0	0	0	0	2	305
Housing Units	130	1800.8	503.1	857	1,485.5	1,763	2,227.8	2,601
Median Home Value	105	$912,325	379,262	$356,700	$599,400	$849,500	$1,103,600	$1,989,600
Median Rent	124	$2,100	635	$1,027	$1,578	$2,107	$2,654	$3,437
Median Income	126	$59,299	33,877	$17,231	$36,236	$52,390	$72,468	$243,720
Population	130	4611.2	1131.8	2,136	3,567	4,774	5,564	6,772
Neighboring Area								
Permits Issued	1,920	1.5	4.6	0	0	0	2	102
Housing Units Permitted	1,920	6.8	40.3	0	0	0	2	791
Housing Units	1,835	1662.2	516.6	597	1,271	1,610	2,043.5	3,403
Median Home Value	1,777	$800,889	350,517	$83,700	$561,000	$723,600	$986,200	$1,990,200
Median Rent	1,644	$1,937	598	$430	$1,464	$1,841	$2,342	$3,482
Median Income	1,789	$49,404	31,808	$4,252	$31,106	$41,833	$56,370	$227,279
Population	1,835	4875.9	1360.8	2,379	3,879	4,771	5,733	9,412
Other Area								
Permits Issued	1,290	1.7	5.2	0	0	0	2	121
Housing Units Permitted	1,290	7.6	42.4	0	0	0	2	607
Housing Units	1,265	1482.8	663.3	301	1,082	1,361	1,716	6,044
Median Home Value	1,227	$786,126	371,375	$73,500	$520,550	$740,000	$978,000	$1,991,700
Median Rent	1,010	$2,085	677	$461	$1,612	$1,981	$2,620	$3,490
Median Income	1,225	$54,110	37,939	$16,700	$30,397	$42,917	$62,891	$248,750
Population	1,265	4694.8	1538.1	854	3,849	4,452	5,513	12,242

Notes: Urban Village tracts are directly upzoned under the San Jose Urban Village Plan; Neighboring Area tracts lie within 0.5 miles of an Urban Village boundary; Other Area tracts (comparison group) lie 0.5–1.5 miles from an Urban Village boundary. ACS variables use midpoint years (release year minus 2). Housing Units reports the lagged outcome (construction year minus 4). Permits Issued and Housing Units Permitted reflect actual calendar years. Source: American Community Survey 5-year estimates; City of San Jose permit database.

Table A2: Descriptive Statistics — Permits Issued (Per Tract-Year)

Area Type/Year	Obs.	Mean	Std. Dev.	Min	P25	Median	P75	Max
Urban Village								
2010	10	0.20	0.63	0	0	0	0	2
2011	10	0.20	0.42	0	0	0	0	1
2012	10	1.60	3.37	0	0	0	0	8
2013	10	1.40	3.27	0	0	0	0	10
2014	10	0	0.00	0	0	0	0	0
2015	10	0.10	0.32	0	0	0	0	1
2016	10	0	0.00	0	0	0	0	0
2017	10	0.80	1.32	0	0	0	1	4
2018	10	3.30	5.46	0	0	1	3.50	17
2019	10	6.70	14.81	0	0	1	4.50	48
2020	10	5.80	12.56	0	0	1	2.50	40
2021	10	6.90	18.02	0	0	1	2	58
2022	10	2.30	2.11	0	0.25	2.50	3	6
2023	10	2.20	3.58	0	0	0.50	3.25	11
2024	10	3.80	6.11	0	0	2	4.50	20
Neighboring Area								
2010	128	0.45	2.27	0	0	0	0	22
2011	128	0.30	1.24	0	0	0	0	11
2012	128	0.66	3.60	0	0	0	0	39
2013	128	0.99	4.79	0	0	0	0	47
2014	128	2.23	11.99	0	0	0	1	102
2015	128	0.95	5.93	0	0	0	0	65
2016	128	0.84	1.77	0	0	0	1	10
2017	128	0.89	2.52	0	0	0	1	20
2018	128	1.41	2.34	0	0	1	2	15
2019	128	2.16	4.51	0	0	1	3	46
2020	128	2.03	3.36	0	0	1	2.25	31
2021	128	2.30	2.74	0	0	1	3	15
2022	128	2.43	2.84	0	1	2	3	16
2023	128	2.43	4.00	0	1	1	3	39
2024	128	2.48	3.08	0	0	2	3	20
Other Area								
2010	86	0.26	1.00	0	0	0	0	7
2011	86	0.49	1.54	0	0	0	0	12
2012	86	1.40	6.19	0	0	0	0	49
2013	86	1.36	5.67	0	0	0	0	49

2014	86	1.66	4.39	0	0	0	1	32
2015	86	1.23	3.53	0	0	0	1	24
2016	86	2.05	13.11	0	0	0	0	121
2017	86	1.52	3.67	0	0	0	1	25
2018	86	1.43	3.91	0	0	0.50	1	34
2019	86	2.91	7.37	0	0	1	3	66
2020	86	1.91	2.75	0	0	1	3	18
2021	86	2.40	3.45	0	0	1.50	3	25
2022	86	2.46	3.07	0	0	1	3.75	15
2023	86	2.15	2.25	0	0	2	3	10
2024	86	2.37	3.14	0	0	1	3.75	15

Notes: Years reflect actual calendar years. Urban Village tracts are directly upzoned; Neighboring Area tracts lie within 0.5 miles; Other Area tracts (comparison group) lie 0.5–1.5 miles from an Urban Village boundary. Obs. = number of census tracts with non-missing observations. Source: City of San Jose permit database.

Table A3: Descriptive Statistics — Housing Units Permitted (Per Tract-Year)

Area Type/Year	Obs.	Mean	Std. Dev.	Min	P25	Median	P75	Max
Urban Village								
2010	10	10.80	34.15	0	0	0	0	108
2011	10	0.20	0.42	0	0	0	0	1
2012	10	29.70	78.80	0	0	0	0	250
2013	10	5	14.46	0	0	0	0	46
2014	10	0	0.00	0	0	0	0	0
2015	10	0.10	0.32	0	0	0	0	1
2016	10	0	0.00	0	0	0	0	0
2017	10	27.50	84.51	0	0	0	1.75	268
2018	10	32.80	83.97	0	0	1	14.75	270
2019	10	46.20	88.27	0	0	1	36.75	257
2020	10	5.80	12.56	0	0	1	2.50	40
2021	10	19.10	36.05	0	0	1.50	14	108
2022	10	13.70	36.36	0	0.25	2.50	4.50	117
2023	10	26.40	77.24	0	0	0.50	4	246
2024	10	43.90	97.54	0	0	2	15.75	305
Neighboring Area								
2010	128	3.18	16.90	0	0	0	0	139
2011	128	0.56	2.59	0	0	0	0	25
2012	128	6.38	33.97	0	0	0	0	290
2013	128	3.87	15.36	0	0	0	0	103
2014	128	8.31	50.84	0	0	0	1	530
2015	128	3.27	21.24	0	0	0	0	225
2016	128	5.02	24.53	0	0	0	1	183
2017	128	12.09	64.78	0	0	0	1	640
2018	128	7.62	39.06	0	0	1	2	381
2019	128	9.65	58.80	0	0	1	3	616
2020	128	5.18	16.62	0	0	1	3	92
2021	128	4.55	16.19	0	0	1.50	3.25	148
2022	128	10.44	70.72	0	1	2	3	791
2023	128	13.74	57.67	0	1	1.50	3	542
2024	128	7.55	30.75	0	0	2	3	233
Other Area								
2010	86	7.81	55.00	0	0	0	0	498
2011	86	2.76	18.93	0	0	0	0	174
2012	86	11.02	66.63	0	0	0	0	582
2013	86	9.41	42.53	0	0	0	0	347
2014	86	17	72.28	0	0	0	1	554

2015	86	3.81	16.71	0	0	0	1	133
2016	86	5.59	28.45	0	0	0	0	202
2017	86	6.84	24.29	0	0	0	2	162
2018	86	8.17	41.57	0	0	0.50	1	330
2019	86	7.01	33.73	0	0	1	3	282
2020	86	10.80	66.80	0	0	1	3	607
2021	86	4.11	14.55	0	0	2	3	133
2022	86	5.30	26.76	0	0	1	3.75	249
2023	86	8.76	40.37	0	0	2	3	338
2024	86	5.14	26.46	0	0	1	3.75	246

Notes: Years reflect actual calendar years. Urban Village tracts are directly upzoned; Neighboring Area tracts lie within 0.5 miles; Other Area tracts (comparison group) lie 0.5–1.5 miles from an Urban Village boundary. Obs. = number of census tracts with non-missing observations. Source: City of San Jose permit database.

Table A4: Descriptive Statistics — Housing Units (Lagged Outcome by 4 Years)

Area Type/Year	Obs.	Mean	Std. Dev.	Min	P25	Median	P75	Max
Urban Village								
2004	7	1804.40	442.60	1,061	1513.50	2,071	2125.50	2,221
2005	7	1851.10	479.40	1,076	1521.50	2,114	2172.50	2,380
2006	7	1,850	470.80	1,086	1,524	2,114	2188.50	2,325
2007	7	1,854	476.50	1,072	1524.50	2,137	2223.50	2,273
2008	7	1870.10	486.40	1,077	1526.50	2,181	2245.50	2,289
2009	7	1892.70	501.00	1,070	1,545	2,190	2,282	2,335
2010	7	1,910	528.30	1,078	1,520	2,221	2309.50	2,412
2011	7	1936.70	555.90	1,088	1518.50	2,210	2,355	2,512
2012	7	1933.90	563.70	1,074	1512.50	2,207	2,361	2,509
2013	7	1949.30	581.60	1,090	1,511	2,176	2,378	2,601
2014	12	1648.30	541.00	864	1235.30	1605.50	2090.50	2,476
2015	12	1677.30	536.50	857	1,237	1,614	2156.50	2,451
2016	12	1698.40	530.80	859	1,328	1,618	2190.80	2,454
2017	12	1746.60	537.50	885	1392.50	1645.50	2238.80	2,530
2018	12	1740.70	526.00	867	1,416	1,676	2137.50	2,549
Neighboring Area								
2004	118	1620.60	505.50	653	1,237	1,587	1992.30	2,750
2005	118	1619.20	500.60	684	1,217	1,570	1991.30	2,730
2006	118	1627.10	501.10	664	1236.80	1588.50	2,015	2,763
2007	118	1636.10	505.20	655	1254.80	1588.50	2036.80	2,783
2008	118	1641.50	504.40	653	1269.30	1,577	2,028	2,783
2009	118	1651.30	503.00	663	1274.50	1592.50	2037.80	2,746
2010	118	1657.40	506.20	652	1266.50	1,601	2037.50	2,756
2011	118	1,665	508.10	635	1260.80	1,605	2050.30	2,780
2012	118	1665.80	513.90	643	1263.50	1,610	2031.50	2,797
2013	118	1673.60	521.90	620	1273.80	1,638	2060.50	2,812
2014	131	1671.70	515.50	597	1300.50	1,649	2,067	3,100
2015	131	1686.20	528.90	619	1295.50	1,657	2141.50	3,064
2016	131	1688.80	534.70	623	1290.50	1,667	2,108	3,061
2017	131	1702.30	545.90	629	1,282	1,682	2,105	3,209
2018	131	1,710	557.50	648	1298.50	1,674	2,101	3,403
Other Area								
2004	78	1384.20	494.50	301	1,098	1,327	1,603	2,957
2005	78	1391.50	494.50	347	1095.30	1328.50	1633.30	2,914
2006	78	1395.40	497.00	371	1083.80	1327.50	1,631	2,939
2007	78	1401.50	498.30	389	1,076	1350.50	1662.80	2,942
2008	78	1418.30	511.70	392	1086.80	1,353	1,647	2,951

2009	78	1443.20	533.60	395	1088.30	1353.50	1693.50	2,967
2010	78	1468.10	578.70	400	1085.50	1373.50	1717.50	3,696
2011	78	1499.70	664.20	397	1097.30	1,358	1733.80	4,876
2012	78	1508.90	694.90	390	1102.80	1,384	1731.30	5,379
2013	78	1529.20	750.00	394	1,104	1376.50	1,712	5,824
2014	97	1520.50	736.10	410	1,088	1,354	1,721	5,915
2015	97	1541.40	759.20	403	1,068	1,383	1,724	5,941
2016	97	1547.60	788.00	406	1,059	1,372	1,747	6,044
2017	97	1556.70	800.80	374	1,062	1,397	1,800	6,020
2018	97	1,560	817.50	348	1,052	1,379	1,730	6,027

Notes: Years shown reflect the construction outcome year (ACS midpoint year minus 4), applying a 4-year lag to account for the average California production timeline for market-rate apartments. Urban Village tracts are directly upzoned; Neighboring Area tracts lie within 0.5 miles; Other Area tracts (comparison group) lie 0.5–1.5 miles from an Urban Village boundary. Source: American Community Survey 5-year estimates.

Table A5: Descriptive Statistics — Median Home Value (Dollars)

Area Type/Year	Obs.	Mean	Std. Dev.	Min	P25	Median	P75	Max
Urban Village								
2008	5	$641,380	116,303	$535,100	$542,600	$599,400	$745,200	$784,600
2009	5	$599,980	118,805	$499,100	$502,800	$541,100	$715,000	$741,900
2010	5	$549,480	147,123	$395,800	$445,700	$493,800	$700,400	$711,700
2011	5	$524,220	156,462	$356,700	$418,000	$466,000	$683,600	$696,800
2012	5	$528,940	171,204	$368,100	$386,800	$465,800	$703,000	$721,000
2013	7	$739,014	337,888	$384,500	$469,200	$724,200	$942,800	$1,240,400
2014	7	$813,214	360,292	$425,100	$522,250	$810,700	$1,019,600	$1,373,000
2015	7	$901,943	393,914	$518,100	$590,050	$849,500	$1,118,600	$1,528,700
2016	7	$1,009,886	441,268	$572,500	$689,000	$904,800	$1,273,700	$1,666,500
2017	7	$1,097,914	464,163	$596,300	$774,100	$1,003,500	$1,376,250	$1,784,900
2018	11	$1,068,100	470,313	$584,400	$776,800	$981,100	$1,091,850	$1,989,600
2019	8	$964,950	197,368	$676,100	$820,350	$984,350	$1,098,500	$1,223,000
2020	8	$1,131,925	227,389	$887,200	$1,006,325	$1,064,700	$1,232,575	$1,552,600
2021	9	$1,168,256	284,536	$839,700	$937,400	$1,105,900	$1,294,400	$1,697,700
2022	9	$1,177,989	297,630	$853,900	$959,700	$1,091,300	$1,339,300	$1,737,100
Neighboring Area								
2008	116	$604,916	165,390	$84,800	$515,650	$606,550	$709,800	$945,000
2009	116	$577,081	171,347	$83,700	$459,250	$586,500	$682,350	$962,500
2010	116	$548,726	175,264	$103,800	$424,675	$561,650	$655,575	$971,600
2011	115	$537,877	185,784	$100,500	$396,750	$553,500	$644,950	$991,600
2012	113	$542,974	172,038	$103,600	$405,700	$561,900	$659,500	$938,600
2013	117	$600,654	206,618	$118,800	$444,700	$597,500	$725,000	$1,190,900
2014	116	$658,760	221,554	$123,300	$498,325	$647,650	$786,225	$1,357,300
2015	117	$733,648	241,141	$155,400	$568,500	$712,900	$868,200	$1,520,100
2016	118	$809,903	273,392	$170,000	$615,750	$799,650	$951,125	$1,623,800
2017	117	$885,511	296,544	$239,200	$672,100	$863,600	$1,044,800	$1,692,400
2018	129	$933,503	314,843	$148,100	$737,600	$899,800	$1,114,300	$1,845,700
2019	126	$995,668	311,253	$236,800	$791,500	$955,450	$1,171,775	$1,924,300
2020	123	$1,137,407	336,423	$160,800	$919,150	$1,123,700	$1,355,200	$1,990,200
2021	119	$1,163,323	338,170	$167,300	$943,700	$1,146,600	$1,339,050	$1,931,500
2022	119	$1,204,109	356,874	$174,600	$935,500	$1,193,100	$1,488,450	$1,944,400
Other Area								
2008	75	$611,735	188,709	$74,000	$528,950	$578,900	$740,800	$977,700
2009	75	$571,445	192,262	$75,100	$463,200	$533,900	$701,500	$968,100
2010	77	$538,458	198,940	$74,500	$404,300	$507,300	$677,900	$963,700
2011	77	$525,657	204,502	$73,500	$380,000	$488,400	$677,700	$952,400
2012	77	$542,618	203,982	$74,100	$391,100	$506,900	$696,100	$978,600

2013	78	$590,765	221,107	$78,000	$429,050	$553,700	$769,175	$1,168,800
2014	78	$642,454	234,544	$85,600	$481,525	$604,400	$847,200	$1,266,600
2015	77	$705,665	242,320	$94,700	$550,400	$663,000	$914,300	$1,382,700
2016	77	$771,338	260,994	$107,900	$596,700	$729,200	$992,700	$1,439,900
2017	77	$835,843	280,195	$122,200	$640,300	$822,100	$1,020,000	$1,549,700
2018	95	$884,181	345,974	$119,000	$678,950	$853,500	$1,129,450	$1,843,500
2019	95	$959,195	376,068	$128,800	$715,950	$906,100	$1,182,500	$1,967,800
2020	92	$1,082,171	404,964	$188,100	$849,750	$1,037,950	$1,259,050	$1,950,500
2021	91	$1,134,307	430,072	$204,000	$883,600	$1,091,700	$1,361,000	$1,991,700
2022	86	$1,162,063	407,238	$220,400	$934,450	$1,110,300	$1,357,800	$1,978,100

Notes: ACS variables are drawn from the American Community Survey 5-year estimates; years shown reflect the midpoint of the 5-year survey window (release year minus 2). Urban Village tracts are directly upzoned under the San Jose Urban Village Plan; Neighboring Area tracts lie within 0.5 miles of an Urban Village boundary; Other Area tracts (comparison group) lie 0.5–1.5 miles from an Urban Village boundary. Obs. = number of census tracts with non-missing observations. Source: American Community Survey 5-year estimates.

Table A6: Descriptive Statistics — Median Rent (Dollars Per Month)

Area Type/Year	Obs.	Mean	Std. Dev.	Min	P25	Median	P75	Max
Urban Village								
2008	7	$1,358	327	$1,034	$1,125	$1,239	$1,580	$1,823
2009	7	$1,433	298	$1,027	$1,248	$1,386	$1,625	$1,871
2010	7	$1,487	301	$1,119	$1,268	$1,430	$1,698	$1,929
2011	6	$1,449	285	$1,119	$1,265	$1,408	$1,577	$1,911
2012	5	$1,441	150	$1,201	$1,404	$1,483	$1,531	$1,585
2013	7	$1,820	567	$1,203	$1,515	$1,631	$1,987	$2,904
2014	7	$1,946	589	$1,301	$1,547	$1,830	$2,201	$3,000
2015	7	$2,090	671	$1,399	$1,577	$1,992	$2,443	$3,199
2016	7	$2,249	633	$1,469	$1,915	$2,092	$2,566	$3,218
2017	7	$2,388	635	$1,562	$2,042	$2,230	$2,747	$3,351
2018	11	$2,163	489	$1,467	$1,785	$2,125	$2,383	$3,143
2019	11	$2,313	457	$1,767	$1,991	$2,316	$2,536	$3,281
2020	12	$2,507	426	$1,806	$2,240	$2,509	$2,713	$3,437
2021	12	$2,724	416	$2,159	$2,340	$2,744	$2,957	$3,431
2022	11	$2,644	343	$2,152	$2,297	$2,723	$2,876	$3,143
Neighboring Area								
2008	103	$1,354	279	$653	$1,158	$1,315	$1,546	$1,993
2009	100	$1,405	290	$678	$1,195	$1,380	$1,642	$1,979
2010	97	$1,412	279	$638	$1,214	$1,427	$1,631	$1,954
2011	97	$1,454	268	$720	$1,263	$1,437	$1,665	$1,979
2012	91	$1,463	270	$506	$1,289	$1,468	$1,711	$1,983
2013	117	$1,688	442	$430	$1,372	$1,660	$1,972	$3,078
2014	116	$1,795	440	$816	$1,455	$1,729	$2,080	$3,079
2015	114	$1,909	468	$854	$1,578	$1,794	$2,252	$3,212
2016	114	$2,011	489	$743	$1,670	$1,912	$2,314	$3,420
2017	111	$2,116	504	$810	$1,742	$2,095	$2,406	$3,388
2018	121	$2,218	489	$822	$1,860	$2,214	$2,615	$3,474
2019	118	$2,313	493	$933	$1,972	$2,258	$2,683	$3,462
2020	115	$2,456	499	$1,159	$2,139	$2,460	$2,879	$3,454
2021	116	$2,516	486	$1,167	$2,189	$2,456	$2,858	$3,478
2022	114	$2,545	494	$1,270	$2,151	$2,507	$2,908	$3,482
Other Area								
2008	59	$1,460	361	$576	$1,232	$1,431	$1,768	$2,000
2009	57	$1,501	341	$594	$1,312	$1,563	$1,784	$1,962
2010	49	$1,444	377	$461	$1,238	$1,456	$1,717	$1,992
2011	53	$1,494	342	$590	$1,284	$1,468	$1,791	$1,995
2012	49	$1,521	309	$585	$1,345	$1,542	$1,799	$1,932

2013	77	$1,861	489	$593	$1,508	$1,806	$2,152	$3,288
2014	78	$1,938	516	$598	$1,582	$1,950	$2,331	$3,429
2015	75	$2,055	570	$599	$1,711	$2,057	$2,437	$3,398
2016	75	$2,218	588	$638	$1,831	$2,218	$2,667	$3,453
2017	71	$2,292	611	$686	$1,917	$2,242	$2,774	$3,383
2018	89	$2,394	627	$750	$1,944	$2,469	$2,837	$3,483
2019	84	$2,486	601	$854	$1,976	$2,574	$2,956	$3,485
2020	70	$2,588	562	$919	$2,238	$2,606	$3,072	$3,463
2021	62	$2,631	606	$898	$2,259	$2,707	$3,142	$3,490
2022	62	$2,674	589	$986	$2,254	$2,772	$3,181	$3,470

Notes: ACS variables are drawn from the American Community Survey 5-year estimates; years shown reflect the midpoint of the 5-year survey window (release year minus 2). Urban Village tracts are directly upzoned under the San Jose Urban Village Plan; Neighboring Area tracts lie within 0.5 miles of an Urban Village boundary; Other Area tracts (comparison group) lie 0.5–1.5 miles from an Urban Village boundary. Obs. = number of census tracts with non-missing observations. Source: American Community Survey 5-year estimates.

10 Appendix B: Robustness Checks

Table B1: Robustness Check — Effect of Urban Village Upzoning on Permits Issued (1-Mile Band)

	Permits Issued (Levels)			Permits Issued (Log+1)		
	(1)Neighbor	***(2)Direct***	***(3)Combined***	***(4)Neighbor***	***(5)Direct***	***(6)Combined***
Upzone × Post	—	3.231 (2.465)	3.187 (2.470)	—	0.292 (0.329)	0.286 (0.330)
Neighbor Upzone × Post	0.440* (0.262)	—	0.339 (0.256)	0.053 (0.079)	—	0.043 (0.079)
Median Income (log)	0.147 (0.808)	0.097 (0.820)	0.094 (0.820)	0.011 (0.134)	0.007 (0.134)	0.006 (0.134)
Population (log)	-4.375*** (1.589)	-4.455*** (1.604)	-4.429*** (1.608)	-1.004*** (0.222)	-1.013*** (0.222)	-1.009*** (0.223)
Observations	2,794	2,794	2,794	2,794	2,794	2,794
R^2 (Within)	0.015	0.008	0.015	0.010	-0.002	0.009
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Robustness specification defines neighboring tracts as those within 1 mile of an Urban Village boundary, with comparison group tracts between 1 and 2 miles. Treatment defined by Urban Village policy announcement (2011). Log specification uses log(1+permits) transformation.*

Table B2: Robustness Check — Effect of Urban Village Upzoning on Housing Units Permitted (1-Mile Band)

	Housing Units Permitted (Levels)			Housing Units Permitted (Log+1)		
	(1)Neighbor	*(2)Direct*	*(3)Combined*	*(4)Neighbor*	*(5)Direct*	*(6)Combined*
Upzone × Post	—	8.489 (16.466)	8.589 (16.490)	—	0.264 (0.587)	0.265 (0.587)
Neighbor Upzone × Post	-0.490 (5.079)	—	-0.762 (5.082)	0.000 (0.122)	—	-0.008 (0.121)
Median Income (log)	-15.947** (6.919)	-16.100** (6.990)	-16.092** (6.990)	-0.168 (0.204)	-0.172 (0.206)	-0.172 (0.205)
Population (log)	-40.565 (26.100)	-40.653 (25.683)	-40.710 (26.067)	-1.662*** (0.413)	-1.666*** (0.407)	-1.667*** (0.412)
Observations	2,794	2,794	2,794	2,794	2,794	2,794
R^2 (Within)	-0.025	-0.024	-0.026	-0.034	-0.034	-0.035
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Robustness specification defines neighboring tracts as those within 1 mile of an Urban Village boundary, with comparison group tracts between 1 and 2 miles. Treatment defined by Urban Village policy announcement (2011). Log specification uses log(1+housing units) transformation.*

Table B3: Robustness Check — Effect of Urban Village Upzoning on Housing Units (1-Mile Band and Lagged Outcome)

	Housing Units t+4 (Levels)			Housing Units t+4 (Log)		
	(1)Neighbor	*(2)Direct*	*(3)Combined*	*(4)Neighbor*	*(5)Direct*	*(6)Combined*
Upzone × Post	—	-49.682 (35.747)	-50.182 (38.787)	—	-0.017 (0.017)	-0.017 (0.017)
Neighbor Upzone × Post	-102.78 (89.153)	—	-102.86 (89.100)	-0.027 (0.028)	—	-0.027 (0.028)
Median Income (log)	237.05** (97.823)	242.88** (102.31)	239.79** (98.640)	0.076** (0.037)	0.077** (0.038)	0.076** (0.038)
Population (log)	955.98*** (315.91)	977.09*** (340.66)	956.24*** (315.63)	0.288*** (0.090)	0.293*** (0.095)	0.288*** (0.090)
Observations	2,014	2,014	2,014	2,014	2,014	2,014
R^2 (Within)	0.239	0.244	0.238	0.155	0.163	0.154
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Robustness specification defines neighboring tracts as those within 1 mile of an Urban Village boundary, with comparison group tracts between 1 and 2 miles. Treatment defined by Urban Village policy announcement (2011). Outcome variable is housing units measured 4 years after each observation year (t+4).*

Table B4: Robustness Check — Effect of Urban Village Upzoning on Median Home Value (1-Mile Band)

	Median Home Value (Levels)			Median Home Value (Log)		
	(1)Neighbor	*(2)Direct*	*(3)Combined*	*(4)Neighbor*	*(5)Direct*	*(6)Combined*
Upzone × Post	—	-39,210* (22,030)	-39,830* (22,180)	—	-0.075** (0.029)	-0.077*** (0.030)
Neighbor Upzone × Post	3,135 (13,481)	—	4,428 (13,530)	0.010 (0.020)	—	0.013 (0.020)
Median Income (log)	29,000 (23,990)	30,960 (24,130)	30,990 (24,190)	0.091* (0.050)	0.095* (0.050)	0.095* (0.051)
Population (log)	-42,620 (40,440)	-42,540 (40,330)	-41,470 (40,400)	0.027 (0.049)	0.026 (0.049)	0.029 (0.049)
Observations	1,765	1,765	1,765	1,765	1,765	1,765
R^2 (Within)	0.026	0.018	0.029	0.087	0.073	0.091
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Robustness specification defines neighboring tracts as those within 1 mile of an Urban Village boundary, with comparison group tracts between 1 and 2 miles. Treatment defined by Urban Village policy announcement (2011). Levels models report coefficients in USD.*

Table B5: Robustness Check — Effect of Urban Village Upzoning on Median Rent (1-Mile Band)

	Median Rent (Levels)			Median Rent (Log)		
	(1)Neighbor	*(2)Direct*	*(3)Combined*	*(4)Neighbor*	*(5)Direct*	*(6)Combined*
Upzone × Post	—	202.53 (123.44)	202.28 (123.58)	—	0.090* (0.046)	0.091** (0.046)
Neighbor Upzone × Post	-10.159 (71.046)	—	-6.875 (68.064)	0.037 (0.037)	—	0.038 (0.036)
Median Income (log)	110.73 (109.93)	97.469 (107.20)	97.610 (107.26)	0.074 (0.058)	0.069 (0.058)	0.068 (0.057)
Population (log)	303.54** (135.60)	308.33** (132.17)	306.44** (135.97)	0.204** (0.085)	0.195** (0.086)	0.205** (0.085)
Observations	1,427	1,427	1,427	1,427	1,427	1,427
R^2 (Within)	0.097	0.129	0.118	0.221	0.140	0.234
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Robustness specification defines neighboring tracts as those within 1 mile of an Urban Village boundary, with comparison group tracts between 1 and 2 miles. Treatment defined by Urban Village policy announcement (2011). Levels models report coefficients in USD per month.*

Table B6: Robustness Check — Effect of Urban Village Upzoning on Housing Units (Lagged Outcome by 6 Years)

	Housing Units t+6 (Levels)			Housing Units t+6 (Log)		
	(1)Neighbor	***(2)Direct***	***(3)Combined***	***(4)Neighbor***	***(5)Direct***	***(6)Combined***
Upzone × Post	—	-64.318** (28.516)	-68.418** (29.618)	—	-0.020 (0.013)	-0.020 (0.014)
Neighbor Upzone × Post	-33.096 (31.999)	—	-34.451 (32.242)	-0.002 (0.013)	—	-0.002 (0.013)
Median Income (log)	165.56** (81.236)	166.59** (81.007)	169.91** (82.248)	0.047 (0.032)	0.048 (0.032)	0.048 (0.032)
Population (log)	555.34** (250.62)	563.19** (258.55)	556.18** (250.00)	0.129 (0.083)	0.130 (0.085)	0.129 (0.083)
Observations	1,576	1,576	1,576	1,576	1,576	1,576
R^2 (Within)	0.143	0.144	0.143	0.057	0.058	0.058
Entity FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓

*Notes: Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models include entity and time fixed effects with log-transformed controls for median income and population. Treatment year is fixed at 2011 (policy announcement). Outcome variable is housing units measured 6 years after each observation year (t+6), testing a longer construction lag than the primary specification. Comparison group is census tracts 0.5–1.5 miles from upzoned areas. Reduced observations reflect the loss of the final 6 years of outcome data due to the forward shift.*