Analyzing Disparities in Affordable Housing Allocation within the L.A. City Transit Oriented Communities (TOC) Program

Dirk H. Staal

Occidental College

Urban and Environmental Policy Senior Comprehensive Project

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I'd like to thank Professor Rodnyansky for guiding me through this paper and keeping me motivated with positive words and affirmation.

Abstract

Los Angeles is currently facing a housing and public transit crisis. The housing market ranks amongst one of the most expensive in the country and is coupled with rising houselessness numbers across the City. Good quality and accessible affordable housing is needed to combat both issues. In addition, the car-centric City is lacking public transit infrastructure to handle its large urban population. As a result, ballot Measure JJJ was passed in 2016 that established a new zoning program to incentivize dense residential units near transit stations called the Transit Oriented Communities (TOC). The program allows for both market rate and a proportional number of affordable units to be built within a ½ mile of approved transit stops, with developers' incentives to lower construction costs and add density. Since 2017, TOC has shown positive progress in new housing unit approvals, with better numbers than previous City housing programs.

This paper aims to determine if the TOC program has an equitable distribution of housing units across the City. This is done using quantitative analysis of TOC housing data and demographic data of 24 plan-areas (neighborhoods) within the City. Descriptive statistical analysis is used to see where units are going and not going and whether specific plan-area demographics correlate with more approvals or less. The following research shows existing disparities in the allocation of TOC units, with most units approved going to a few plan-areas, such as the Wilshire and Hollywood plan-areas. Also, there was a disparity identified in the distribution of affordable units, with some areas electing to build less than others due to

differences in profit potential. The research also found that Black and Hispanic areas were less likely to receive TOC approvals than Non-Hispanic White neighborhoods. However, overall, the allocations were also going to more low-income and high percentage renter areas. These findings point to the program's general success and but also indicate some future changes to its incentive structure to ensure that affordable housing will be placed where it is needed the most. Adjustments may be necessary to ensure its structure is not being exploited as a tool to boost private-sector profits. Lastly, these findings also show how the disparity in public transit allows some plan-areas to receive more housing than others and emphasizes the need for an overall push to public-transit orient Los Angeles.

Introduction

Los Angeles is a large and sprawling city with over four million people covering 500 square miles of land[1]. L.A. has multiplied in size, wealth, and people over the past century, resulting in recent challenges that have emerged with its growth that now face most major cities across the country and the world. As climate change, wealth inequality, and the recent explosion of the COVID pandemic affects millions in the United States, cities are being pushed to re-analyze their planning equity. Through poor urban planning decisions, L.A. became a car-centered city whose neighborhoods are now vastly disconnected by sprawl and choked by pollution, coupled with an ever-increasing housing crisis. Homelessness has increased in the City of L.A. by 14.2 percent over the year to 41,290 people total[2]. Also, a disproportionate number of

[1]American Community Survey (ACS), 2014-2019
[2] 2020 Greater Los Angeles Homeless Count Presentation. (2020). Retrieved December 01, 2020, from https://www.lahsa.org/documents?id=4558-2020-greater-los-angeles-homeless-count-presentation

renters spend more than 30 percent of their income on housing[3]. L.A. public transit has an estimated yearly ridership of over 2 million people, with half of them being low-income, and average commute time of 54 minutes which is the longest of any major city. These factors stack up against poorer residents who are continually pushed further away from the city center due to rent increases. Many must bear the burden of a poorly built transit system to get to work, particularly those who cannot afford a vehicle.

In recent years, the City has turned to Transit-Oriented Development to undo decades of planning mistakes and prepare for a more uncertain future. L.A. has passed programs to incentivize and fund public transit and create and convert housing to be denser, sustainable, and more affordable. The Transit-Oriented Communities program became the most recent addition to that goal following its creation in 2017. Its tier system added new affordable and market-rate housing stock close to transit. Consequently, this paper will offer an analysis and provide improvements on the program based on its ability to equitably allocate affordable housing to those who need it most in the City. This will be done by analyzing community plan areas with TOC allocations, finding where affordable housing is needed most based on demographics, and identifying if any developers benefit disproportionately from the program.

Background

Before proceeding with the literature, this section will provide definitions and core concept explanations to understand the subject matter and its place within the City of Los Angeles. Measure JJJ was approved by voters in the City of Los Angeles in November 2016 and

[3] Chiland, E. (2020, February 03). L.A. rents are sky-high, but growing more slowly now. Retrieved December 01, 2020, from https://la.curbed.com/2020/2/3/21120640/average-cost-rent-los-angeles-2019

is a three-part proposition with an overall goal of increasing affordable housing units in the City through an incentive and fee system. The first section of the proposition required developers of projects with ten or more units requesting certain entitlements for residential projects to build affordable units or face paying fees. Most commonly, those entitlements were developers asking Zone Changes or General Plan Amendments to increase residential density.[4]. JJJ also required developers to comply with new Labor Standards by using licensed contractors, hiring workers from local and disadvantaged communities/apprenticeship programs, and paying prevailing wages[5].

The final addition to Measure JJJ required the Department of City Planning to create a program to incentivize more affordable housing near transit stations and stops, hence the start of the Transit Oriented Communities (TOC) Affordable Housing Incentive Program becoming active on September 22 in 2017[6]. The TOC Program provides incentives to developers in a tier-based system for qualifying projects within a ½ mile of a selected 'Major Transit Stop'. The TOC incentive areas have Four Tiers based on proximity to various definitions of Major Transit Stops listed in the Table below from L.A. City Department of Planning[7].

[4] City Planning (Ed.). (2018, August 8). City Planning Releases Measure JJJ and Transit-Oriented Communities Housing Progress Reports
[5] City Planning (Ed.). (2018, August 8). City Planning Releases Measure JJJ and Transit-Oriented Communities Housing Progress Reports
[6] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.
[7] Bertoni, V. (2018, February 26). *Transit-Oriented Communities Affordable Housing Incentive Program Guidelines (TOC Guidelines)* (Rep.)

Table 1: TOC Tier identification

Type of Major Transit Stop	Tier 1 (Low)	Tier 2 (Medium)	Tier 3 (High)	Tier 4 (Regional)
	Distance to Major Transit Stop			
Two Regular Buses (intersection of 2 non Rapid Bus* lines, each w/ at least 15 min. average peak headways)	750 - 2640 ft.	< 750 ft.	-	-
Regular plus Rapid Bus* (intersection of a Regular Bus and Rapid Bus line)	1500 – 2640 ft.	750 – <1500 ft.	< 750 ft.	-
Two Rapid Buses* (intersection of two Rapid Bus lines)	-	1500-2640 ft.	< 1500 ft.	-
Metrolink Rail Stations	1500 – 2640 ft.	750 – <1500 ft.	< 750 ft.	-
Metro Rail Stations	-	-	≤ 2640 ft.	< 750 ft. from intersection with another rail line or a Rapid Bus*

Once a project is assigned a Tier, there are specific requirements it must meet to receive benefits. Developers must set aside a proportional amount of On-Site Restricted Affordable Units depending on the type of dwelling, size of the project, and which tier their development is in[8]. The TOC program bases its affordability categories on these income definitions by the U.S. Department of Housing and Urban Development (HUD); Extremely Low Income (ELI), Very Low income (VLI), or Low Income (LI). The higher the tier, the higher the percentage of the project's total units must be affordable. The requirements for the tiers are established in the table below. Developers can choose either completely from one category, for example only having 8% ELI in their building for Tier 1, or customize their proportions.

Table 2: Affordability Requirements for TOC[9]

	Tier 1	**Tier 2**	**Tier 3**	**Tier 4**
ELI	8%	9%	10%	11%
VLI	11%	12%	14%	15%
LI	20%	21%	23%	25%

[8] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.
[9] Bertoni, V. (2018, February 26). *Transit-Oriented Communities Affordable Housing Incentive Program Guidelines (TOC Guidelines)* (Rep.)

In addition to Affordable Units and proximity to a Major Transit Stop, seven more requirements are listed for a project to gain incentives. Based on tier placement, incentives include an increase in the number of built units, an increase in Floor Area Ratio, more parking, building height increases, and others, with higher-level incentives for developers who add affordable units above the minimum prescribed.[10].

Since its creation (the last available City Housing report used in this paper was June 2020), there have been 14,676 units of housing approved, with 3,591 of those being affordable.[11]. The TOC program maps out approvals across the City of Los Angeles using 'Plan-Areas,' which are neighborhoods/multiple neighborhoods combined in a standardized mapping format used for City policy. For example, the Wilshire plan-area has seen most of these approvals, with 4,613 units, 17% of those being affordable units. The South East Los Angeles plan-area has only 314 units approved; however, 94% of those are affordable, the highest out of all plan-areas. The TOC program became the backbone of Measure JJJ in regard to increasing the number of affordable housing units, adding on the Density Bonus program[12] which was introduced in 2004 also to create more affordable units.

While the TOC program is specific to Los Angeles, Transit-Oriented Development (TOD) has been a growing trend in urban planning, mainly as cities try to grapple with booming populations that strain transit and housing, keeping in mind sustainability and climate change. While the suburbs have dominated American life since the end of World War 2, American cities

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[10] Bertoni, V. (2018, February 26). *Transit-Oriented Communities Affordable Housing Incentive Program Guidelines (TOC Guidelines)* (Rep.)
[11] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.
[12] https://planning.lacounty.gov/density

have been the new targets of growth as younger generations are leaving the suburbs in droves. During the 'White Flight' that many American cities experienced in the 1960's following integration, cities were left neglected and underfunded while suburbs flourished. Working-class minorities made up most of the urban populations at the time, mainly based in manufacturing and textiles. However, when cities began swapping their economic bases for tech and services, a reverse in demographics began as wealthier, whiter, and younger residents moved back into urban centers[13]. Introducing TOD is becoming essential to manage equitably and sustainably these growing and changing cities. While TOC in L.A. places a particular emphasis on affordable housing as its central pillar, TOD as a general idea also focuses on the creation of compact, walkable, pedestrian-oriented, and mixed-use communities centered around high-quality transit systems[14]. By centering housing around transit and creating denser and more walkable neighborhoods, TOD's goal is to decrease cars' reliance to reduce carbon emissions, highway congestion, and overall health effects tied to auto use. In LA, TOD can function as a method to reverse the past's planning decisions that left the City extremely car-dependent and failed to maintain any public transit infrastructure.

For TOD to function well, it needs dense and affordable housing to draw in residents to live and participate in these reimagined urban spaces. Once an area can build up its housing stock, it can then look towards mixed-use development/walkability. Mixed-use development incorporates both commercial and residential zoning. That is why housing is often the first goal for many measures, bills, and propositions focused on TOD, such as the TOC program here in L.A. and other examples spanning from State to the Federal government. California Senate Bill

[13] Chiland, E. (2020, February 03). L.A. rents are sky-high, but growing more slowly now. Retrieved December 01, 2020, from https://la.curbed.com/2020/2/3/21120640/average-cost-rent-los-angeles-2019
[14] Transit-Oriented Development. (n.d.). http://www.tod.org/

375 was passed in 2008 with its primary goal being to reduce greenhouse gas emissions from cars through the California Air Resources Board, but also to develop a Sustainable Communities Strategy that further combines transit, development, and housing policies to reduce emissions[15]. The bill incorporates TOD by modifying the planning allocations of regional housing and transportation plans to create transportation and land use patterns in hopes that the public will drive their vehicles less. 'Modifying' of these allocations follows a TOC-type pattern in which more housing is zoned towards transit hubs, increasing density and more mixed-use development.

While most TOD proposals pass reasonably unopposed in California, Senate Bill 50 (S.B. 50) proposed by Scott Weiner of San Francisco was recently rejected for the third time this February. S.B. 50 would have been a statewide TOD rule that could have enabled density near transit instead of more local measures that have taken their place, such as TOC here in L.A. City and County. S.B. 50 aimed to increase building heights near transit stops or multi-use developments, increase housing availability and density, and create a more centralized community to reduce the use of cars[16]. S.B. Two opposing groups resisted 50; wealthy homeowners trying to retain their single-family-home neighborhoods and community non-profits who feared displacement of original residents, mainly due to the bill's lack of affordable housing requirements[17]. Its requirements would only be active if a project were ten units or bigger and gives developers an option to build their affordable housing units elsewhere, which could leave

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[15] The Basics of SB 375. (n.d.). Retrieved November 02, 2020, from https://www.ca-ilg.org/post/basics-sb-375

[16] Walker, A. (2020, February 07). The real reason California's upzoning bill failed. Retrieved November 02, 2020, from https://archive.curbed.com/2020/2/7/21125100/sb-50-california-bill-fail

[17] L.A., A. (2020, January 28). The Road to Getting SB 50 Right (And Why We Are Currently Opposing the Bill). Retrieved November 02, 2020, from https://medium.com/@ACTLA/the-road-to-getting-sb-50-right-and-why-we-are-currently-opposing-the-bill-ee2680f4b2b2

original residents with fewer housing options. The failure of S.B. 50 now leaves the TOC program in the spotlight to address affordable housing and TOD in the City of Los Angeles.

Despite the relative success the TOC program has brought to Los Angeles already, further investigation into disparities regarding housing approvals between plan areas is essential in determining the equity of TOC in providing housing and access to transit for those who need it most. While affordable units are required to receive incentives, most units being approved are still market rate, and even affordable units designated for ELI through TOC have dropped from 52% of the total in 2019 to 32% of the total in 2020[18]. Through further analysis, I hope to determine why housing is being allocated where it is, where it should be going, and who is set to profit or not from the implications of receiving TOC approval.

Literature Review

Introduction

As Transit-Oriented Development moves to the forefront of urban planning for the future, various studies and discussions in the field have started analyzing its effectiveness and equity regarding how projects are planned and implemented, particularly with historically marginalized working-class communities of color. This lens is of considerable importance when looking at the TOC program given the incentives it provides to developers and its heavy reliance on the production of more market-rate units than affordable. The works referenced in this literature review will work to break down the positives and negatives of TOC by looking at other TOD projects, TOD's functionality in L.A., and what needs to be addressed to mitigate disparities.

[18] City Planning. (n.d.). L.A. City Planning Housing Progress Reports. Retrieved November 03, 2020, from https://planning.lacity.org/resources/housing-reports

This review will assist in addressing the following questions:

1. “Are there notable disparities within the Measure JJJ/TOC incentive program regarding which neighborhoods receive more housing approvals?”
2. “Which neighborhood characteristics correlate with more approvals?”

Discussions and TOD analysis vary based on the author or stakeholder's values, background, and expertise within urban planning. For example, non-profits/community-based organizations tend to be critical of TOD due to its cited correlation with displacement and gentrification. In contrast, government offices, developers, and environmentalists often align TOD with a more positive analysis. It provides a new approach to urban planning that incorporates density and sustainability, including increased transit access. The following literature review will touch on all these perspectives to reach a complete understanding of TOD itself and applying that knowledge to the TOC program here in L.A.

Transit-Oriented Development and Los Angeles

Los Angeles has been poised as a proving ground of sorts to determine whether TOD can fix decades of planning mistakes that have resulted in its vast urban sprawl, pollution, and housing inequity. While other more single-issue-based policies may only focus on one of these many tasks simultaneously, TOD policy can include many problems into one multi-faceted plan. The last thirty years have seen billions of dollars invested into public transit development in the Los Angeles Region, both into Metro and Metrolink, through County and City Measures,

Propositions, and Bills.[19] This investment is increasingly funneled through TOD programs, ranging from Measure M to Measure JJJ and its subsequent TOC program, giving the City a sound funding base to tackle its vast plethora of urban planning issues.

Gentrification and Displacement

Despite TOD's relative popularity amongst a diverse background of stakeholders, it has received its fair share of criticism from local activists and non-profits, sparking further discussion and analysis. A group of UCLA graduate students wrote a comprehensive project in 2015, predating Measure JJJ and the TOC program, whose title bears the question, '*Oriented for Whom*?', which focused on the effects of TOD on disadvantaged neighborhoods and the impact of the Sustainable Communities Strategies (SCS), a feature of SB 375 which was discussed in the background section[20]. At the time of the bill's passing little work had been done to analyze TOD's effects in low-income communities of color. Therefore, this report aimed to challenge that by using 6 case study communities that were majority POC and low income and being located to high-traffic transit stops.

Based on survey collection done at these selected transit stops across the City, the authors found that half of all Metro riders are low-income, and 35% of them are residents of proposed TOD zones[21]. This is important to set as a background in TOD's discussion. Historical policies such as redlining have often segregated working-class and non-white communities near rail lines

[19] Brozen, M., Hartzell, M., Manville, M., Monkkonen, P., & Vallianatos, M. (2018). *Transit-Oriented Los Angeles: Envisioning an Equitable and Thriving Future* (pp. 1-46, Rep.). Los Angeles, California: UCLA Lewis Center for Regional Policy Studies.

[20] Cranor, J. et al. (2015). Oriented for Whom? The Impact of Transit-Oriented Development on Six LA Communities. *UCLA Comprehensive Project,* 1-16.

[21] Cranor, J. et al. (2015). Oriented for Whom? The Impact of Transit-Oriented Development on Six LA Communities. *UCLA Comprehensive Project,* 1-16.

and highways. However, they are now seeing revitalization through TOD and other urban renewal projects as young people tend to favor cities over suburbs. Their findings also showed that local/longtime residents (predominantly Latino) were more likely to shop locally, while new residents (predominantly Non-Hispanic) are less likely to shop locally, showing a possible strain that TOD has on businesses that could lose a base of their customers if price increases through up zoning and increased housing stock may push locals further away from TOD areas[22]. The authors recommended developing plans to create new housing near transit stations and preserve low-cost housing, one of the TOC program pillars released two years after publication. Activists of Measure JJJ (Build Better LA) realized the possibilities of displacement if TOD is implemented without significant housing improvements to retain its original residents.

Gentrification has also been linked to TOD planning, related to conditions explained above, as the revitalization of neighborhoods through housing, transit, and businesses may create displacement of original residents. For this section, gentrification is defined as 'a broad upgrading process whereby a neighborhood's socioeconomic composition changes to a greater degree than that of nearby areas over a relatively short period, as wealthy and highly skilled workers, proportionally increase by outbidding poorer residents for housing'[23]. TOD functions on creating incentives to draw in new residents (whether from the same City or not) to live in denser and transit-rich areas, and in line with Cranor et al. 2015, these areas are often lower income. These initiatives revolve around creating re-investment processes that can alter neighborhoods'

[22] Cranor, J. et al. (2015). Oriented for Whom? The Impact of Transit-Oriented Development on Six LA Communities. *UCLA Comprehensive Project,* 1-16.

[23] Brown, A. (2016). Rubber tires for residents: Bus rapid transit and changing neighborhoods in Los Angeles, California. *Transportation Research Record: Journal of the Transportation Research Board*, *2539*, 1–10. DOI: 10.3141/2539-01

spatial patterns and accessibility with new developments or transit lines[24]. These areas see lower rents on average pre-TOD, and as these rent gaps increase from TOD investment, real estate investment also increases parallel to the area's profitability, reducing affordability that ultimately targets original residents[25]. TOD plays a significant role in constructing a city's image, sustainable, mixed-use, attractive, and easy to navigate with a high quality of life. These are images that draw in investment even outside of TOD neighborhoods; however also require the removal of photographs that show socioeconomic inequality and vulnerable residents, often creating the conditions for gentrification.

Role of Affordable Housing in TOD

The literature analysis shows that what sets the TOC program apart from other TOD initiatives relies on its ability to provide an affordable housing incentive structure that may avoid gentrification and displacement. However, this has not yet been proven. The central dilemma that emerges from TOD is fear that it will not retain a local and diverse residential makeup, something that is only possible when mixed-income residents can live and benefit equally. While market-rate units make up most TOD housing, inserting affordable housing units has become the primary strategy to try and stem possible inequities by allowing for this more mixed-income community. Research on San Francisco's housing market has shown that 1,000 new affordable housing units could result in five percent less displacement[26].

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[24] Miguel Padeiro, Ana Louro & Nuno Marques da Costa (2019) Transit-oriented development and gentrification: a systematic review, Transport Reviews, 39:6, 733-754, DOI: 10.1080/01441647.2019.1649316

[25] Miguel Padeiro, Ana Louro & Nuno Marques da Costa (2019) Transit-oriented development and gentrification: a systematic review, Transport Reviews, 39:6, 733-754, DOI: 10.1080/01441647.2019.1649316

[26] Brozen, M., Hartzell, M., Manville, M., Monkkonen, P., & Vallianatos, M. (2018). *Transit-Oriented Los Angeles: Envisioning an Equitable and Thriving Future* (pp. 1-46, Rep.). Los Angeles, California: UCLA Lewis Center for Regional Policy Studies.

Evaluating effectiveness of TOC

The most recent evaluation conducted to see the effectiveness of the TOC program came out of *Cityscape: A Journal of Policy Development and Research*, with the article *Los Angeles' Housing Crisis and Local Planning Responses: An Evaluation of Inclusionary Zoning and the Transit Oriented Communities Plan as Policy Solutions in Los Angeles*[27]. The author's analysis determined that compared to previous TOD housing programs in L.A., such as the Density Bonus incentive, TOC has added almost as many housing permits and in a shorter amount of time. According to the article, this is attributed to the substantial increase in incentivization that the TOC program provides to the developers to build more affordable units, a significant change from previous programs. Also, the TOC program allows developers to build by-right, enabling many projects to cut down a typically lengthy entitlement process from an 11 to 22-month average to around six months, making them more profitable. Many developers have also taken advantage of the TOC tier model to build either more or less affordable units based on its designation as ELI, VLI, or LI.[28]This creates an ability to maximize market-rate units in the building by having only ELI, which takes up the lowest percentage of companies (refer to Table 2).

The article's authors conducted a financial analysis of Internal Rate of Return (IRR) for TOC-approved projects across various neighborhoods. They found that developers prefer to build in moderate-low markets than moderate-strong markets due to the difference in construction costs. However, very affluent areas see a divergence from this trend. The developers

[27] Zhu, L., Burinskiy, E., De la Roca, J., Green, R. K., & Boarnet, M. G. (2021). Los Angeles' Housing Crisis and Local Planning Responses: An Evaluation of Inclusionary Zoning and the Transit Oriented Communities Plan as Policy Solutions in Los Angeles. *Cityscape: A Journal of Policy Development and Research, 23*(1), 133-159

[28] Extremely Low Income, Very Low Income, or Low Income

save money through TOC incentives that allow less land per unit and adding more affordable units does not affect profit. The authors found that the IRR is highest for developers building the majority ELI. Overall, the article concludes that the TOC program can be an effective way to increase housing units' production, something L.A. is desperate for, by its proven ability to speed up approval processes and increase density allotments. In its short four-year tenure, the program has already reached a significant level of success. However, according to the authors, the main fault of TOC's design rests in its encouragement for developers to build fewer ELI units instead of more LI units, possibly denying the market thousands of more affordable housing units.

On top of this analysis, more general literature lays out key factors that affordable housing-based TOD should have to be equitable and efficient. One issue is that developers tend to lose revenue from affordable housing, requiring TOD programs to have sufficient subsidies and incentives to draw in developers. The benefits have been vital to the TOC program's success. Its tier incentive structure provides a large swath of bonuses for developers who increase their affordability, setting it apart from other TOD housing programs such as the Density Bonus.[29] Another problem that has arisen in literature is the fact that landlords and developers will often opt out of affordability requirements, particularly if the neighborhood their project is in increases in value and incentivizes them to have more market-rate units than affordable[30]. TOC can address this problem by maintaining a mandatory minimum percentage of affordable units

[29] Boarnet, M., Bostic, R., Williams, D., Santiago-Bartolomei, R., Rodnyansky, S., & Eisenlohr, A. (2017). Can Affordable Housing in Transit-Oriented Development Help Solve California's Housing Crisis while also Addressing Environmental Goals? *UC Davis: National Center for Sustainable Transportation*. Retrieved from https://escholarship.org/uc/item/31t851c6

[30] Boarnet, M., Bostic, R., Williams, D., Santiago-Bartolomei, R., Rodnyansky, S., & Eisenlohr, A. (2017). Can Affordable Housing in Transit-Oriented Development Help Solve California's Housing Crisis while also Addressing Environmental Goals? *UC Davis: National Center for Sustainable Transportation*. Retrieved from https://escholarship.org/uc/item/31t851c6

depending on the tier a development falls under, allowing developers to choose an additional level of choice depending on the size of their project. Also, there is a covenant added on to all TOC approved building permits that all affordability criteria must remain active for at least 55 years after approval[31], ensuring its longevity.

Despite this relatively positive framework TOC has established to attract more developers to build affordable, following the initial passing of TOC, many developers would strategically place themselves within a tier that enables them to create the most market-rate units. For example, the development consulting group Craig Lawson & Co., LLC, was interviewed about their recent TOC accepted project, a 193-unit complex in Koreatown with 20 units set aside for Extremely Low-Income tenants. Their Tier placement allows for the most height and density allotments while only requiring 8% of all units be affordable, all ELI units. A Craig Lawson spokesperson stated that ‘developers reach out to us saying that they haven't built in the City of L.A. in years but are now considering doing so in direct response to the bonuses offered by TOC.'[32]. Overall, this example shows TOC working as intended by allocating an appropriate number of affordable units and attracting once disinterested developers; however, the disproportionate allotment of affordable to market-rate raises concerns about how neighborhoods will change over time.

It is easy enough to view the program's success based on the numbers produced by City Planning and various third-party reviews, showing an overall increase in the number of

[31] Bertoni, V. (2018, February 26). Transit-Oriented Communities Affordable Housing Incentive Program Guidelines (TOC Guidelines) (Rep.)
[32] Transit oriented communities: A year in review. (2018, September 4). Retrieved April 01, 2021, from https://urbanize.city/la/post/transit-oriented-communities-year-review

affordable and market-rate units proposed. However, more analysis may be required to determine whether the program is equitable or not in its housing allocation across the City.

Concluding patterns across the literature

Overall, the literature reviewed for this paper seems to show TOC as one of the more advanced and efficient TOD programs, which has real promise in creating lasting change in L.A. It also laid out L.A. as an important testing ground for TOD's future as the City has many institutional problems that TOC may be able to address collectively. However, many questions remained unanswered regarding the TOC program's long-term effects on the City's low-income and POC communities, who have already seen impacts from similar development projects. While housing production approvals have boomed under TOC, the authors of the various literature reviewed above remain skeptical if TOC's model is ideal for maximum affordable housing production, not just market rate. Gentrification and displacement were everyday worries, including the delusion of local culture that may result from an increased migration of higher-income non-local residents. It becomes particularly problematic if the affordable housing stock does not increase proportionally. As a result, I believe that the questions asked within this paper may provide further analysis into examining the accurate equity of TOC and affordable housing incentives by seeing where housing is allocated and who may or may not be profiting.

Methodology

Research Question

RQ1: Are there notable disparities within the Measure JJJ/TOC incentive program regarding which neighborhoods receive more housing approvals and which neighborhood characteristics correlate with more approvals?

Study Design

The goal of this research into the TOC program housing allocations is to discover any disparities within the program that may inhibit certain plan-areas from receiving proper affordable housing. This study relies on quantitative methods, precisely correlation coefficients and descriptive statistics analysis, to determine whether correlations exist between specific plan-area demographics and more TOC unit approvals and further understand plan areas' demographic and economic characteristics. While there is evidence provided by the City of L.A. and third-party scholars to show proof of the program's success, limited investigation has been done into possible allocation trends and the effects of housing allocation on plan areas in need.

Quantitative Data Selection

Out of the thirty-six community plan areas in Los Angeles, twenty-four are analyzed within this paper based on available data from the City Planning department that fit the scope of this analysis[33]. Some community plan areas within the City have not received TOC approvals and were therefore not included. All data for this research was taken directly from the L.A. City

[33] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.

planning department, including both TOC and demographic data. Demographic data was based on the 2014-2019 American Community Survey (ACS) and was organized by each community plan area on the Planning Department's website. All available TOC data, ranging from 2018 to 2020, was downloaded and sorted into one dataset containing the twenty-four plan areas. These data included Total Proposals, Total Approvals, Total Affordable Units, and Total Percent Affordable. Demographic data was downloaded into its dataset and split into Race and Population, Housing, and Income. I selected demographic data based on its possible relevance to being an indicator for needing more affordable housing and data better to understand the characteristic makeup of that plan area.

A smaller case study is conducted using the demographic and TOC data from two community plan areas, Hollywood, and Wilshire. The two plan areas were selected due to their high TOC unit approvals and high populations. Both areas have many existing L.A. Metro rail and other qualifying Major Transit Stops and, as a result, have a large amount of land that qualifies into a TOC tier. Moreover, both areas are also undergoing a vast increase in transportation infrastructure due to an increase in L.A. Metro funding of the Purple line,[34]they are further increasing the potential for TOC usage. Using descriptive statistical analysis, critical demographic and TOC data will be analyzed for disparities in mean difference. This way, an answer to whether specific neighborhood characteristics affect TOC unit approvals may be found. For reference regarding the plan areas, a complete map of all thirty-six is shown below, including a ZIMAS map that indicates the TOC tiers, depicted as blue concentric circles on a dark to light scale representing a Tier 4 to Tier 1 TOC area.

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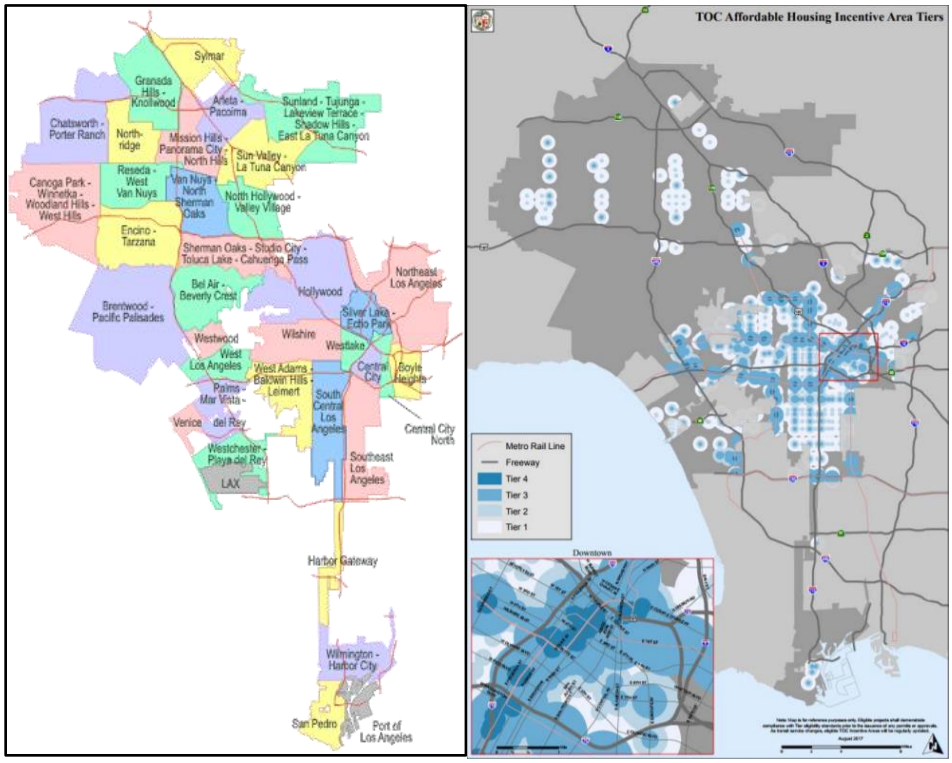
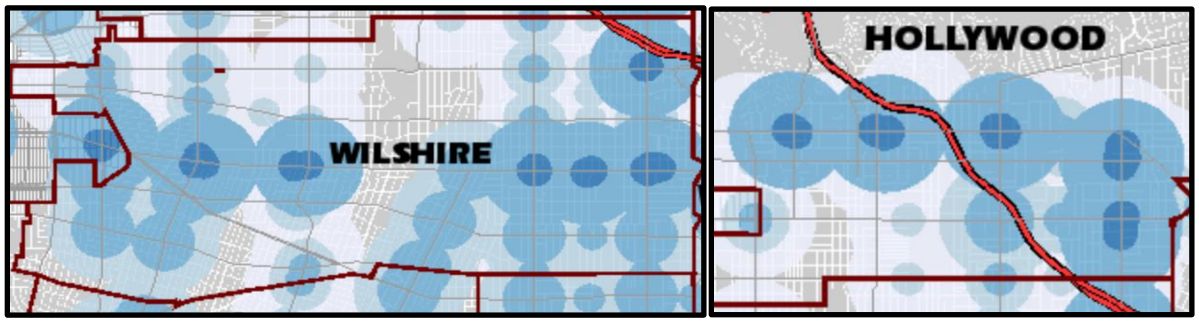
[34] Brozen, M., Hartzell, M., Manville, M., Monkkonen, P., & Vallianatos, M. (2018). *Transit-Oriented Los Angeles: Envisioning an Equitable and Thriving Future* (pp. 1-46, Rep.). Los Angeles, California: UCLA Lewis Center for Regional Policy Studies.

Map 1, L.A. Community Plan Areas[35]*. Map 2, ZIMAS Map of TOC Tiers*[36]



Two ZIMAS maps depicting the plan-areas used in the case study, Wilshire, and Hollywood, are also depicted below, emphasizing the amount of TOC tiers present.

Maps 3 and 4: ZIMAS Map of TOC Areas in Hollywood and Wilshire[37]



[35] City of L.A.'s Community Plan Areas. (2020, April 08). Retrieved March 24, 2021, from http://allianceforcommunitytransit.org/community-plan-updates/

[36] http://zimas.lacity.org/

[37] http://zimas.lacity.org/

Statistical analysis

For RQ1, tabulation and visualization of the TOC data are used to show disparities in allocation across the twenty-four plan areas. Following that, Pearson's correlation coefficient was used in Microsoft Excel to determine if there is a statistical correlation between certain demographic variables and TOC unit approval. Their values were compared together across the three demographic subgroups and aided in proving a general picture of characteristics for a high TOC approval plan area and a low TOC approval plan area. Several descriptive statistic tests were also run using Microsoft Excel to calculate statistically significant mean differences in crucial characteristics between these groups.

Results

Results for Research Question, Sub Question A: Are there notable disparities within the Measure JJJ TOC incentive program regarding which neighborhoods receive more housing approvals?'.

Table 3 (below) shows the allocation of TOC Unit Approvals across all twenty-four community plan areas, the number of affordable units, and the total affordability percentage. Wilshire has the most significant approval number by far, at 4,613 units of TOC housing, including having the most affordable units at 784, a 17% affordability rate. Southeast LA has the highest affordability percentage, with 94%, with 295 out of 314 units being affordable. The Canoga Park/Winnetka/Woodland Hills/West Hills plan area has the lowest units approved at 17.

Table 3: TOC Allocation of Approvals and Affordable Units (Sorted by Units Approved)[38]

Community Plan Area	Units Approved	Units Affordable	Percent of Units Affordable
Wilshire	4,613	784	17%
Hollywood	1,596	497	31%
Westlake	1,378	648	47%
Palms/MV/DR	1,253	139	11%
West LA	1,203	193	16%
South LA	953	331	35%
Silver Lake/Echo Park/Elysian Valley	706	199,	28%
Northeast LA	541	74	14%
West Adams/Baldwin Hills/Leimert	533	194	36%
Westchester/Playa del Rey	424	66	16%
North Hollywood/Valley Village	395	41	10%
Southeast LA	314	295	94%

[38] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.

Van Nuys/North Sherman Oaks	265	30	11%
Venice	183	18	10%
Central City North	170	17	10%
San Pedro	155	14	9%
Central City	151	17	11%
Mission Hills/Panorama City/North Hills	128	49	38%
Sherman Oaks/Studio City/Toluca Lake/Cahuenga Pass	121	16	13%
Westwood	113	16	14%
Sun Valley/La Tuna Canyon	108	9	8%
Boyle Heights	55	7	13%
Brentwood/Pacific Palisades	17	2	18%
Canoga Park/Winnetka/Woodland Hills/West Hills	17	3	12%

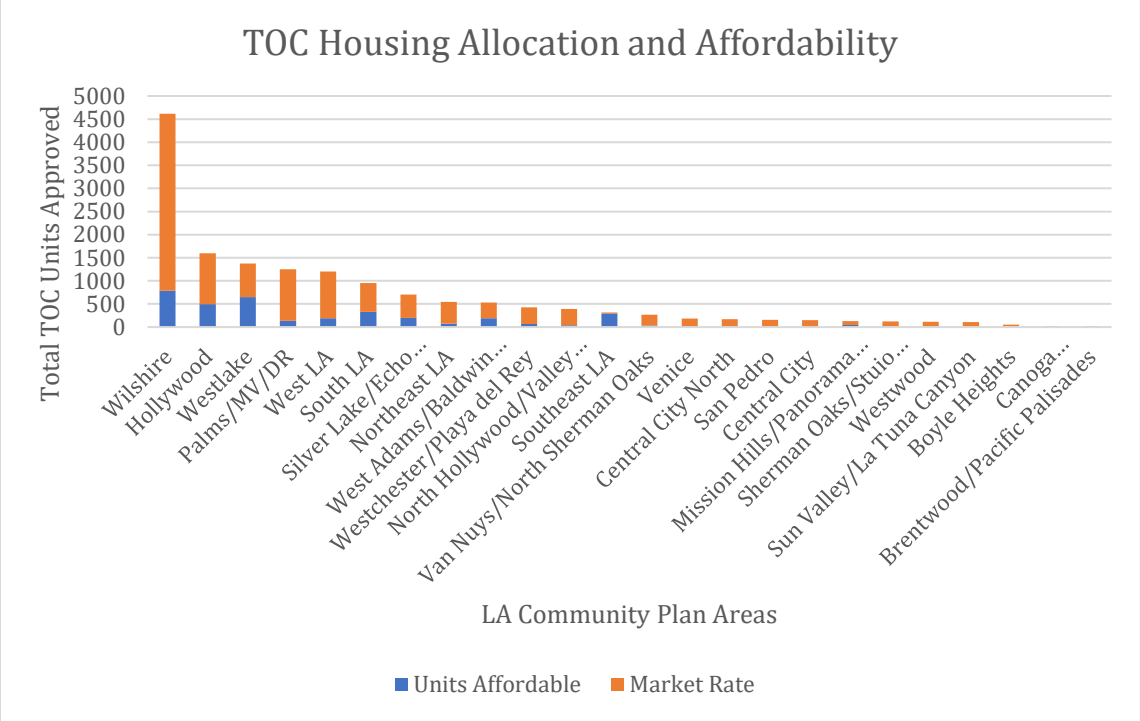
Using the data above, descriptive statistical tests were used to determine averages for each variable to understand where each community plan area stands compared to another better. This is depicted in the table below.

Table 4: Averages of TOC Variables[39]

	Units Approved	Units Affordable	Percent of Units Affordable
Averages	641	152	22%

TOC Units' allocation is skewed mainly towards seven community plan areas that sit above the average approval of 641 and average affordable percentage of 22%. Most unit allocation is occurring amongst the top five plan areas, which have more than 1,000 units. Only nine community plan areas sit above the average affordable unit count of 152. The data is visualized in the graph below to highlight the allocation disparity further.

Graph 1: TOC Housing Allocation and Affordability[40]



[39] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.
[40] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.

A vital component of the TOC program for developers is choosing how many affordable units a building can have and the classification of those units (if above the minimum). An examination of trends in decision-making may shed light on possible disparities that exist or may occur. The table below shows the allocation for each income tier across the twenty-four plan areas.

Table 5: Affordable Housing Distribution Amongst Income Tiers (sorted by total TOC Affordable Units)[41]

Community Plan Area	TOC Affordable Units	% Extremely Low-Income Units	% Very Low-Income Units	% Low Income Units
Wilshire	784	64%	6%	32%
Westlake	648	29%	14%	57%
Hollywood	497	46%	31%	22%
South LA	331	21%	5%	75%
Southeast LA	295	36%	0%	44%
Silver Lake/Echo Park/Elysian Valley	199	26%	1%	74%
West Adams/Baldwin Hills/Leimert	194	23%	2%	75%
West LA	193	52%	10%	38%
Palms/MV/DR	139	92%	9%	0%
Northeast LA	74	11%	89%	0%
Westchester/Playa del Rey	66	55%	35%	11%
Mission Hills/Panorama City/North Hills	49	0%	0%	100%
North Hollywood/Valley Village	41	85%	15%	0%
Van Nuys/North Sherman Oaks	30	90%	10%	0%
Venice	18	100%	0%	0%
Central City North	17	100%	0%	0%
Central City	17	100%	0%	0%
Sherman Oaks/Studio City/Toluca Lake/Cahuenga Pass	16	44%	56%	0%
Westwood	16	75%	19%	6%
San Pedro	14	100%	0%	0%
Sun Valley/La Tuna Canyon	9	0%	100%	0%
Boyle Heights	7	100%	0%	0%
Canoga Park/Winnetka/Woodland Hills/West Hills	3	33%	33%	33%
Brentwood/Pacific Palisades	2	100%	0%	0%

[41] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.

The table below lists out the averages for each category calculated using descriptive statistical analysis, including the sums of total units allocated within their income tiers, to further display a trend in distribution.

Table 6: Averages and Sums of Income Tier Distribution[42]

	TOC Affordable Units	Extremely Low-Income Units	Very Low-Income Units	Low-Income Units
Averages (Per Plan Area)	152	68	20	64
Total Units	3659	1620	469	1531

Most affordable units are being delegated towards ELI and LI, with extraordinarily little going towards VLI. ELI has the lowest unit requirements due to being the lowest income bracket, with 8% in a Tier One. LI has the highest unit requirement at 20% in a Tier One; however, it has the highest price out of all three.

Results for Research Question 1, Sub Question B: Which neighborhood characteristics correlate with more approvals?

The demographic data is broken down into various sections as laid out on the Methodology; Population and Race, Housing Status, and Income level to examine possible correlations between characteristics and TOC approvals. Similar to TOC data, demographic data is examined initially in a broad fashion to see general trends across all 24 plan areas being analyzed in this paper.

[42] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.

Population and Race

Each plan area's Population and race data are displayed below in a table to understand each neighborhood better. While a larger population alone does not necessarily correlate with a need for more affordable housing, it is an important starting point for further analysis. Breakdown of Race by the population is also included to answer whether specific demographics affect TOC allocation.

Table 7: Population and Race breakdown of 24 Plan Areas[43] (sorted by Total Population)

Community Plan Area	Total Population	Non-Hispanic White Population	Black Population	Asian Population	Hispanic Population
Southeast LA	301512	2439	49234	2207	245975
South LA	288274	13639	76328	15029	179524
Wilshire	280597	76704	19867	74055	101112
Northeast LA	242790	41655	4900	40935	150501
Hollywood	195709	99513	9447	20516	58830
Canoga Park/Winnetka/Woodland Hills/West Hills	194969	88130	8249	27632	63821
West Adams/Baldwin Hills/Leimert	172149	14789	68372	8398	76821
Van Nuys/North Sherman Oaks	168217	33119	8585	11479	85470
Mission Hills/Panorama City/North Hills	149168	18235	5007	20989	102928
North Hollywood/Valley Village	138659	62035	7783	9649	55584
Westlake	120455	8136	6310	18473	86045
Palms/MV/DR	113794	50265	6997	20098	31053
Boyle Heights	89529	2088	1286	2430	83518

[43] American Community Survey (ACS), 2014-2018

Sherman Oaks/Studio City/Toluca Lake/Cahuenga Pass	86605	61702	4498	6332	10313
Sun Valley/La Tuna Canyon	85311	20158	1912	5972	56237
San Pedro	79502	26343	5193	5855	39716
West LA	78333	48438	2603	13985	9757
Silver Lake/Echo Park/Elysian Valley	71460	25831	1874	11871	29670
Westchester/Playa del Rey	62015	33167	6129	9409	10295
Brentwood/Pacific Palisades	56950	46404	622	3947	3361
Westwood	55829	28547	1802	15166	6931
Central City	44842	12133	8991	11498	10213
Venice	35873	24550	2308	1767	5918
Central City North	26085	5071	3848	8650	7652

The five largest populations are Southeast LA, South LA, Wilshire, Northeast LA, and Hollywood. While Wilshire and Hollywood both have high TOC unit approvals to match their high populations, the other three plan areas lack comparison. Southeast LA, with the largest Population, has 314 units approved. Northeast LA and South LA have 541 and 953 units, respectively. Wilshire and Southeast LA seem to have the most considerable disparity in Population and TOC unit ratios, with Wilshire having a population almost identical to Southeast LA but having 4,613 units approved compared to Southeast LA's 314.

To see if there is a correlation between TOC Unit allocation and Race/Population, a Pearson's correlation coefficient is used to calculate if a higher/lower population or higher/lower percentage of a race correlates with a higher/lower number of TOC Units in that community plan area.

Population and TOC Unit Allocation

Using Pearson's correlation coefficient, a moderate positive correlation was found between Population and the number of TOC Units at **0.472**. While this is not a perfect positive correlation, which would be even at 1, it generally shows that the more people in a plan area, the more TOC units are approved.

Race and TOC Unit Allocation

Using Pearson's correlation coefficient, correlations were calculated between the number of residents of a particular Race and total TOC Units allocated to that planning area.

1. Non- Hispanic White Population and TOC Unit Allocation

   Pearson's correlation coefficient value is **0.405.** This indicates a weak to moderate positive correlation between a more significant Non- Hispanic White Population and an increase in TOC approvals out of the 24 community plan areas.

2. Black Population and TOC Unit Allocation

   Pearson's correlation coefficient value is **0.149.** This indicates a very weak positive correlation between a larger Black population and an increase in TOC approvals.

3. Hispanic Population and TOC Unit Allocation

   Pearson’s correlation coefficient is **0.190.** This indicates a very weak positive correlation between a larger Hispanic population and an increase in TOC approvals.

4. Asian Population and TOC Unit Allocation

Pearson's correlation coefficient value is **0.813.** This indicates a strong positive correlation between a larger Asian population and an increase in TOC approvals.

Housing Demographics and TOC Unit Allocation

Selected housing demographic data from all 24 community plan areas will be examined to determine if there are correlations with a higher or lower TOC Unit approval number. Pearson's correlation coefficient is used to determine correlation. The aim of this is to determine if certain areas need housing and are not receiving adequate support through TOC. The table below shows all housing data used in the analysis to follow (refer to Table 3 for TOC data). Population data is also included in the table for further reference.

Table 8: Housing Demographics across 24 Community Plan Areas[44](sorted by Total Population)

Community Plan Area	Population	Total Dwelling Units	% Vacant Units	% Renter Occupied Units	% Single Housing Units	% Multiple Housing Units	Population per Unit[45]
Southeast LA	301512	74232	5%	71%	49%	50%	4.1
South LA	288274	87914	6%	69%	42%	58%	3.3
Wilshire	280597	132040	10%	83%	13%	87%	2.1
Northeast LA	242790	81432	5%	56%	55%	45%	3.0
Hollywood	195709	108423	12%	80%	20%	80%	1.8
Canoga Park/Winnetka/ Woodland Hills/West Hills	194969	70098	5%	45%	57%	43%	2.8
West Adams/Baldwin Hills/Leimert	172149	71653	7%	64%	37%	63%	2.4
Van	168217	63725	4%	70%	31%	68%	2.6

[44] American Community Survey (ACS), 2014-2019
[45] Divided Population by Total Dwelling Units

Nuys/North Sherman Oaks							
Mission Hills/Panorama City/North Hills	149168	41640	3%	56%	44%	55%	3.6
North Hollywood/Valley Village	138659	59104	6%	73%	27%	73%	2.3
Westlake	120455	44294	7%	96%	4%	95%	2.7
Palms/MV/DR	113794	55072	5%	70%	26%	74%	2.1
Boyle Heights	89529	24417	5%	74%	41%	59%	3.7
Sherman Oaks/Studio City/Toluca Lake/Cahuenga Pass	86605	43560	7%	57%	38%	62%	2.0
Sun Valley/La Tuna Canyon	85311	24969	5%	48%	63%	36%	3.4
San Pedro	79502	33002	8%	58%	41%	58%	2.4
West LA	78333	39192	7%	62%	26%	74%	2.0
Silver Lake/Echo Park/Elysian Valley	71460	30935	7%	67%	41%	59%	2.3
Westchester/Playa del Rey	62015	28643	7%	51%	37%	63%	2.2
Brentwood/Pacific Palisades	56950	27352	8%	39%	54%	44%	2.1
Westwood	55829	21528	13%	67%	15%	85%	2.6
Central City	44842	31067	13%	91%	1%	98%	1.4
Venice	35873	21293	14%	64%	35%	65%	1.7
Central City North	26085	8601	7%	87%	6%	94%	3.0

1. Total Vacant Units and TOC Unit Allocation

Pearson's correlation coefficient value is **0.065.** This indicates a very weak positive correlation, to no correlation between the total number of vacant units in a plan area and the TOC Units approved there.

2. Total Renter Occupied Units and TOC Unit Allocation

   Pearson's correlation coefficient value is **0.789.** This indicates a strong positive correlation between the total amount of renter-occupied units in a plan area and the TOC Units approved.

3. Total Single Housing Units and TOC Unit Allocation

   Pearson's correlation coefficient value is **0.0249.** This indicates a very weak positive correlation, to no correlation between the total number of occupied single housing units in a plan area and the TOC Units approved there.

4. Total Multiple Housing Units and TOC Unit Allocation

   Pearson's correlation coefficient value is **0.853.** This indicates a strong positive correlation between the total number of multiple housing units in a plan area and the TOC Units approved.

5. Total Dwelling Housing Units and TOC Unit Allocation

   Pearson's correlation coefficient value is **0.698.** This indicates a moderate to strong correlation between the total number of dwelling units in a plan area and the TOC Units approved.

Income Demographics and TOC Unit Allocation

Income demographics from all twenty-four community plan areas were collected to determine if there is a correlation with TOC Unit allocations, again using Pearson's correlation coefficient. This analysis aims to determine if there is a correlation between higher income/lower percent poverty and an increase in TOC approvals, which would indicate a possible disparity in allocation. The Table below displays the data used (refer to Table 3 for TOC data used).

Table 9: Income Demographics across 24 Community Plan Areas (sorted by Median Household Income)[46]

Community Plan Area	Median Household Income	Pop Below Poverty Line	% Pop Below Poverty Line
Brentwood/Pacific Palisades	$204,447	3467	6%
Westchester/Playa del Rey	$111,444	4789	8%
Venice	$94,173	4070	10%
Sherman Oaks/Studio City/Toluca Lake/Cahuenga Pass	$89,870	5542	18%
Canoga Park/Winnetka/Woodland Hills/West Hills	$85,089	21921	11%
West LA	$84,691	7622	10%
Westwood	$84,015	12379	23%
Palms/MV/DR	$77,445	12670	12%
Silver Lake/Echo Park/Elysian Valley	$64,987	9138	14%

[46] American Community Survey (ACS), 2014-2019

San Pedro	$64,500	11676	16%
Northeast LA	$57,478	38998	17%
Sun Valley/La Tuna Canyon	$53,715	13398	17%
Hollywood	$53,573	33660	18%
Van Nuys/North Sherman Oaks	$52,799	30054	24%
Mission Hills/Panorama City/North Hills	$51,875	28875	21%
North Hollywood/Valley Village	$50,132	23586	18%
West Adams/Baldwin Hills/Leimert	$47,788	32930	21%
Wilshire	$47,778	46522	18%
Boyle Heights	$38,808	24162	28%
Central City North	$37,708	4486	19%
Southeast LA	$36,605	94817	33%
South LA	$36,029	76558	28%
Central City	$34,914	15017	35%
Westlake	$30,670	38297	19%

1. Median Household Income and TOC Unit Allocation

   Pearson's correlation coefficient value is **-0.202**, which indicates a weak negative correlation between Median Household Income and TOC Unit allocation. The higher the income in a plan area, the fewer TOC Units are allocated there.

2. Population below the poverty line and TOC Unit Allocation

   Pearson's correlation coefficient value is 0.**289,** which indicates a weak positive correlation between the number of residents under the poverty line and the amount of TOC Units allocated.

Case Study: Wilshire and Hollywood

To conclude the results section, Wilshire and Hollywood are compared using all the data addressed in the section. This is displayed in the table below, in addition to a Mean of all values for the 24 community plan areas that were calculated using a t-test.

Table 10: Wilshire and Hollywood Comparison with Means of 24 Total Plan Areas[47][48]

Demographic and TOC Data	Wilshire	Hollywood	Mean of 24 Community Plan areas
Units Approved	4,613	1,596	641
Units Affordable	784	497	152
Percent of Units Affordable	17%	31%	22%
Extremely Low-Income Units	499	231	68
Very Low-Income Units	50	155	20
Low-Income Units	249	111	64
Total Population	280,597	195,709	130,776
White Population (Not Hispanic)	76,704	99,513	35,129
Black Population	19,867	9,447	13,006
Asian Population	74,055	20,516	15,264
Hispanic Population	101,112	58,830	62,969
Total Dwelling Units	132,040	108,423	51,008
Vacant Units	14,653	14,156	8,790
Renter Units	97,622	75,178	31,912
Single Housing Units	17,223	21,444	16,851
Multiple Housing Units	114,475	86,793	33,932
Median Household Income	$47,778	$53,573	$66,272
Population Below Poverty Line	46,522	33,660	24,776

[47] City Planning. (n.d.). L.A. City Planning Housing Progress Reports.
[48] American Community Survey (ACS), 2014-2019

Analysis

This section will analyze all results shown in the Results, broken down into Sub Question A and B that aim to answer the overall research question, “Are there notable disparities within the Measure JJJ/TOC incentive program regarding which neighborhoods receive more housing approvals, and which neighborhood characteristics correlate with more approvals?”.

Analysis for Sub Question A: Are there notable disparities within the Measure JJJ TOC incentive program regarding which neighborhoods receive more housing approvals?’.

Given the data collected in the results section, I can conclude that there are notable disparities within the TOC program concerning housing approvals distribution. There are many reasons behind why a community plan area may receive more approvals over another, making a distinct correlation or reasoning hard to identify. However, analyzing TOC Housing data shows the distribution across all plan-areas. This section will also identify side trends in allocation beyond just more or fewer approvals, such as income classification of affordable units.

Table 3 shows the most TOC Unit Allocations going predominantly to five community plan areas, with Wilshire at the top with the most approvals 4,613 units and Canoga Park/Winnetka/Woodland Hills/West Hills plan area with the least at 17 units. The twenty-four plan areas' variance is relatively high, as the Standard Deviation is 967 units with a Mean of 641 units. This indicates that most of the allocations are concentrated and not spread evenly amongst pan-areas, which is visible within Graph 1. This variance can be slightly expected because of where the TOC Tiers area is located, which is a ½ mile buffer around a qualifying transit stop. As shown in Maps 2, 3, and 4, most TOC buffers are situated along major transit lines, densely populated plan areas, or near Metro Rail lines.

Table 3 shows Affordable Units allocations, Wilshire receiving the most allocations at 784 units, and the Brentwood/Pacific Palisades plan area only receiving 2. As with Total TOC Units, there is a large variance, with a Standard Deviation of 215 units and a Mean of 152 units. Given the relationship between Total Units and Total Affordable Units, due to the required minimum based on Tier allocation, this similarity in disparity is to be expected.

In addition to total and affordable units, unit distribution amongst the three income tiers is also analyzed. Overall, this indicates a secondary disparity within TOC Unit allocation. Developers are overwhelmingly choosing ELI Units and LI Units. Table 5 shows the units' distribution amongst the three categories, with Table 6 showing calculated averages and totals. 1620 affordable units are ELI, 1531 are LI, and only 469 are VLI. Table 2 shows that ELI has the lowest unit requirements due to being the lowest income bracket, with 8% in a Tier One. LI has the highest unit requirement at 20% in a Tier One; however, it has the highest price out of all three. VLI seems to fall into an awkward in-between, where it has a moderate price that is not as cheap as LI Units, with a higher unit requirement than ELI. As described in the Literature Review section, the authors of the article in Cityscape[49] found in their evaluation of income tier distribution amongst units and increased Internal Rate of Return (IRR) for developers building majority ELI. This finding ties into my results which show a high prevalence of ELI across the 24 plan areas, as more profit can be attained by focusing purely on ELI, which enables a higher percentage of units to remain market rate, a notable disparity in addition to the general disparity with overall TOC Unit allocation.

[49] Zhu, L., Burinskiy, E., De la Roca, J., Green, R. K., & Boarnet, M. G. (2021).

Analysis for Sub Question B: Which neighborhood characteristics correlate with more approvals?

Sub Question B will be analyzed by section in which results were displayed initially, starting with Population and Race, and ending with Income. All demographic data is directly compared to the TOC data analyzed above.

Population and Race

Population and Race were examined in comparison with TOC Housing data to determine possible correlations between certain races/numbers in Population and an increase or decrease in housing approvals. A Pearson's value at 0.472 saw a moderate positive correlation with population and Unit allocation, which is generally expected as most new housing approvals would most likely be where the most people are. This trend is followed, with one prominent exception being the Southeast LA plan-area. With the largest Population of all 24 plan-areas, over 300,000 people, it received only 314 units, with 295 being affordable.

Pearson's coefficient values for the four racial groups analyzed showed the strongest correlation with housing for Asian and Non-Hispanic White populations, 0.813 and 0.405, respectively. The Black and Hispanic Populations had a much weaker correlation with TOC housing, 0.149 and 0.190, respectively, which indicates a possible disparity in allocation. This indicates that the more Black and Hispanic residents within a plan area, the less likely they will receive TOC housing than areas with more Non-Hispanic Whites and Asians.

Housing Demographics

As depicted in Table 8, housing Demographics results indicate relative success for the TOC program when tested for correlation with unit allocation. Strong positive correlations were

found for Total Multiple Housing Units (apartment buildings etc.) and Total Renter Units when compared with TOC data, 0.853 and 0.789, respectively. This indicates that communities made up mostly of non-homeowners/renters, usually lower income, are receiving more multi-unit housing through TOC. This is shown further with a correlation value between single housing units and TOC Units being 0.0249, a very weak number that indicates almost no correlation at all.

Income

The results from Income, depicted in Table 9, showed that more units were being allocated to plan-areas with lower Median Household Incomes, with a coefficient value of -0.202, showing a weak correlation. Regarding the program's equity and an overarching goal of increasing affordable housing stock, this result is relatively successful as some plan-areas in need are receiving more units. This is backed by the Population below results below the poverty line, which had a weak to moderate positive correlation with TOC Units, at 0.289. This can also be partially attributed to the fact that plan-areas with a more significant Median Income tend to be smaller in Population. Their geography (on hills/suburban) reduces their likelihood of receiving TOC units as they are not within a transit buffer, as seen with high-income areas Brentwood and Playa del Rey (refer to Map 1 and 2).

Case Study: Wilshire and Hollywood

Data compared between these two plan areas and the Mean's of all 24 plan areas (refer to Table 10) allows a closer examination of possible trends missed in previous sections. Wilshire has by far the most approvals at 4,613 and a large Hispanic population and is slightly below the average Income at 47,778. Hollywood has 1,596 approvals, a predominantly Non-Hispanic White population, and a higher income at 53,573. Wilshire also has a much larger population at

280,597; however, we have seen with Southeast LA that high Population does not always correlate with more TOC approvals. Hollywood stands apart due to its high affordability percentage at 31%, which is 9% higher than average, while Wilshire sits at 17%.

The Metro Purple Line extension down Wilshire Blvd has created seven new Metro stations, each acting as the center of a TOC tier buffer of a half-mile. Roughly, this addition has added 38 square miles of new TOC eligible land in Wilshire alone, a key reason for this significant disparity[50]. The question remains how Wilshire managed such a low number of affordable units relative to its Population. If Hollywood had received the same number of approvals and retained its affordability percentage, it would have double the affordable units as Wilshire.

Summary of Results

Intending to answer the overarching research question, 'Are there notable disparities within the Measure JJJ/TOC incentive program regarding which neighborhoods receive more housing approvals, and which neighborhood characteristics correlate with more approvals?', there are parts in which can and cannot be answered. Sub question A can be answered as there were multiple disparities located within TOC data results that saw high variance in allocations and trends in income tier allocation amongst units. In particular, the preference for building ELI raises questions over whether incentives were too strong for that category, as fewer total affordable units may have resulted.

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[50] METRO. (n.d.). Purple Line Extension. Retrieved April 01, 2021, from https://www.metro.net/projects/westside/

Sub question B obtained some answers regarding correlation with neighborhood statistics. Overall, the results showed that Black and Hispanic neighborhoods lacked TOC Units; however, there were correlations between low income, majority renter plan-area is receiving an increase in TOC Units, a sign of possible equity being achieved. Lastly, the case study highlighted the vast number of allocations Wilshire had received but how it failed to meet the average of affordable units. Also, the case study showed the importance of transit and plan area location in even presenting the opportunity to propose Units within the TOC program. This is not equal across all plan areas in L.A., as not all thirty-six plan areas were even able to be included in this analysis, and some had minimal allocations.

Policy Recommendations

As seen with initial data laid out in the background and literature review, backed up by results collected in my own, the TOC program's major success has stemmed from its ability to generate a large number of new housing approvals in a relatively short time. TOC also does it at a considerably higher rate than previous programs run by the City of L.A. However, its shortcoming lies mainly in its incentive structure and disparities in its allocation of units across plan areas.

Although the incentives have attracted more developers to build, the program's flexibility regarding unit income classifications may reduce the overall potential of TOC to produce as many affordable units as possible. This is shown in my results, which indicate a preference for ELI units due to their lower total unit requirements and proximity in high-income neighborhoods

and backed up by the Cityscape article in my literature review, which discovered a higher IRR for ELI over the other two groups[51].

A policy I would recommend to help boost overall affordable housing stock and prevent developers from building only the minimum affordable units would be to adjust the TOC program's incentive structure slightly. Since developers are taking advantage of incentives, such as increased density, reduced building time, and reduced cost, they target high-income neighborhoods more frequently to build. A solution could be to tighten down incentives in areas that are high income and increase the proportion of units that must be VLI and LI. For example, with reference to Table 2, a proportion could be 10% ELI in a Tier One area instead of just 8% and similarly increased for VLI and LI. Developers would still retain a relatively high IRR due to the value of the land, but more affordable units may be built. Section 8 of the TOC eligibility list indicates that a developer may request a lower TOC tier than designated initially, reducing the number of affordable units required despite proximity to transit (the higher the tier, the more affordable units required). I think to stem the trend of building ELI primarily, this option should be removed from the program, as it will be mainly used in high-income areas where less affordable units equate to a higher profit.

In addition, my results showed fewer unit allocations going towards predominantly low-income Black and Hispanic neighborhoods. Potential remedies within the TOC program could be an increase in housing development incentives in those areas, with covenants that restrict housing to primarily local residents at an affordable rate to prevent possible displacement and gentrification. As stated in the literature review, over half of Metro riders are low income and

[51] Zhu, L., Burinskiy, E., De la Roca, J., Green, R. K., & Boarnet, M. G. (2021).

35% percent live within TOD zones[52]. They should have an equal ability to benefit from the program as middle and upper-class Angelenos.

Due to TOC's reliance on existing transit stops to create tiers and allocate housing, some areas of L.A. that are less accessible by public transit or do not contain major transit stops, such as Metro lines, are left out of the program. The TOC program is structured to make it hard to get housing allocated evenly due to concentrations of new units in these transit-rich areas. As TOC pushes into the future, I believe a policy recommendation for it could be to ease requirements for low-income areas that are public transit sparse, such as parts of the Fernando Valley and Southeast LA. This way, they can start to benefit from the program without waiting years for proper transit infrastructure to be built. L.A. has a relatively low vacancy rate, and recent exodus trends to cheaper counties and cities have increased housing stock. Still, arguably an essential task is creating enough adequate affordable housing that goes to those in need of it most. The TOC program has been a successful start but still needs some changes to ensure equity in distribution.

Conclusion

Summary

This paper's overall aim was to evaluate the TOC program's potential flaws in the allocation of affordable housing and look at how it has succeeded in the last four years, directed through the research question; *Are there notable disparities within the Measure JJJ/TOC incentive program regarding which neighborhoods receive more housing approvals and which*

[52] Cranor, J. et al. (2015). Oriented for Whom? The Impact of Transit-Oriented Development on Six LA Communities. *UCLA Comprehensive Project,* 1-16.

neighborhood characteristics correlate with more approvals? This question is answered using quantitative data analysis of TOC and demographic data from all 24 community plan areas. Descriptive statistical analysis, including visualization of data through tables and graphs, were the main methods. Results showed a disparity in this allocation, as some areas possessed more units than others, while many plan-areas did not quality at all to receive TOC housing. There was also a disparity identified with the allocation of affordable units across income classifications, with a higher preference for building ELI units, showing possible loopholes being exploited by developers trying to build as few affordable units as possible to maximize profits.

The results also determined that certain demographics correlated with less TOC approvals, including majority Hispanic and Black neighborhoods. Majority renter and lower-income areas correlated with having increased TOC approvals and areas that contained more multiple-housing units than single-family homes. Overall, this showed varied success for the TOC program as some aspects showed equity in distribution while others indicated possible disparities. Overall, the results showed that the reliance on existing public transit infrastructure in plan-areas to obtain housing created an unfair playing field in the City. Some areas deemed to be deserving of more affordable access are kept out of receiving any allocations due to arguably little fault of their own. Potential improvements to the program could involve adjusting incentives to benefit working-class people rather than over-benefit developers, as well as trying to direct housing to more areas in need. In addition, some sort of temporary housing bonus might be considered for areas that are lacking transit, until they can establish TOC tiers and receive unit approvals.

Limitations

The main limitations of this research were mainly found within the data collection and analysis. I had a hard time navigating the L.A. City databases to find TOC permits to use. It would have provided me with more detailed information regarding where exactly units were being built, by who, and at what cost. Data requests that I sent out to various City Government departments were either denied or not responded to. This data could have enabled my analysis to extend further and better address existing disparities or find new results to back up any claims. This was seen in the Cityscape article[53] I read evaluating the TOC program, where superior data collection and overall knowledge of City Planning functions enabled a much more in-depth analysis than my own.

Another limitation stemmed from the organization of data on the City Planning website regarding demographics. It was all sorted into PDFs, with no downloadable data sets available even after request. This forced me to narrow my variables down to a manageable number to copy and paste them individually. If there was a method to receive the data as one single file, more results and analysis might have been possible.

Future Additional Research

In the future, additional research that might benefit this analysis would be the creation of a power analysis of developers that use the TOC program. This is due to findings both in my results and other papers that indicate the over-benefitting of developers to build less affordable units. By gathering data that shows who exactly is building and at what cost, research may be able to identify if some individuals and companies profit the most from the TOC program. This

[53] Zhu, L., Burinskiy, E., De la Roca, J., Green, R. K., & Boarnet, M. G. (2021)

analysis could garner support for reform of the program to ensure equity, and that developer interests are not being placed in front of Angelenos.

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