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# Resisting Displacement and Climate Change in Pacoima – An Analysis of Commercial Anti- Displacement Strategies, Climate-Resilient Infrastructure and ADU Formalization

A comprehensive project submitted in partial satisfaction of the requirements for  
the degree Master of Urban and Regional Planning

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**Disclaimer:**

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## **Executive Summary**

### **Project Area and Background**

Pacoima is a working-class community in the northeast San Fernando Valley region of Los Angeles facing multiple planning-related challenges. The area grew as postwar neighborhoods typically did: with wide boulevards and swaths of single-family homes. Since the 1980s, high-polluting industries have been detrimental to the human and environmental health of Pacoima. Its suburban development patterns have led to overcrowding as greater Los Angeles faces rising rents, stagnating wages, and a growing population. In response, Pacoima Beautiful, a grassroots environmental justice organization, has been providing education to residents, organizing community members to shape public policy, and promoting local arts to empower a healthy and sustainable San Fernando Valley.

Due to climate change, the community of Pacoima faces multiple environmental challenges such as extreme heat and sporadic rainfall. Residents who lack access to resilient or secure housing are most impacted by climate change events. In addition to the climate crisis, Pacoima—like most of Los Angeles—is battling a housing crisis. Pacoima residents have responded to the housing needs with the construction of Accessory-Dwelling Units (ADUs), unpermitted housing units, on single-family flats. Amidst climate change vulnerabilities and the housing crisis, Pacoima is anticipating major light rail transit development. The Los Angeles County Metropolitan Transportation Authority (LA Metro) plans to build a 9.2-mile at-grade light rail transit line through the San Fernando Valley, cutting through Pacoima. While transit expansion promises increased access and mobility, the light rail project may accelerate displacement, gentrification, and cultural erasure in Pacoima. These issues pose various diverse challenges for the residents of Pacoima.

Given environmental vulnerabilities in Pacoima, the Green Together Collaborative—which includes Pacoima Beautiful and partnering organizations—received a \$23 million Transformative Climate Communities (TCC) grant in 2018 to implement urban greening and streetscape improvement projects in Pacoima and Sun Valley. While green infrastructure investments could benefit residents, there is hesitation to implement climate-resilience projects due to the potential for green infrastructure to increase property values and cause displacement. To address risks of gentrification and displacement, the California Strategic Growth Council requires TCC awardees to develop and implement a Displacement Avoidance Plan (DAP). Our client, Pacoima Beautiful, is responsible for the management of the DAP. This research project aims to support Pacoima Beautiful in its green infrastructure project, DAP, and overall mission to promote environmental justice, and healthy, safe, and sustainable community development.

### **Project Vision**

In 2019, students from the Department of Urban Planning at the University of California, Los Angeles, developed *A Community of Casitas: Fighting Displacement in Pacoima with ADUs and CLTs* for Pacoima Beautiful as their client. That report explored how Pacoima Beautiful can design and implement ADUs and Community Land Trusts to mitigate gentrification and displacement in Pacoima. This project aims to augment the 2019 report to reflect the diverse set of challenges that Pacoima faces and develop a more holistic approach to combat displacement. More specifically, *the goal of this research is to help Pacoima Beautiful identify effective community organizing strategies for small businesses in response to transit-induced displacement, design interventions to make residential land more resilient to climate change, and mechanisms to formalize unpermitted housing stock in Pacoima.*

## **Project Objectives**

This research project has three primary objectives:

1. To understand other communities' responses to rail-related commercial displacement pressures and to examine concerns, experiences, and priorities of small businesses in Pacoima
2. To identify climate-resilient infrastructure interventions at the residential level that will improve quality of life for low-income communities of color while minimizing community displacement in Pacoima
3. To examine how existing, unpermitted ADUs in Pacoima can be made more livable and safe and to develop mechanisms that formalize the unpermitted ADU stock in Pacoima

## **Project Scope**

In the following chapters, we provide an extensive analysis of commercial anti-displacement strategies and concerns of small businesses, relevant climate-resilient infrastructure interventions, and city-level mechanisms to formalize ADUs in Pacoima.

In chapter one, we examine community responses to rail-related commercial displacement pressures and specific concerns of Pacoima small businesses in view of the upcoming light rail transit line. For this chapter, we perform a literature review, draw on lessons learned through case studies of three transit-oriented communities in Los Angeles, and develop and implement a small business survey along Pacoima's commercial corridor. From our literature review, we learn that extant scholarship on commercial anti-displacement is limited, but that several anti-displacement tools may be viable. Findings from our case studies illustrate that businesses benefit from a formal association, technical assistance, and community-owned land. Our survey finds that Pacoima small businesses are not formally organized, have limited

information on the light rail project, and would like technical assistance and financial support. Based on our findings, we identify recommendations that fall into four categories: (1) areas for further research; (2) strategies for building community power; (3) strategies for preserving Pacoima's vibrant commercial community; and (4) opportunities for Metro to better support small businesses.

In chapter two, we investigate the potential for green infrastructure at the household level that targets heat and flooding-related concerns in the Pacoima-Sun Valley TCC study area. In doing this research, we also assess the relationship between urban greening and displacement through a literature review. This review exposes a gap in the literature on this topic: that climate-resilient design interventions often focus on the public realm, namely parks and streets, rather than private housing, which dominates the landscape of Pacoima. We then conduct a spatial analysis on the Pacoima section of the TCC project area to quantify the potential for household interventions. To ensure that our research and recommendations are centered on the community's interests and needs, our methodologies also include site surveys and a focus group composed of Pacoima community members. Findings from the first chapter culminate into a toolkit that offers six initial climate-resilient infrastructure interventions at the household level accessible and appropriate for low-income households in Pacoima.

In chapter three, we examine how existing unpermitted ADUs in Pacoima can be made more livable and safer. Based on our findings, we develop recommendations to formalize the unpermitted ADU stock in Pacoima. We then conduct semi-structured interviews with California City and County Planning Offices and analyze case studies of cities and counties that have adopted amnesty and/or legalization programs for unpermitted ADU's. Our research finds that while there is much support and advocacy for ADUs, the California Building Code serves as the ultimate governing entity in which there is little flexibility for unpermitted structures. Planning,



Building, and Code Enforcement Divisions have the power to heavily reduce and waive development standards, plan checks, permitting fees, and penalties. Our research illustrates that inter-departmental collaboration and Embedded Planning efforts within city and county governments are essential to successful efforts aimed at preserving ADUs.

Whether induced by incoming transit infrastructure investments, climate change, or informal housing, residents and business owners in Pacoima are vulnerable to displacement on various fronts. Our research illustrates how Pacoima residents can be resilient to the continuously developing conditions of their community. As scholars, advocates, and policy professionals, we are responsible for collaborating to address climate challenges, housing crisis, and displacement risks faced by Pacoima residents to accommodate their needs and support the community as it continues to thrive.

# Chapter 1

## Transit-Oriented Development Without Displacement:

### Strategies to Help Pacoima Businesses Thrive

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#### **Abstract**

The East San Fernando Valley light rail will bisect Pacoima's main commercial corridor, Van Nuys Boulevard. Considering the displacement, gentrification, and cultural erasure risks associated with rail expansion, this research asks (1) how can community groups respond to rail-related commercial displacement pressures?; and (2) what are the concerns, experiences, and priorities of Pacoima small businesses? To address these questions, we undertook a literature review, draw on lessons learned through case studies of three transit-oriented communities in Los Angeles, and developed and implemented a small business survey along Pacoima's commercial corridor.

From our literature review, we learned that extant scholarship on commercial anti-displacement is limited, but that there are several anti-displacement tools, including commercial community land trusts (CCLTs), right to counsel, commercial rent control, and cultural heritage commercial corridors that may be viable. Through our case studies, we learned that businesses benefit from a formal association, technical assistance and funding, and community-owned land. Lastly, through small business surveys, we found that Pacoima small businesses are not formally

organized, have limited information on the light rail, and would like technical assistance and financial support.

Based on our literature review, case studies, and small business survey, we identified recommendations that fall into four categories: (1) further research on defining and measuring success of commercial anti-displacement work; (2) strategies for building community power: business associations and specialized assistance; (3) residential anti-displacement strategies and cultural districts as tools for preserving Pacoima's vibrant commercial community; and (4) opportunities for Metro to support small businesses earlier and with more funding.

*Keywords: Commercial Anti-Displacement, Business Organizing, Transit-Oriented Displacement (TOD), Rail Investments*

## Foreword

Bounded by mountains and freeways, the culturally-rich, working-class community of Pacoima faces a legacy of environmental degradation and historical injustice. Power plants, landfills, toxic release sites, lead contamination, freeways, and a municipal airport create a powerful cocktail of airborne and ground soil pollution, causing substantial impacts to community public health. Pacoima residents, who are 85% Latinx and 7% Black, experience hospitalization from asthma and heart attacks at rates significantly higher than the rest of California (Pacoima Beautiful, 2016). In Pacoima, eight per 10,000 people get rushed to the emergency room from heart attacks – higher than 45% of other California census tracts (*CalEnviroScreen 3.0*, 2016). Climate change-induced extreme heat and wildfires exacerbate these health and environmental vulnerabilities for residents of Pacoima, a Los Angeles neighborhood located in the Northeast San Fernando Valley.

In 2018, the Green Together Collaborative secured a \$23 million Transformative Climate Communities (TCC) grant to implement urban greening and streetscape improvement projects in Pacoima and Sun Valley. The statewide Transformative Climate Communities (TCC) Program “empowers the communities most impacted by pollution” to develop projects that reduce greenhouse gas emissions, strengthen the local economy, and improve public health and the environment (*Green Together: Northeast San Fernando Valley*, 2019). Working with community partners, TCC directs dollars from California’s cap-and-trade program toward neighborhood-level development and infrastructure projects in historically underinvested communities. Components of the Green Together Collaborative plan for Pacoima include street enhancements to improve pedestrian mobility, electric buses and EV Charging Stations, solar installation on single-family homes, park improvements and stormwater management, tree planting, and

workforce development in the green sector (*Green Together: Northeast San Fernando Valley*, 2019).

## **Introduction**

Located in the East San Fernando Valley, Pacoima is home to a bustling small business community, especially along Van Nuys Boulevard, the neighborhood's main commercial corridor. Murals embellish businesses, many of which have served the community for decades.

The Los Angeles County Metropolitan Transportation Authority (Metro) plans to build a 9.2-mile, at-grade light rail transit line through the San Fernando Valley, connecting the Van Nuys Metro G Line (Orange) station to the Sylmar/San Fernando Metrolink Station. The East San Fernando Valley Light Rail Project will run along Van Nuys Boulevard, the heart of Pacoima's commercial corridor, increasing transportation access throughout the San Fernando Valley (*East San Fernando Light Rail Transit Project*, n.d.).

Despite increased access and mobility, transportation infrastructure investments in historically underinvested communities carry inherent concerns of gentrification, displacement, and cultural erasure, including for ethnic small businesses. Specifically, the light rail project will directly displace several businesses through site acquisition, create construction disruptions that impose long-term impacts on business health, and potentially contribute to long-term gentrification and displacement in the commercial corridor.

The Transformative Climate Communities grant requires the Green Together Collaborative to develop and implement a Displacement Avoidance Plan (DAP) that assesses displacement vulnerability among residents and small businesses and implements anti-displacement strategies. The plan, which Pacoima Beautiful will carry out with support from the

UCLA Center for Neighborhood Knowledge, emphasizes the combined risks that this green infrastructure investment and the new rail transit line present for the community. To date, Pacoima Beautiful's DAP work has focused on residential displacement avoidance strategies; this research addresses the gap in commercial anti-displacement strategies, specifically related to the rail project.

Figure 1. East San Fernando Valley Light Rail Project Area (Los Angeles County Metropolitan Transportation Authority, 2020)

### East San Fernando Valley Light Rail Transit Project Study Area



To fill this gap, our research asks:

1. How can community groups respond to commercial displacement pressures from rail transit expansion and ensure thriving community businesses?
2. What are the concerns, experiences, and priorities of Pacoima businesses that will be affected by rail-related displacement pressures?

Our report begins with a summary of existing academic literature on the need for commercial displacement avoidance strategies, existing policies and practices, and the dearth of research in this area. We then pose our two related research questions. Third, we describe our two methodologies for addressing these questions — case studies of transit-oriented communities and a small business survey — and follow each with our findings and key takeaways. We conclude with our recommendations, which we divide into four categories, as shown in Table 1 below.

*Table 1. Recommendation Categories*

<b>Recommendation Categories</b>
<ol style="list-style-type: none"><li>1. Further research on defining and measuring success of commercial anti-displacement work;</li><li>2. Strategies for building community power: business associations and specialized assistance;</li><li>3. Residential anti-displacement strategies and cultural districts as tools for preserving Pacoima’s vibrant commercial community; and</li><li>4. Opportunities for Metro to support small businesses earlier and with more funding.</li></ol>



## Background and Literature Review

While attempting to provide car-free mobility, rail investments can accelerate the displacement of historically marginalized residents and small businesses. Transit-oriented development (TOD) tries to cure auto-dependency, curb city sprawl, and cut air pollution and greenhouse gas emissions by building medium-density, mixed-use developments within half a mile of transit stations. TOD improves transportation access and provides mobility beyond cars. This is especially relevant for Pacoima, where the percentage of transit-dependent riders is more than 100 percent higher than the County average, and zero-vehicle households is 77 percent higher (*Final Environmental Impact Statement/Final Environmental Impact Report (Volume 1) for the East San Fernando Valley Transit Corridor Project*, 2020). TOD, while seeking to advance equitable outcomes for low-income communities of color suffering the brunt of air pollution, climate change, and traffic violence, carries the inherent risk of exacerbating gentrification and displacement in those same communities (Zuk et al., 2018).

The existing literature describes gentrification and displacement as interrelated, but distinct, phenomena. Gentrification in the residential context occurs when investment and people with educational and income levels higher than those of the current residents move into a neighborhood. Displacement occurs when lower-income residents move out because they are priced out of the neighborhood. While displacement generally follows gentrification, gentrification does not always precipitate displacement (Chapple & Loukaitou-Sideris, 2019).

As the affordable housing crisis in Los Angeles County pushes families farther to the periphery, incumbent families and businesses in Pacoima face rising precarity and vulnerability. The Urban Displacement Project, a joint effort by UC Berkeley and UCLA, found four indicators of residential gentrification in Pacoima in and around the project area, from Van Nuys Boulevard

to Osborne Place and San Fernando Boulevard to Glenoaks Boulevard: shifts in (1) racial/ethnic composition of residents, (2) educational attainment, (3) median household income, and (4) share of renter households (Community Partners, 2018a). Commercial and residential gentrification operate in tandem; identifying which comes first depends on regional context (Kasinitz et al., 2015). In Los Angeles, residential gentrification significantly predicts commercial gentrification. Though the academic literature lacks consistency in defining commercial displacement, the rising costs of commercial rents and the loss of lower-income clientele drive displacement (Chapple & Loukaitou-Sideris, 2019). The Urban Displacement Project also found evidence of commercial gentrification in Pacoima. Since 1990, Pacoima businesses face higher churn rates of discretionary shopping businesses, and decline in shares of minority-owned and non-chain small businesses (Community Partners, 2018b). These indicators of gentrification in Pacoima's commercial corridor point to the need for anti-displacement policies and programs, especially with the infusion of capital coming with the East San Fernando Light Rail Transit Project.

### **Impacts of rail transit investments on communities**

Unlike the study of residential gentrification and displacement, the study of commercial gentrification and displacement — and therefore the study of anti-displacement interventions — remains limited and inconsistent. The literature examining the connection between rail-transit investments and commercial gentrification and displacement is even thinner. One study found that between 2010 and 2013, eight percent of transit neighborhoods in Los Angeles County experienced residential gentrification and displacement (Chapple & Loukaitou-Sideris, 2019). Regression modeling did not establish a causal relationship between the presence of transit stations and either residential or commercial gentrification and displacement. However, Chapple & Loukaitou-Sideris found that census tracts with a transit station were more likely to experience

gentrification and displacement than census tracts without. Much of the analysis on the impacts of rail transit investments focuses on rising property values (Ray, 2015). For example, a study by Weinberger (Weinberger, 2001) found that commercial properties located within a quarter-mile radius of transit stations in Santa Clara County experienced higher rents compared to those within a half-mile radius. Another study showed that commercial properties within a quarter-mile radius from the transit station were 12.2% more expensive than residential properties (Debrezion et al., 2007). However, the ways in which real transit investments directly impact property values remain unclear (Giuliano & Agarwal, 2010). Consequently, important questions arise: To what extent do transportation investments instigate commercial gentrification and displacement in environmental justice communities? How does rail transit construction affect business revenue during the construction phase? What are the impacts on ethnic small businesses once the transit line becomes operational?

### **LA Metro's Transit Oriented Communities (TOC) Policy**

Metro launched a pilot Transit Oriented Communities (TOC) program in 2015 and formalized its TOC Policy in 2018 to recalibrate TOD within an equity framework: “TOCs promote equity and sustainable living by offering a mix of uses close to transit to support households at all income levels, as well as building densities, parking policies, urban design elements, and first/last mile facilities that support ridership and reduce auto dependency” (*Transit Oriented Communities*, n.d.). Metro finds itself in the unique role of putting transportation dollars toward housing through the Joint Development Program, its real estate arm. Thirty-five percent of new housing units built on Metro-owned property must be affordable units, reserved for households earning 60% or below of the area median income (AMI) (*Metro Joint Development Program*, n.d.). While the TOC Implementation Plan aims to integrate

equitable planning into all Measure M funded projects, including the East San Fernando Valley Light Rail Transit Project, its strategies for business stabilization and commercial anti-displacement are inchoate and ambiguous (Carvajal et al., 2020). It is unclear how Metro's TOC policy will apply to ethnic community businesses in Pacoima.

### **Practices to stabilize small businesses at risk of displacement**

Given the displacement risks that businesses face, small businesses and community organizations across the United States have advocated for and secured a range of business stabilization strategies. These range from commercial rent regulation assistance to set-asides of affordable commercial space for locally-owned small businesses to commercial community land trusts (Cassola, 2018; PolicyLink, n.d.). For example, the City of Seattle General Fund and Federal Community Development Block Grant (CDBG) supported the establishment of the small business stabilization fund to help businesses facing displacement risk (City of Seattle Office of Economic Development, n.d.).

#### *Commercial community land trusts (CLTs) as anti-displacement*

Impacted businesses and community-based organizations have also pushed for community ownership of commercial spaces through commercial community land trusts (CLTs). Commercial CLTs in Albuquerque and New Orleans offer successful models for community land ownership (Policylink, n.d.). Established in 1994, the Sawmill CLT in Albuquerque is a mixed-use model that contains both commercial and residential developments. The Sawmill CLT was achieved through a community-driven planning process to redevelop a neighborhood between Old Town and downtown Albuquerque (*Sawmill | Community Land Trust*, n.d.). Underinvestment in the neighborhood and pollution burden from industrial facilities prompted

the establishment of the Sawmill CLT. Similarly, in New Orleans, the Crescent City CLT (CCCLT) incorporated commercial spaces in its CLT model (*Affordable Solutions*, n.d.). The CCCLT emerged after Hurricane Katrina, and commercial spaces owned by the CCCLT help nonprofits and small businesses in Crescent City stay without the risk of being priced out (Sorce, 2012).

### *Cultural preservation as community asset-building and anti-displacement*

Establishing a commercial corridor for cultural preservation is one of the many approaches to commercial anti-displacement and community asset-building. As the nucleus of Latinx cultural and economic activity and political activism, the Calle 24 Latino Cultural District in San Francisco's Mission District provides a model for how businesses, community groups, and city agencies can unite to protect and preserve small businesses facing displacement pressures. The 24th Street commercial corridor is home to hundreds of community ethnic businesses. This corridor has been a beacon of the muralist movement since the 1930s and depicts the lives, livelihoods, history, and activist struggles of the Latinx community. The corridor, situated in close proximity to a Bay Area Rapid Transit (BART) station, has also undergone gentrification since the mid-1990s.

Through a collaboration between community leaders, merchants, the District Supervisor, and two preservation organizations, the San Francisco Board of Supervisors voted unanimously in favor of a resolution to adopt the Calle 24 Latino Cultural District (Calle 24 LCD) in 2014 (Strategic Economics, 2016). The resolution legitimized the importance of stabilizing businesses that face rising rents and other economic pressures by giving Calle 24 LCD the opportunity to work collaboratively with the San Francisco Planning Department. This led to the creation of a special use district, a zoning modification designed to preserve cultural and commercial assets in

the community (*Calle 24 Latino Cultural District*, n.d.). A formal organization that supports small businesses can foster a community space that brings together advocacy efforts to gain more equitable access to capital and technical support resources for small businesses (Strategic Economics, 2016). Today, the Calle 24 LCD operates as a nonprofit organization with a mission to “preserve, enhance, and advocate for Latino cultural continuity, vitality, and community in San Francisco’s touchstone Latino Cultural District and the greater Mission neighborhood” (*Mission and Vision*, n.d.).

The collaboration of small business owners and the artist community in San Francisco produced a strategy that uplifts Latinx businesses, caters to the needs of the surrounding community, and contributes to the cultural vibrancy and diversity of the city. Moreover, this consolidated partnership provides stakeholders of the 24th Street corridor a powerful seat at the decision-making table, especially as it relates to the future development of the corridor.

### Literature Review Conclusion

Promising residential anti-displacement strategies that may also support commercial anti-displacement movements include commercial rent control ordinances (Diamond et al., 2018), tax abatements or contract requirements with landlords with the provision that they not raise rents (Phillips, 2020), and tenant protections via right to counsel during eviction proceedings (A. Loukaitou-Sideris, personal communication, April 22, 2021; New York City Office of Civil Justice, 2020). Overall, the literature on commercial anti-displacement remains in its infancy. A comprehensive assessment methodology to determine the efficacy of proposed commercial anti-displacement strategies is lacking. Acknowledging this gap, our research conducts case studies of similar TOD communities to understand the strategies implemented in each case.

## **Research Questions**

Our research seeks to understand how communities can respond to displacement pressures from light rail transit projects to help inform Pacoima Beautiful’s organizing efforts. Further, our research analyzes the existing business conditions on Van Nuys Boulevard in Pacoima to gauge potential commercial displacement risks, as well as business owners’ perspectives on the proposed light rail project. Given these interests, our research addresses the following questions:

1. How can community groups respond to commercial displacement pressures from rail transit expansion and ensure thriving community businesses?
2. What are the concerns, experiences, and priorities of Pacoima businesses that will be affected by rail-related displacement pressures?

## **Research Approach and Methodology**

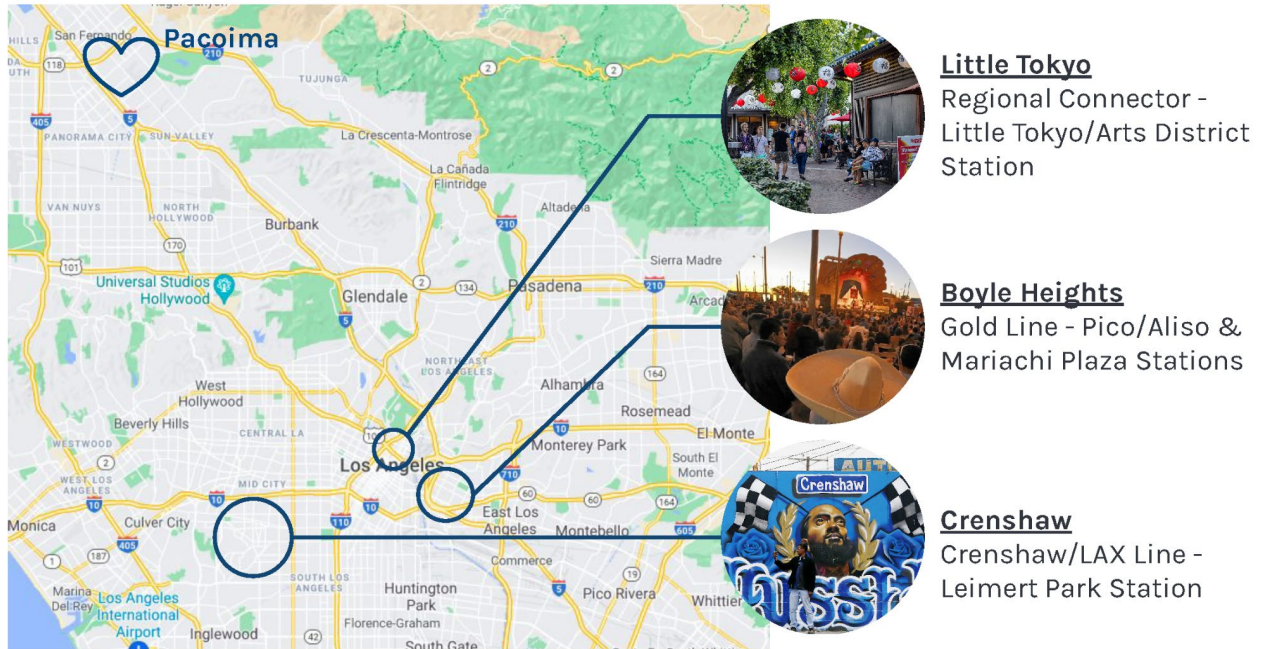
Our research methodology pursues two main avenues: (1) case studies of transit-oriented neighborhoods in Los Angeles through the lens of community-based organizations involved in anti-displacement advocacy; and (2) a survey of Pacoima small business owners and managers along Van Nuys Boulevard to assess their needs and perspectives on the proposed transit investment.

### **Case Studies**

The purpose of the case studies is to understand other communities’ responses to transit-related commercial displacement pressures. Following a review of media reports and academic literature related to commercial anti-displacement, we prioritized three Los Angeles communities with major light rail investments, robust community responses, thriving business communities,

and household income and non-white population profiles similar to Pacoima's. These communities are Little Tokyo in Downtown Los Angeles, Crenshaw in South Los Angeles, and Boyle Heights in East Los Angeles.

Figure 2. Map of Case Study Communities



For these case studies, we interviewed three community-based organizations involved in community-led responses to the light rail project in their respective neighborhoods, an organization focused on small business financing and advocacy across the region, and LA Metro, the local transit agency. These organizations are listed in Table 2 below. For each organization, we interviewed a staff member with direct experience advocating for, developing, or implementing commercial displacement avoidance strategies.



Table 2. Summary of Interviewees

Organization	Relationship to Project
Little Tokyo Service Center	LA Metro Regional Connector - Little Tokyo/Arts District Station
Destination Crenshaw	LA Metro Crenshaw/LAX line - Leimert Park Station
Community Power Collective	LA Metro Gold Line - Pico/Aliso and Mariachi Plaza Stations
Inclusive Action for the City	Small business financing and advocacy work
Los Angeles County Metropolitan Transportation Authority	Agency implementing light rail projects in three case study communities

The interviews covered a series of questions about (1) organizing strategies and challenges, (2) business needs and support services, (3) adequacy of Metro’s support programs, and (4) displacement avoidance strategies. We conducted all interviews via Zoom, and each lasted approximately an hour. Interview questions are in Appendix A. An overview of the interviewee organizations follows.

Little Tokyo Service Center

Founded in 1979, Little Tokyo Service Center (LTSC) provides social welfare and community development services in Downtown Los Angeles and Los Angeles at large (*Home*, n.d.). LTSC’s work focuses on community revitalization and cultural preservation in Little Tokyo. To ensure that transit investment supports communities, LTSC has advocated for benefits for neighborhood residents and preservation of the history and culture of the area, particularly in relation to the development of Metro’s Regional Connector that passes through Little Tokyo (Ray, 2015).

### Destination Crenshaw

Destination Crenshaw is a community-inspired project that evolved in response to Metro’s construction plans for the Crenshaw/LAX light rail line. This project leverages Crenshaw Boulevard and a 1.3-mile-long outdoor art and cultural experience to honor and celebrate Black Los Angeles. Destination Crenshaw also helps small businesses thrive and survive the construction period (Destination Crenshaw, personal communication, May 5, 2021).

### Community Power Collective (formerly part of the East Los Angeles Community Corporation)

Founded in 2020, Community Power Collective works to build power with low-income tenants and pushes for transformative changes, including community control of land and housing and economic justice in Boyle Heights, East Los Angeles, and Los Angeles as a whole (“About Us,” n.d.). The organization was formerly the organizing arm for the East Los Angeles Community Corporation, an organization that led many of the community’s responses to Metro’s investments in Boyle Heights (Community Power Collective, personal communication, April 30, 2021). Since becoming its own organization, Community Power Collective focuses on “development from the root” - in other words, development without displacement.

### Inclusive Action for the City

Founded in 2008, Inclusive Action for the City works to uplift low-income urban communities through policy, research, and economic development (*Who We Are*, n.d.). From supporting the LA Street Vendor Campaign (LASVC) to supporting small businesses in gentrifying neighborhoods, Inclusive Action works to strengthen local economies and increase opportunities for small businesses.

## Metro

Metro plans, designs, builds, and operates transit projects across Los Angeles County (*About Metro*, n.d.). This agency developed and constructed the light rail projects in Little Tokyo, Crenshaw, and Boyle Heights.

### **Small Business Survey**

The purpose of the small business survey is to understand the concerns, priorities, and attitudes of the Pacoima business community about the East San Fernando Valley light rail. Given that Van Nuys Boulevard represents a major commercial corridor in Pacoima and that part of the Metro line will run along this street, we focused our survey on businesses located on Van Nuys Boulevard between San Fernando Road and Laurel Canyon Boulevard.

We based our survey questions on a combination of initial findings from our literature review and Pacoima Beautiful's interests. Our survey questions consisted of four sections: (1) existing business conditions (including rent changes, lease type, and primary mode of transportation for customers), (2) perceived light rail impacts, (3) overall priorities, and (4) COVID-19 impacts and public funding opportunities.

To comply with the university's COVID-19 restrictions on in-person field work, we distributed the majority of surveys remotely. Remote survey respondents responded either online (via Google Forms) or over the phone with researchers. Due to concerns about respondents' likelihood to access a digital survey, we conducted a wide range of outreach methods to recruit participants for the survey. We distributed flyers, hung posters, engaged local community partners, and called businesses directly. We also offered a \$25 gift card to the first 50 respondents to the survey. During our final outreach campaign, we increased this incentive to

\$25 for every business referred. Finally, we partnered with a community member to distribute in-person surveys.

On April 17th, 2021, members of the research team began outreach by distributing a bilingual informational flyer (Appendix H) to 112 small businesses on Van Nuys Boulevard between San Fernando Road and Laurel Canyon Boulevard. To avoid person-to-person contact in compliance with UCLA COVID-19 policies, we taped flyers to the doors of businesses or slipped them under business doors. We also posted several on light poles throughout the Van Nuys corridor. The flyers invited business owners and managers to participate in the survey and included the survey link, purpose, and initial deadline of April 30th, 2021 (later extended to May 17, 2021 to accommodate a final outreach push).

In addition to flyer distribution, the team worked with Neighborhood Legal Services, a community organization located in our area of interest, and our client, Pacoima Beautiful, to assist in outreach to businesses. Both organizations agreed to post a recruitment poster (Appendix I) in their front windows on Van Nuys Boulevard and made phone calls to known businesses to invite them to participate in the survey. Neighborhood Legal Services also shared the survey information with their small business group and a local priest at the Mary Immaculate Catholic Church. Pacoima Beautiful shared the flyer digitally on their social media channels.

Between April 24th to May 16th, the research team, Neighborhood Legal Services, and Pacoima Beautiful followed up with small businesses over phone, text, email, and social media. We made calls on different days of the week and at different times of the day to accommodate small businesses' limited availability. If business owners were busy during the time of an outreach call, the team scheduled another time for follow-up.

As a final outreach push, a community member went door-to-door to businesses along the corridor to hand out paper surveys in a socially distant manner. This outreach took place on May 15 and May 16.

## **Findings**

### **Case Studies**

#### *Case Study Communities*

The case studies focus on community responses to light rail construction in three Los Angeles communities: Little Tokyo, Crenshaw, and Boyle Heights. This section begins with an overview of these three communities, the associated Metro light rail projects, and support services secured for businesses. The section concludes with a discussion of our findings, which Table 3 below summarizes.

Table 3. Summary of Case Study Communities and Findings

Community (Location)	Transit Line (Station)	Construction Completion	Metro-led or Funded Services	Community-led Programs
Little Tokyo (Downtown LA)	Regional Connector (Little Tokyo/Arts District Station)	Expected 2022	<ul style="list-style-type: none"> <li>- Business Interruption Fund</li> <li>- LTSC Business Counselor</li> <li>- Go Little Tokyo marketing campaign</li> </ul>	<ul style="list-style-type: none"> <li>- Direct technical assistance</li> <li>- Community owned real estate</li> </ul>
Crenshaw (South LA)	Crenshaw/LAX Transit Project (Leimert Park Station)	Expected 2021	<ul style="list-style-type: none"> <li>- Business Interruption Fund</li> <li>- Business Solution Center</li> </ul>	<ul style="list-style-type: none"> <li>- TEC Leimert social media trainings</li> <li>- Door-to-door technical assistance</li> </ul>
Boyle Heights (East LA)	Gold Line (Pico/Aliso & Mariachi Plaza Stations)	2009	<ul style="list-style-type: none"> <li>- Improved engagement process for joint development of Mariachi Plaza Station</li> </ul>	<ul style="list-style-type: none"> <li>- Training workshops</li> <li>- One-on-one assistance</li> <li>- Metro 101 trainings</li> </ul>

### 1. Little Tokyo (Downtown Los Angeles)

The Japanese American business community in Little Tokyo dates back to the late 19th century (*Little Tokyo Historic District*, n.d.). For decades, this community has continued to grow, building a legacy of thriving businesses. With this rich history and with the introduction of many development pressures, the community also has a long legacy of organizing around issues of residential and commercial gentrification and cultural preservation (Little Tokyo Service Center, personal communication, April 28, 2021).

In recent years, LA Metro has been planning a light rail station, known as Little Tokyo/Arts District station, in the heart of the community as part of the Regional Connector — a line that will connect Little Tokyo to the Financial District of Downtown Los Angeles, while also improving existing transit connections between Santa Monica and the San Gabriel Valley (*Regional Connector Transit Project*, n.d.). This station is planned to open in 2022. Since the inception of this line, community organizations such as Little Tokyo Service Center have been organizing for community-informed improvements and to help businesses remain in place.

As a result of this advocacy, community groups in the neighborhood have secured several forms of business support from Metro. First, organizers negotiated funding for small businesses impacted by light rail construction through Metro’s Pilot Business Interruption Fund (Little Tokyo Service Center, personal communication, April 28, 2021). Second, to support businesses with needed technical assistance, community groups secured funding to host a Business Counselor at the Little Tokyo Service Center. This support includes a Metro-provided office space. In addition, the community secured Metro funding to provide marketing for the community and its businesses through the Go Little Tokyo program. These services were the result of organizing among the community organizations and businesses in the Little Tokyo area.

## *2. Crenshaw (South Los Angeles)*

Crenshaw Boulevard has served as a center for Black businesses since the 1950s and 1960s. Following the end of redlining and racist covenants in the late 1940s, Black Angelenos moved into the Crenshaw area and the Leimert Park neighborhood (Meares, 2019). By the 1960s, Black businesses were flourishing, and the adjacent Leimert Park green became a central location for community events. With this long history of Black businesses, Crenshaw Boulevard has been referred to as the “main street of [Black] LA,” and local organizations have called

Leimert Park the center of Black culture in LA (*About the Crenshaw Subway Coalition*, n.d.; Meares, 2019).

Not surprisingly, the introduction of the Crenshaw/LAX light rail line, which will run along Crenshaw Boulevard to connect Metro's existing infrastructure with LAX International Airport, has raised concerns about gentrification and displacement among residents and business owners in the Crenshaw community (*Crenshaw/LAX Transit Project*, n.d.). The line has been under construction since 2014, and Metro plans for it to open in 2021. Since its inception, community groups have voiced concerns about the impacts that this transit investment will have on the Black-owned businesses in the area and for the overall community (*About the Crenshaw Subway Coalition*, n.d.). As a result, groups such as Crenshaw Subway Coalition have organized around the transit project since its early beginnings to advocate for business support programs, as well as infrastructure changes such as a station at Leimert Park — which they won — and an underground alignment — which they did not. Organizing strategies included coalescing business owner interests through organizing meetings, submitting comments to the Metro Board, recruiting large groups to attend Metro Board hearings, and working with the local councilmember (*Motion to Study Crenshaw Blvd Subway Approved*, 2009).

In terms of business support programs, both community organizations and Metro have provided assistance to local businesses. First, Metro's Business Interruption Fund is also operating in the Crenshaw area (Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021). In addition, Metro launched a technical assistance program and office space in 2014 called the Business Solution Center. This pilot program provides one-on-one support and workshops for businesses along the entire affected corridor. We could not determine the origin of these two programs in Crenshaw. In addition, community



organizations such as Destination Crenshaw have been leading their own business support programs. For example, Destination Crenshaw has been partnering with TEC Leimert to provide social media assistance to local businesses (Destination Crenshaw, personal communication, May 05, 2021). Destination Crenshaw also goes door-to-door to provide businesses with specialized support in other areas such as financial services. This combination of Metro-led and community-led programs has been serving local businesses since the early stages of construction.

### *3. Boyle Heights (East Los Angeles)*

Boyle Heights is a majority Latinx neighborhood located in East Los Angeles (LA Times Data Desk, n.d.). Within this neighborhood, the intersection of East First Street and Boyle Avenue has long been a hub of community activity. Small businesses, street vendors, mariachis, and *rasquache* (a term that has been reclaimed as a cultural intervention of the built environment resulting from disinvestment, i.e. “a parked car [becoming] a place of business”) are some of what has made this place a landmark in Boyle Heights (Rojas, 2015). Metro has also long recognized this site as a potential transit node, unsuccessfully eyeing it for a Red Line station during the 1990s, and ultimately completing construction for the Mariachi Plaza Gold Line station there in 2009.

Though the Mariachi Plaza station construction took place about a decade earlier than our other two case studies, and though Metro provided local businesses with fewer support programs during that time, the Boyle Heights community has still been able to organize and secure several wins in recent years. Since at least 2014, Metro has been negotiating a joint development project on the Mariachi Plaza site (Sulaiman, 2014a). Originally, the agency pursued limited public engagement for the project and favored big developers and chain store tenants (Sulaiman, 2014b). This project and Metro’s approach raised concerns for the community, especially the

surrounding small businesses and the mariachis who use the site to acquire work. Mariachis in particular were concerned that the site's redevelopment would prevent them from using the site altogether. In response, the community rallied around securing a community vision for the proposed development at Mariachi Plaza (Sulaiman, 2014b). Ultimately, organizing led by groups such as the East Los Angeles Community Corporation (ELACC) successfully pushed Metro to provide a more robust community engagement process for this proposed development, as well as a community-informed Request for Proposal process to select a developer (Community Power Collective, personal communication, April 30, 2021).

### Interview Findings

Through our five interviews, we identified the following key findings:

1. Business Organizing Strategies: A business association and key representatives from the business community help unite businesses;
2. Business Needs and Support Services: Business owners require a range of support, which requires partnerships between community organizations and with Metro;
3. Adequacy of Metro's support programs: Metro's programs can provide more support to businesses earlier; and
4. Displacement Avoidance Strategies: Community ownership of land can stabilize businesses.

*1. Business Organizing Strategies: A business association and key representatives from the business community help unite businesses.*

Organizing business owners presents unique challenges. First, planning meetings are often infeasible for business owners. To attend an organizing meeting, owners often have to shut

down their stores (Little Tokyo Service Center, personal communication, April 28, 2021; Community Power Collective, personal communication, April 30, 2021). Because not all owners can afford to close their businesses to join a meeting, ensuring robust business owner participation in planning and organizing meetings is difficult. As a result, organizers often have to meet businesses where they are through door-to-door outreach or individualized phone calls (Destination Crenshaw, personal communication, May 05, 2021). This form of outreach requires more capacity than a series of planning meetings, but our interviewees also noted its effectiveness.

Given the challenges in organizing businesses, advocates stressed the importance of a small business association. Consolidating businesses into an association can improve communication among businesses. For example, in Boyle Heights, ELACC supported the establishment of a street business association. This association eased communication among business owners as well as with Metro (Community Power Collective, personal communication, April 30, 2021). In addition, a business association helps small businesses gain recognition and visibility from public agencies and other officials, which can help with the negotiation process.

Further, community organizations emphasized the benefits of a strong set of representatives from the business community to provide a unified voice for the business community. Advocates noted that elected officials and legislators are often interested in listening to business owners. For instance, during the community planning process in Little Tokyo, elected officials shared with community organizers that they wanted to make sure the business community was heard (Little Tokyo Service Center, personal communication, April 28, 2021). This finding suggests the benefits of identifying key business representatives to advocate for the business community.

*2. Business Needs and Support Services: Business owners require a range of support, which requires partnerships between community organizations and with Metro.*

Across the case study communities, business owners required a wide range of specialized assistance through a variety of partnerships. Table 4 summarizes the technical assistance programs that Metro and CBOs have provided. Common forms of technical assistance include social media and Yelp.com trainings, grant application support, website development, online delivery support, digital payment services, and business operations best practices more generally (Destination Crenshaw, personal communication, May 05, 2021; Little Tokyo Service Center, personal communication, April 28, 2021). Interviewees noted that one-on-one advising was often the most effective way to accommodate the specificity of each business' needs and each owner's complex schedules; however, some organizations had success with wider workshops (Destination Crenshaw, personal communication, May 05, 2021; Community Power Collective, personal communication, April 30, 2021). Given the range of services needed, community organizations often partnered with specialized service providers and with Metro to increase capacity.

In Little Tokyo, the Little Tokyo Service Center secured funding from Metro to hire a business counselor to provide specialized technical assistance to businesses (Little Tokyo Service Center, personal communication, April 28, 2021). This counselor provides one-on-one assistance to long-term Little Tokyo businesses, many of whom have been in business for several decades, as well as businesses across Los Angeles County ("Small Business Assistance," n.d.). This assistance ranges from providing social media tutorials to sharing COVID-19 resources, and in response to the COVID-19 pandemic, counselors helped some businesses adapt to provide online delivery for the first time (Kwan Peterson, 2020). A key component of this technical assistance is a Metro-funded, local office in the area for providing these business support

services (Little Tokyo Service Center, personal communication, April 28, 2021). This brick-and-mortar space enhances the counselor's presence in the area and provides an additional place for community events.

In Crenshaw, Metro launched a similar technical assistance program called the Business Solution Center, which began in 2014. Metro hired a team of three local organizations, two of which are located in South Los Angeles, to run the center, which provides a wide range of services from support with online forums such as Facebook, Yelp.com, and the City of LA Business Portal, to support applying for loans and Metro's Business Interruption Fund grant program (*Success Stories*, n.d.). The Center serves all small businesses on the corridor. The Business Solution Center model will be implemented for all Measure M-funded projects, including the East San Fernando Valley light rail line (Spearman & Baldwin, 2019).

Community organizations, such as Destination Crenshaw, are supplementing this support in the Crenshaw area. Destination Crenshaw connects small businesses to specialized technical assistance through their partner organizations (Destination Crenshaw, personal communication, May 05, 2021). This technical assistance includes helping businesses set up computer programs such as Microsoft Suite, payroll systems such as ADP, and social media profiles.

Finally, in Boyle Heights, a local community organization planned a series of educational workshops focused on topics such as updates on the local economy, tips on how to run a small business, and information on how to develop a co-op, while also collecting feedback on what businesses want to see in the community (Community Power Collective, personal communication, April 30, 2021). Similar to the other communities, this organization also provided one-on-one assistance to businesses through door-to-door outreach.

Table 4. Summary of Business Support Programs through Metro and CBOs

Assistance Program	Assistance Type	Administrator / Funder	Description
Metro Crenshaw/LAX Transit Line Business Solution Center	Technical Assistance	Metro / Metro	Resource center with one-one-one technical assistance (for all Measure M-funded projects)
Little Tokyo Service Center Business Counselor	Technical Assistance	Little Tokyo Service Center / Metro	In-house counselor at Little Tokyo Service Center that provides one-one-one technical assistance
TEC Leimert	Social Media Technical Assistance	TEC Leimert / Destination Crenshaw (partial)	Destination Crenshaw partner trains youth to provide social media trainings to businesses
Educational Workshops	Technical Assistance	ELACC / ELACC	A series of educational workshops focused on tips for running a small business, entrepreneurship, & co-ops

In addition to technical assistance, community advocates emphasized the importance of pairing these services with dedicated funding to support businesses during construction disruptions (Community Power Collective, personal communication, April 30, 2021; Little Tokyo Service Center, personal communication, April 28, 2021). This is not surprising given that many businesses utilized technical assistance services to apply for financial resources

(Destination Crenshaw, personal communication, May 05, 2021; Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021).

One major funding source is the Metro Business Interruption Fund. Due to advocacy from the Little Tokyo community, Metro developed this pilot grant program to provide direct grant assistance to businesses experiencing negative impacts from light rail construction (Little Tokyo Service Center, personal communication, April 28, 2021). In its current iteration, the program requires eligible businesses to have fewer than 25 employees, be located “immediately adjacent” to the transit line construction, be able to demonstrate that the rail construction has negatively impacted revenues, and meet several criteria for business health (*Business Interruption Fund*, n.d.). Eligible businesses can request a maximum of \$50,000 or 60% of annual revenue losses, and according to our interviewee, Metro does not deny funding to eligible applicants, but simply determines them to be ineligible if they do not meet the stated requirements (Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021).

The Metro Board currently allocates \$10 million annually to the Business Interruption Fund, which now serves the Little Tokyo and Crenshaw communities, as well as the areas surrounding the Purple Line. Because this is a pilot program, the Metro Board has not yet extended the fund to new transit projects such as the East San Fernando Valley line (Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021).

*3. Adequacy of Metro’s support programs: Metro’s programs can provide more support to businesses earlier.*

Advocates stressed that Metro could improve its existing programs to better support businesses. First, advocates emphasized that funding from the Business Interruption Fund was

insufficient to make up for lost business revenues due to construction (Little Tokyo Service Center, personal communication, April 28, 2021). Importantly, Metro has not reached its \$10 million yearly allowance in any year of the grant program (Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021). This finding suggests that Metro could have the means to increase its award maximum and better address business needs.

In addition, interviewees stressed that the Business Interruption Fund's funding eligibility requirements are too narrow, especially the requirement that eligible businesses be located adjacent to construction (Little Tokyo Service Center, personal communication, April 28, 2021). Many businesses outside of these adjacent areas would benefit from additional financial support during construction.

In addition, advocates stressed that the community is often the last to know about Metro's light rail construction projects (Destination Crenshaw, personal communication, May 05, 2021). This lack of information can cause confusion among business owners and residents alike. Historically, Metro has not started outreach for its Business Solution Center until after construction has started. In Crenshaw, this delay was due to the fact that the Metro Board approved the Center for this line after construction crews broke ground (Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021). Further, though Metro extended the Business Solution Center model for all Measure M-funded projects in 2019, and though site acquisition and utility relocation for the East San Fernando Valley light rail line could begin as soon as this year, Metro has not yet started outreach for the Business Solution Center in the valley (Los Angeles County Metropolitan Transportation Authority, personal communication, May 18, 2021). The Business Solution Center model of one-on-one technical assistance and outreach provides a well-suited vehicle for sharing information about construction



timelines and impacts, and thus, there is an opportunity for Business Solution Center outreach to precede construction.

*4. Displacement Avoidance Strategies: Community ownership of land can stabilize businesses.*

During our interviews, we heard about one example of the community ownership of commercial property for stabilizing businesses. Community-Owned Real Estate (CORE), a partnership of Inclusive Action, East Los Angeles Community Corporation, Little Tokyo Service Center, and the group's lender Genesis LA, is leading this work with five Los Angeles buildings in gentrifying areas. This strategy aims to prevent displacement, slow gentrification, and bring tenants into the ownership model over the long-run (Inclusive Action for the City, personal communication, May 18, 2021).

One of the major challenges of this model is its heavy reliance on capital and investors. At the project outset, the partners had to secure enough funding to buy the properties at market value (Inclusive Action for the City, personal communication, May 18, 2021). In addition to securing this substantial down payment, they also needed to demonstrate that they could collect enough monthly rental income to meet their financial obligations. This meant that they had to ensure that existing and prospective tenants could reliably pay rent. Further, once the partnership purchased the five buildings, they then took on the role of "landlord," meaning that they needed to address tenant disputes, maintenance, and rent payments. These skills can be challenging and time-intensive.

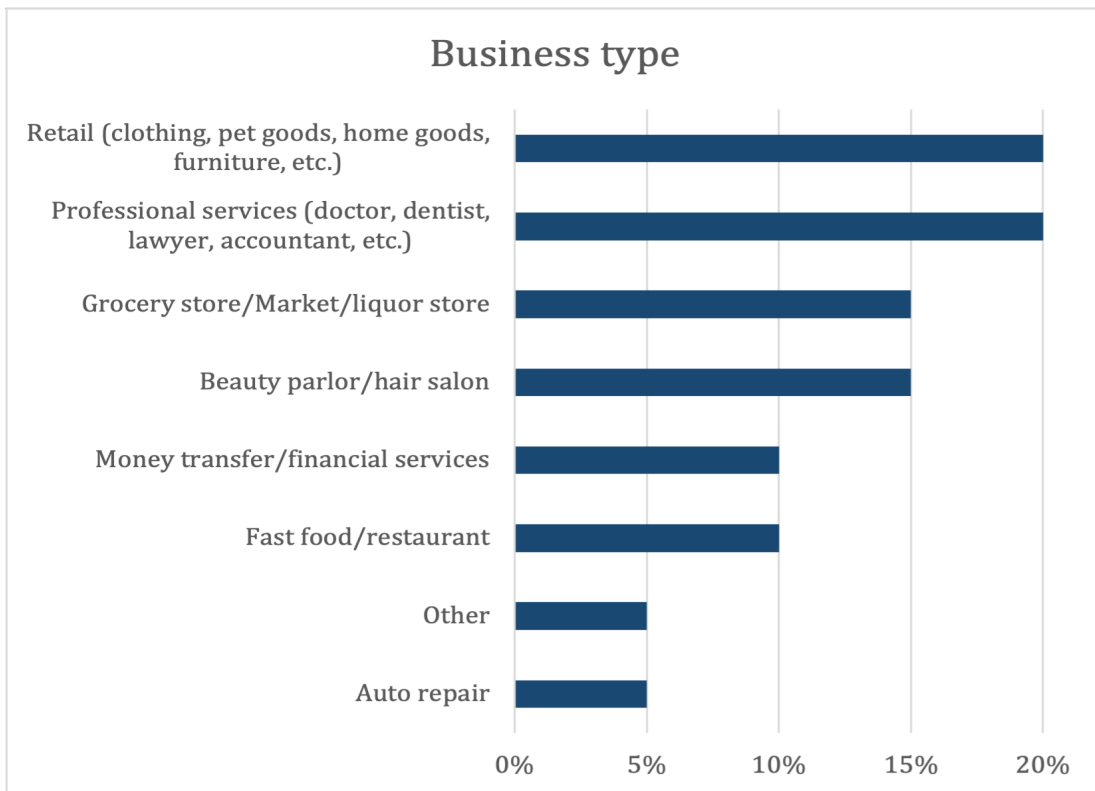
Despite these challenges, this model has shown proficiency in stabilizing businesses. Owning the building allows these mission-driven organizations to provide tenants with payment flexibility, especially during difficult times (Inclusive Action for the City, personal communication, May 18, 2021). During the COVID-19 pandemic, the partners worked with their

tenants to meet their investors’ requirements while also providing for more flexibility. This included helping tenants identify grant funding opportunities. As a result, throughout the pandemic, no businesses have needed to move out of a CORE-owned building due to an inability to meet rent payments.

### Small Business Survey

Our survey received 20 responses from small businesses located on Van Nuys Boulevard from San Fernando Valley Road to Laurel Canyon Road during a period from April 17th to May 17th. The majority of responses were in Spanish — 60% in Spanish and 40% in English. This pool of respondents reflected the diversity of businesses in Pacoima, summarized in Figure 3.

Figure 3. Business types reflected in respondent small businesses



Key findings from the survey and survey process are summarized below:

*1. Conducting outreach to and recruiting Pacoima small businesses to participate in the study was a challenging and time-intensive process.*

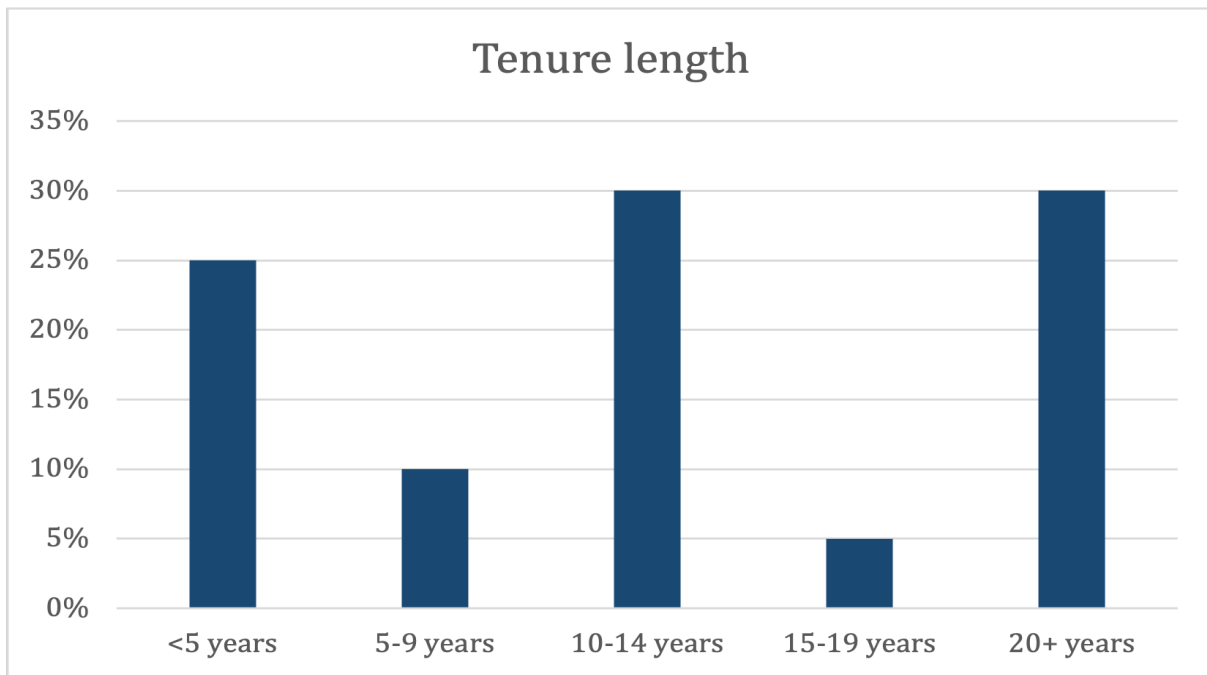
Despite distributing over 110 bilingual flyers to small businesses along the corridor, mobilizing local partners with existing community relationships, translating flyers and the survey into Spanish and English, and multiple follow-ups with businesses via phone, text, email, and social media, we were only able to turn this outreach into 20 responses — a response rate of just 18%. We attribute this challenge to multiple factors.

First, many small businesses operate with few employees, or just a single employee. Time spent over the phone to complete a survey competes with business capacity and the opportunity to make a sale. Second, encouraging business owners to complete the digital survey on their own often proved to be unfruitful. Even when business owners expressed interest over the phone, they often did not complete the survey later. In addition, despite the research team's outreach initiatives, attempted transparency, and partnership with local organizations with an established presence, many business owners were still reluctant to complete a survey. We believe that this reluctance was due to a lack of familiarity and established trust with the survey team. Third, the logistics of conducting an online survey may present accessibility challenges for some business owners because not everyone is accustomed to or comfortable with the technology needed to complete an online survey. The same diversity that enriches the business community in Pacoima requires deeper understanding of each member of the community and unique engagement strategies to prompt and secure participation. For this reason, we believe that establishing trusting relationships and building alliances with small-business owners is key to future organizing and advocacy efforts.

2. Most respondent small businesses are long-term features of the Pacoima community and rent their building space.

As shown in Figure 4, the majority of respondents (65%) reported being in operation at their current address for over a decade. The average age of respondent businesses is 14.8 years. This longevity points to the long-term function that these businesses have played in the Pacoima community. Despite the length in establishment and the strong sense of community in Pacoima, only one of the survey respondents reported being part of a business association or group. This finding suggests that the Pacoima business community may benefit from organizing given that our case studies found that business associations were key in supporting advocacy efforts and providing access to information and services to small businesses.

Figure 4. Tenure length of Pacoima small business respondents



Additionally, 95% of respondents rent their commercial space in the corridor, and 80% of them reported having a written lease agreement. As presented by the literature review, renters face greater vulnerabilities in the face of investment, and the surveys reflected the concerns of the business owners in regards to displacement and the potential for being priced out of the neighborhood. One respondent reported owing several months in rent and being pressured by the property owner to vacate. These findings point to the importance of rent-control and eviction protections for commercial tenants given that the rail line extension could exacerbate the financial impacts of the COVID-19 pandemic.

3. Almost all respondents were deeply and negatively affected by the COVID-19 pandemic.

An overwhelming share of respondents (75%) reported that the COVID-19 pandemic had a negative impact on their businesses. The same number of respondents (75%) reported that they had to close at some point during the pandemic to comply with public health guidelines, averaging 4.5 months among the 15 businesses that did close. Respondents also reported an average reduction in staff of 2.4 employees. Though the impact of the COVID-19 pandemic was not the focus of our research, and though these reports only capture a small view of the impacts Pacoima small businesses experienced during this period, these results demonstrate the vulnerability of businesses prior to the construction of the East San Fernando Valley line.

Table 5. Impacts of COVID-19 pandemic on small businesses

<b>“Overall, how has your business been impacted by the COVID-19 pandemic?”</b>	
Large positive	0%
Moderate positive	10%
Little/no impact	15%
Moderate negative	25%
Large negative	50%
<b>Closed during COVID-19</b>	
Yes	75%
No	25%
Average time closed (months)	4.5
<b>Staff size</b>	
Average number of employees (pre-pandemic)	4.5
Average number of employees (post-pandemic)	2.4
Average change in staff size	-2.4

4. The majority of respondents have heard about the light rail project in Pacoima, but are unaware of details regarding its location, timeline, or the legal and financial implications for their businesses.

Of the surveyed businesses, 85% reported having heard about the Metro rail line planned for Pacoima. However, when the survey asked them to explain the details of what they knew, all respondents to this question expressed some degree of confusion or emphasized how little they did know. Comments included, “not much,” “nothing,” “very little info,” and “too much confusion.” Three of the respondents expressed frustration about the lack of information and the project’s limited community engagement process and impact analysis, and expressed a desire for opportunities to provide input on the project. Some respondents mentioned that while they have been aware of the project for years, Metro and other authorities have not informed them of the details or timeline of the project.

5. Respondents largely hold negative or pessimistic opinions about the light rail project and its potential impact on their businesses.

A majority of respondents expressed pessimistic or expressly negative sentiments towards the light rail project's construction and concerns that this project will trigger the displacement of their business. Of the respondents, 55% expressed a negative opinion of the project. These respondents noted that they felt that this project was not for them:

- “[The light rail is] **not for businesses.**”
- “I think it will **only benefit the owner of the building** given that he insists on raising my rent.”
- “It is **bad for the small business.** There will be more people that will use it, and more cars parked without moving.”

Other respondents believed that the impacts of construction and the operation of the line would create an unpleasant and disruptive environment for them to conduct business, deter customers from patronizing their business, and ultimately be fatal to their business:

- “On the street **all businesses will go bankrupt** they should do it underground or aerial”
- “I don't want this project to move forward because it affects everyone economically, and **we may lose our homes, the bank may take away the property and we would be a total chaos, misery and desolation.** It would be worse than a tsunami. Please analyze first the disaster that you would bring to us. Put the project on pause [sic] for 5 to 10 years before it starts.”
- “It will **force our businesses to close down.** I have seen this in other cities”

- *“...there will only be losses and anguish. This would be **worse than the Coronavirus pandemic** because we did not have work for almost a year and now with this project, it will totally kill our business. Move it somewhere else.”*

While the majority of respondents reported negative potential impacts or general uncertainty about the potential of the light rail project, some businesses expressed hesitant optimism that the project could benefit their businesses and the community at large:

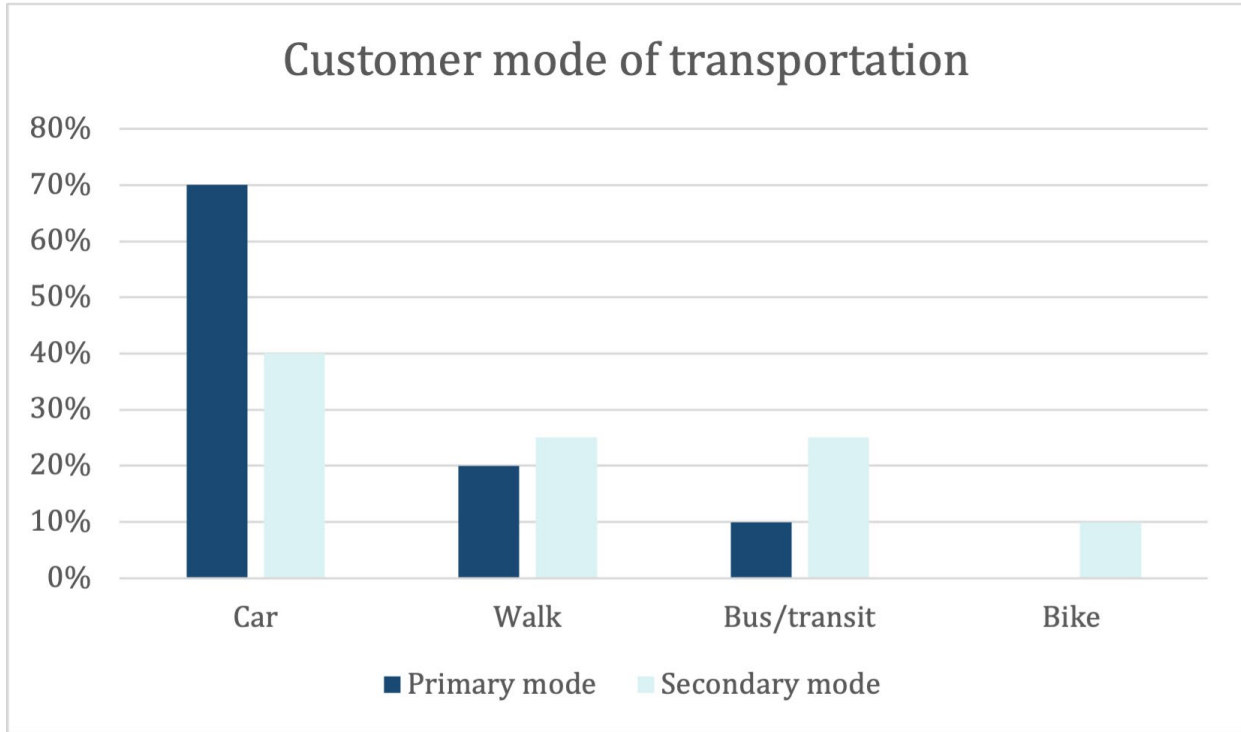
- *“**I hope it does benefit my business** in some ways. I feel like there should be more information being provided to the business owners on Van Nuys Blvd so we can voice our concerns and expectations to this massive project.”*
- *“As someone managing a grocery market, the number of people walking by my store will heavily depend on where the metro stops are being established. It is **exciting and worrisome at the same time.**”*
- *“I think it is a good idea for **reducing car usage and the environment**”*
- *“Maybe yes, because there’s **more pedestrian traffic.** Better.”*

6. Most respondents are concerned about the availability of parking and the potential impact of reduced parking availability on their business.

Of the respondents, 95% identified driving as a mode of transportation their customers used to access their businesses, and 70% reported that it was their customers’ primary mode of transportation to their business. Given this fact, it is unsurprising that most businesses expressed deep concerns about Metro’s proposal to eliminate many parking spaces on Van Nuys Boulevard. One business commented that the elimination of parking would make their business inaccessible to their customers and spell the demise of their livelihood.



Figure 5. Customers of small business respondents' primary and secondary mode of transportation



The only respondent who did not identify the car as a primary mode of transportation for their customers also expressed concern about the elimination of street parking as it relates to the availability of commercial loading space for deliveries. Moreover, this and other respondents expressed concern that the construction of the light rail project would close streets or otherwise make the sidewalks and roads unwelcoming to customers that walk and bike to the business.

7. Respondents are interested in a diversity of technical and financial support services.

Immigrant and ethnic businesses make immense contributions to local economies, yet our survey found that small businesses were operating with low-technology assets, and lacked a network to increase their capital and development capacity. The survey asked participants to select all relevant responses to the question, “are there any resources that you think could help your business respond to the impact of the light rail construction and opening?” We expected the

most popular response to this question would involve financial support in the form of rental assistance or space improvements. Beyond expressing a need for just financial support, however, respondents identified a wide range of services that they believed would be most essential for supporting their business' longevity during the construction and operation of the light rail line. The top five responses were: (1) legal assistance, (2) advertising and marketing services, (3) training opportunities for employees, (4) technology and device training, and (5) rental assistance.

*Table 6. Respondents' support service priorities*

<b>“Are there any resources that you think could help your business respond to the impact of the light rail construction and opening? Select all that apply.”</b>	
Legal assistance	50%
Advertising services & marketing strategies	45%
Training opportunities for employees/managers	35%
Technology training and devices	30%
Help paying for rent	30%
Other	30%
Social media development	25%
Building/space improvements	25%
Help applying for permits or licenses	20%
Assistance in hiring employees	5%

Those respondents that expanded upon their “other” services selection also identified a desire for a reduction in parking enforcement and fewer parking tickets, training on how to use faster payment methods, support with unhoused people and stealing occurring at businesses, and additional parking facilities. Further, through conversations with two business owners, we learned that some owners lack the financial resources to upgrade their payment methods, or lack familiarity with newer payment technologies, like Square.

The overwhelming interest for legal support services could help small businesses understand their rights during the project period. As mentioned previously, most of the respondents expressed some degree of confusion or limited knowledge about the light rail project set to begin construction later this year.

8. Respondents value public space improvements, especially increased landscaping and greenery

Public infrastructure and space improvements have the potential to improve the overall community environment and attract more engagement from customers. Respondents prioritized (1) enhanced landscaping and greenery, (2) building facade improvements, (3) increased street lighting, and (4) slowing traffic.

*Table 7. Respondents' public space improvement priorities*

<b>“Have you seen improvements elsewhere that you would like to see near your business? Select all that apply:”</b>	
Trees & greenery	60%
Facade improvements	55%
Better street lighting	40%
Slower car speeds	40%
Public seating areas	35%
Better sidewalks	35%
Better crosswalks	35%
Signage	20%
Other	20%

These priorities echo observations we made while on site for outreach — the streets are largely filled with vibrant community activities, such as street vending and casual conversations, particularly during the lunch hour. Shade, benches, and other public infrastructure that uplift and

physically reinforce the existing communal life would then be an incredible asset to businesses and the community at large.

Under “other” improvements, respondents identified increased police patrols, street cleaning services, and bike facilities as improvements they would like to see on or near Van Nuys Boulevard. One respondent noted that they would like to see, “more structures to park bicycles. A lot of people leave and enter [my business] quickly because they may steal their bikes.” Another small business owner suggested to us during outreach that if customers were confident their bikes remained safe while they shopped, they could spend more time browsing consumer products, and benefit both customer and business owner. In-person, we also observed that a significant number of residents ride their bikes around the corridor, despite a lack of bike parking facilities along the corridor.

## Recommendations

Based on our literature review, case studies, and small business survey, we identified recommendations that fall into four categories:

1. Further research on defining and measuring success of commercial anti-displacement work
  - a. Conduct comprehensive studies in transit neighborhoods that evaluate the impact of anti-displacement interventions on the vitality of local community businesses
2. Strategies for building community power: business associations and specialized assistance
  - a. Facilitate the creation of an association of small businesses in Pacoima to develop community power
  - b. Provide a wide range of support services to the Pacoima small business community
3. Residential anti-displacement strategies and cultural districts as tools for preserving Pacoima's vibrant commercial community
  - a. Model commercial anti-displacement strategies after existing residential anti-displacement strategies that have demonstrated success
  - b. Establish a Cultural Commercial District in Pacoima
4. Opportunities for Metro to support small businesses earlier and with more funding
  - a. Metro has an opportunity to fulfill its TOC vision by engaging and supporting the Pacoima small business community now, before construction begins.

## **1. Further research on defining and measuring success of commercial anti-displacement work**

### **1a. Conduct comprehensive studies in transit neighborhoods that evaluate the impact of anti-displacement interventions on the vitality of local community businesses.**

Our review of academic and gray literature revealed that scant research has been conducted to document commercial displacement and gentrification, or assess the efficacy of commercial anti-displacement measures. The existing literature largely refrains from defining and measuring success in commercial anti-displacement work, posing a challenge to communities attempting to learn of or weigh the potential efficacy of different anti-displacement strategies. Therefore, we recommend that future research:

1. Identify indicators that could be used to assess business health and turnover rate in a wide range of communities;
2. Track business health indicators before and after the implementation of anti-displacement strategies to assess the efficacy of various interventions; and
3. Interview businesses physically displaced by site acquisition and assess the extent to which compensation mandated under the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act and the state California Relocation Act provided sufficient financial support.

## **2. Strategies for building community power: business associations and specialized assistance**

### **2a. Facilitate the creation of an association of small businesses in Pacoima to develop community power.**

From our case studies, we learned that organizing into an association provides business owners with a unified platform through which to negotiate with public agencies, as well as a

dedicated space for aligning their needs and visions. From our small business survey, we also learned that only one of the participating businesses is part of an association in Pacoima.

Therefore, we recommend that Pacoima Beautiful work with other community organizations in the area to help businesses create such an association in Pacoima. Other groups or coalitions that may be able to provide support with or advice on this process include ACT-LA, Healthy LA Coalition, Small Business Alliance for Equitable Communities, Inclusive Action for the City, and Community Power Collective.

*2b. Provide a wide range of support services to the Pacoima small business community.*

From our case studies, we learned that businesses require a diverse range of technical assistance and support services, and that partnerships with specialty groups are a helpful way to provide this wide array of support. From our small business survey, we also learned that participating Pacoima business owners are most in need of legal services, marketing support, and digital services assistance.

Based on these findings, we recommend providing and advocating for a wide range of technical assistance for Pacoima businesses, with a focus on legal, marketing, and digital services. We recommend that Pacoima Beautiful advocate for these services from Metro's Business Solution Center and partner with specialized business support groups to supplement this technical assistance, as needed. Potential partners include ICON Community Development Corporation, Neighborhood Legal Services, and Inclusive Action for the City.

### **3. Residential anti-displacement strategies and cultural districts as tools for preserving Pacoima’s vibrant commercial community**

#### ***3a. Model commercial anti-displacement strategies after existing residential anti-displacement strategies that have demonstrated success.***

Our literature review found that residential anti-displacement strategies are both well-documented and frequently found to be successful in mitigating some forms of displacement. Strong evidence supports rent control as a method of tenant stabilization, as displacement is frequently a result of rising rents. In addition, our survey found that a vast majority of small business respondents rent their place of business and some expressed that rental assistance could help them adapt to the upcoming community changes. Given these findings, a commercial rent stabilization ordinance may help ensure the longevity of community businesses in Pacoima.

In addition, many rent stabilization ordinances are paired alongside other tenant protection ordinances, such as “just cause” eviction policies — ordinances that limit the reasons landlords can evict their tenants — and right to counsel policies — which guarantee tenants legal representation during unlawful detainer, or eviction, cases.

In addition to rent stabilization and tenant protection policies, community ownership of land models have been implemented in several communities to increase community control of land, ensure long-term affordability, and mitigate commercial displacement. These models include expanding lease-to-own opportunities for small business owners, exploring shared-equity ownership structures of both land and commercial property, collaborating with or mirroring existing commercial community land trusts (CCLTs), and identifying public land for stewardship by a CCLT or business cooperative.

#### ***3b. Establish a Cultural Commercial District in Pacoima.***



Pacoima is a predominantly Latinx community with a rich culture and local character. Van Nuys Boulevard in Pacoima, like San Francisco's Calle 24 Latino Cultural District, is renowned for its vibrant murals. We recommend that Pacoima Beautiful partner with cultural organizations and business associations to explore the establishment of a cultural commercial district. This proposed district might include policies such as differentiating and separately zoning for local-serving vs. visitor-serving retail, limits on chain retailers, and legacy business grants or policies. A cultural commercial district would be a step towards acknowledging and institutionalizing the role of Pacoima's unique Latinx culture and small businesses in its community identity.

#### **4. Opportunities for Metro to support small businesses earlier and with more funding**

*4a. Metro has an opportunity to fulfill its TOC vision by engaging and supporting the Pacoima small business community now, before construction begins.*

From our case studies, we learned that Metro's Business Interruption Fund could better support businesses during construction and that outreach for the agency's Business Solution Center could start earlier in the construction process. More specifically, we learned that the Business Interruption Fund is still a pilot and is not yet planned for the East San Fernando Valley project. In addition, we learned that the fund's awards do not provide enough funding to meet business needs and that its geographic limits on grantees are too narrow. We also learned that while the agency would have benefitted from additional outreach time for the Crenshaw Center, Metro has not yet started outreach for the East San Fernando Valley's Business Solution Center. Lastly, from our survey, we learned that participating businesses highly value rent support and technical assistance.

Based on these findings, we recommend that Metro make several changes to the Business Interruption Fund. First, we recommend that Metro make the fund permanent for all light rail projects, including the East San Fernando Valley project. This would demonstrate a long-term commitment to supporting businesses during construction. In addition, we recommend that Metro increase the maximum award amount beyond the current threshold of \$50,000 or 60% of business losses and work with community representatives to determine the appropriate award maximum. This would provide more reliable support for businesses incurring disruptions from construction. Lastly, we recommend that Metro expand the eligibility for this program beyond those businesses located directly adjacent to construction impacts. This would allow more businesses to benefit from this program and help the agency meet its annual funding allocation for this program.

Further, we recommend that Metro launch the Business Solution Center for the East San Fernando Valley as soon as possible and begin outreach to businesses now before construction begins later this year or early next. Doing so would allow the agency to educate owners about the project and its potential impacts before they are felt and to begin providing services to prepare businesses for construction interruptions.

Lastly, for more information about these programs, we recommend that Pacoima Beautiful and other community organizations reach out to Metro's Diversity and Economic Opportunity Department. In addition, these groups can reach Metro's Real Estate Unit for more information on site acquisition and its Transit Oriented Communities division for more information on the agency's TOC plan.

## Chapter 2

### Bringing Climate-Resilient Infrastructure Home

Written by

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#### Abstract

This research identifies climate-resilient infrastructure interventions that will improve quality of life for low-income communities of color while minimizing community displacement. Specifically, we investigated the potential for infrastructure that targets heat- and flooding-related concerns in the Pacoima-Sun Valley TCC study area at the household level. In doing this research, we also assessed the relationship between urban greening and displacement. While many of the climate responses proposed through the TCC initiative are in the public realm level, such as complete streets strategies and park improvements, there are few interventions proposed for single-family parcels, which comprise a vast majority of land in the area. Our research aims to redirect the dialogue on sustainable development from one focused on large-scale projects to residential-level interventions that address the unique needs of these communities impacted by environmental racism.

Our objective is to determine how low-income residents can best use their existing properties to mitigate heat and flooding impacts while also gaining economic co-benefits. We began with a literature review of residential heat- and flooding-related infrastructure enhancements in Los Angeles and beyond. We then conducted a spatial analysis focused on the

Pacoima section of the TCC project area to quantify the potential for household interventions. To ensure that our research and recommendations centered the community's interests and needs, we conducted windshield surveys and a focus group. This culminated in a toolkit that offers six different climate-resilient infrastructure interventions at the household level that are accessible and appropriate for low-income households, including cool pavement, cool roofs, rain barrels, downspout planters, permeable pavement, and home weatherization.

*Keywords: climate resilience, flooding, green infrastructure, heat, Pacoima*

## **Introduction**

Pacoima is a neighborhood of the City of Los Angeles situated in the San Fernando Valley that faces imminent risks due to climate change. These environmental challenges include extreme heat, water insecurity, and flooding. By 2050 there will likely be 120 days of extreme heat (95+ degrees Fahrenheit) per year in Pacoima. Southern California will increasingly have to worry about water shortages as climate change reduces snowpack and water supply.

Additionally, the risk of flooding will increase due to extreme weather events, and with it, the threat of mudslides and increased runoff of chemicals into water sources. There are also social risks associated with climate change in Pacoima, including health hazards associated with extreme heat and utility burdens on residents as they increase energy and water use to remain comfortable in a changing climate. Work has already begun to address some of these challenges.

In 2018, the Green Together collaborative secured a \$23 million Transformative Climate Communities (TCC) grant to address these environmental challenges by implementing urban greening projects in the Pacoima and Sun Valley neighborhoods in the northeast San Fernando Valley region of Los Angeles. It is important to note that residents are hesitant to implement climate-resilient projects due to the potential of green infrastructure increasing property values and causing displacement. Our research investigates what can be done by both individual households in Pacoima and the community as a whole to mitigate the effects of climate change and other environmental challenges. To address displacement concerns, we have outlined climate-resilient interventions that lead to fewer opportunities for gentrification and displacement by including household-level interventions that allow property owners and residents to control the pace of their investments and their outcomes.

To guide our research, we developed two research questions to inform our methodologies. We used literature and case study research to understand how to address climate resilience while being conscious of the various realities that make Pacoima unique. We used a focus group and windshield surveys to understand the needs of the community, the priorities of the community, and the diverse levels of interest in climate-resilient strategies. As such, our investigations were shaped by the following questions, which has allowed us to make our project relevant and impactful for Pacoima residents:

- *What climate-resilient infrastructure investments are affordable, incremental, scalable over time, and are accessible for Pacoima?*
- *What programs exist to support Pacoima residents to make equitable climate-resilient infrastructure investments at the household level?*

These findings culminate in our toolkit, which includes interventions that residents of Pacoima can implement in their homes.

## **The Impact of Climate Change in Los Angeles and Pacoima: A Literature Review**

We conducted a literature review in order to examine relevant climate literature and explore some of the current understandings in the field. By doing so, we hoped to identify gaps in the literature that could be met by our project. The literature on climate change in Los Angeles and Pacoima addresses key foundational problems facing residents in the area. This includes an understanding of increasing levels of heat in urban areas, the presence of water insecurity and flooding issues, and pollution and contamination realities. We were able to explore how these problems highlight many examples of inequity in and around Los Angeles regarding who is disproportionately impacted by climate change outcomes. We also identified several gaps in the literature that include how and where interventions to address climate change are introduced and the inequitable reasons behind this.

One key finding was concern over issues like increased urban heating and the urban heat island effect as cities like Los Angeles are impacted by its urban infrastructure and design (Wright, 2020). Problems like a lack of shading in urban areas have also become major equity issues (Anderson, 2020). Between 2005 to 2015, there has been a 35% increase in heat-related emergency room visits in California (Barboza, 2020). In Los Angeles County, there were 3.6 times more heat-related hospital visits in 2012 than there were in the 1980s (Barboza, 2020). Low-income communities of color often experience these issues at higher rates due to disparities in healthcare access and cooling infrastructure (Barboza, 2020). Initiatives like the Cool Streets project have highlighted the ways that the lack of tree canopy in Los Angeles has harmed residents.

Additionally, water issues such as extreme and infrequent storms and water insecurity present major problems for vulnerable communities. In California, precipitation events are expected to result in a 10-40% increase in total accumulated precipitation (Huang et al., 2020). While the number of precipitation events has and will most likely continue to decrease, the intensity of these events presents problems for urban living (Modrick et al., 2015). Furthermore, these rain events present issues of flooding for communities that were not designed to handle such extreme weather conditions. Namely, flash floods create issues for residents who do not have the tools or infrastructure to deal with them (Modrick et al., 2015). Projects to address issues of flooding in Los Angeles include the revitalization of the Los Angeles River that aims to facilitate better water management for the city (Thelander, 2012). Consequently, issues of water insecurity have been concerning for decades in Los Angeles. The impact of climate change has only worsened the disparities seen in water insecurity (Islam et al., 2017). This issue is particularly concerning in Pacoima, where high rates of accessory dwelling units may indicate

issues with plumbing and water access for low-income residents (Meehan et al., 2020). About half of residential parcels in Pacoima contain an accessory dwelling unit, either permitted or unpermitted (Armenta et al., 2019). Precarious housing conditions are often a precursor for issues with water security and utilities (Meehan et al., 2020).

Lastly, a legacy of pollution and contamination compound climate-related problems for residents living in communities like Pacoima (Moran-Perez, 2019). A history of economic and racial segregation has resulted in low-income and communities of color shouldering the burden of climate and environmental issues. In Pacoima there are high rates of pollution and contamination due to industrial pollutions from neighboring facilities, garbage dumps, airports, and transportation infrastructure (Moran-Perez, 2019). Policies that dictate where and how these facilities can operate lead to disparate experiences with climate change across Los Angeles County. In Pacoima, the location of these facilities directly relate to how the city was planned, and who was – and who was not – included in planning process (Moran-Perez, 2019). Unfortunately, this means that climate-related problems are an additional burden that residents in Pacoima have to face. For example, flooding in Pacoima, brought on by the emergence of infrequent but powerful storms, can spread contaminants to residents and the environment. The reality of inequity is a key component of understanding how and why neighborhoods like Pacoima face disproportionate rates of heat-related illnesses, flooding, and water insecurity.

There are several gaps in the literature that we identified. While there is much research on physical interventions to improve climate resilience, our research has shown that these interventions primarily take place in the public realm, especially in parks and streets. Although these are important, Pacoima Beautiful and the Green Together collaborative have already implemented and are implementing many such projects in the community. Additionally, while



single-family housing accounts for the vast majority of land in Pacoima, there is little literature that explores how this housing typology can be made more sustainable or climate resilient. Lastly, the literature that does exist emphasizes single-family housing through the lens of middle- and high-income communities that have greater access to resources, different landscaping conditions from Pacoima, and minimal consideration of equity concerns, especially as they pertain to environmental justice and the disproportionate impact of climate change on low-income communities.

## **Research Objective and Methods**

To answer our research questions, we used several strategies in our project to better understand climate-resilient issues and ways that they can be addressed in Pacoima. First, we conducted a literature review which gave us insight into how Pacoima and surrounding areas are being impacted by climate change. We then analyzed case studies which gave us the opportunity to explore potential solutions to climate issues that have worked elsewhere and how they can be applicable to Pacoima. Next, in order to situate this research in the context of Pacoima, we conducted a spatial analysis to explore existing conditions in Pacoima and understand how our project could be most beneficial to local residents. We then conducted multiple windshield surveys that allowed us to be physically present in the community and assess the current household-level interventions that are already in place. These activities led to a focus group that allowed us to interact directly with community members, learn what they are already doing to address climate change, and understand what resources and information would be most beneficial to them. This was all done in preparation for our final deliverable, the toolkit, which gives residents and community members the opportunity to learn more about how climate-

resilient projects can be implemented and what resources are available to actually make them happen.

## **Case Studies**

Pacoima has a primarily single-family home landscape that makes residential interventions a unique opportunity to address the individual and cumulative impacts of climate-related issues. Based on our literature review and research on conditions in Pacoima, we have identified several residential climate-resilient infrastructure interventions that we anticipate will be well-suited for residents: urban gardens, rain barrels, downspout planters, cool roofs, cool pavements, permeable pavements, and home weatherization. We also analyzed the neighborhood-level interventions of bioswales and green alleys. Additionally, neighborhood-level interventions have the potential to address climate issues on a larger scale, resulting in greater benefits for the community at large. To find these interventions, we identified several climate-resilient efforts and used spatial analysis and several windshield surveys to explore their effectiveness in Pacoima. We then narrowed these findings to seven residential and two community-level interventions for residents. These interventions address our three main environmental concerns: heat, rainwater capture, and flooding mitigation.

### **Urban Gardens and Garden Boxes**

Urban gardens have a host of environmental benefits including reducing surface heat, air temperatures, and energy load on homes. These gardens are planted in privately-owned and maintained yards, making them distinct from community gardens. A diverse range of vegetation planted next to a home has the potential to improve cooling in the summer and can enhance energy saving in the winter with residents having to use less heating and cooling. Gardens also

encourage animal and plant biodiversity and serve as important habitats for insects in urban areas (Ross et al., 2012). Since Pacoima is primarily a single-family home neighborhood, we identified urban gardens as a green infrastructure intervention that may be appropriate.

However, there are environmental considerations when it comes to urban gardens that require user education. Certain tools, fertilizers, and watering techniques can cause environmental harm. Water runoff of pesticides or fertilizers can get into water sources if not monitored correctly. Once installed, increased vegetation mitigates flood risks after rain events and enhances stormwater recapture.

Lastly, gardening can benefit health by alleviating pain, lowering blood pressure, regulating heart rate, and improving cognitive function, which can reduce the risk of dementia. Getting outside and working in a garden is a form of physical exercise that stands to improve physical and mental health. While there are initial upfront costs to creating urban gardens, the benefits are long lasting and result in saved energy and the potential for food production.

### **Rain Barrels**

Rain barrels are a stormwater collection tool that mitigates issues of runoff by collecting rainwater directly from the roof of a building. It is important to think about stormwater mitigation strategies when considering residential climate-resilient infrastructure in majority-impervious and drought-prone Los Angeles. As is the case with many urban areas, Pacoima is made up of large areas of impervious surface with little opportunity for rainwater infiltration. When it rains, water is converted directly to runoff and pools in areas with poor drainage.

For every inch of rain that falls on one square foot of roof, a homeowner can collect just over half a gallon of rainwater (Froemming, 2005). In Pacoima specifically, using Google Earth we estimated that roofs are anywhere from 1,200 to 2,000 square feet. For the purposes of our

calculations, we used the United States national average roof size of 1,700 square feet. Next, we calculated the total amount of rainwater that could be collected from one house in Pacoima annually. Using 1,700 square feet as the roof size, and 15 inches of rainfall a year (Los Angeles annual average), one house could collect approximately 12,750 gallons of water a year.

In practice, during wetter months (November-March) when rainfall averages around 1.3” a month over the course of 5 days, residents could expect to collect around 150 gallons of rainwater. In order to capture as much water as possible, residents would benefit from having up to three 50-gallon rain barrels on one property. Collected rainwater is especially useful to water home gardens or potted plants on the property. The collected water can also be used to wash cars and could be used to cool down pavement in the summer months. Environmentally, rain barrels reduce runoff and conserve water, while economically, rain barrels can save homeowners money on their water bill.

A huge barrier to using a rain barrel is the high upfront cost. A single rain barrel can be anywhere from \$120-\$300 for the initial investment. In addition, homes that do not already have rain gutters and downspouts would have to install both before investing in a rain barrel. These large upfront costs make it difficult to consider phased implementation of a rain capture intervention, but for a household that has a garden or ways to use the collected water, the savings on the back end could make a rain barrel a worthwhile investment for residents of Pacoima. There are opportunities to make rain barrels more affordable in Los Angeles. First, there are DIY alternatives to traditional rain barrels that can be as little as \$50. Additionally, both Keep LA Beautiful and the Department of Public Works occasionally have rain barrel giveaways, but there is no guaranteed time frame. Finally, the Los Angeles Department of Water and Power offers rebates for rain barrels, however, the rebates are only \$35.

## **Downspout Planters**

Downspout planters harvest rainwater by redirecting runoff into residential gardens. In order for residents to be able to use this, they will need to have a rain gutter installed that allows water from the roof to collect in the planter box. The planter is placed at the bottom of the spout and the water is able to consistently water the planter. The water is then stored in a storage container within the planter that residents can utilize. Water can be used to irrigate plants or be re-entered into the groundwater supply.

This intervention addresses issues of flooding and water insecurity in Pacoima. It can provide food, herbs, and other health benefits from gardening. It can also help to limit the number of environmental toxins that are washed into nearby streams (C&C Honolulu, 2012). The size of planters would depend on the needs of residents, as well as their space. It is recommended that planters take up 4% of the impervious surface of a property (Mihalic, 2015). This method would only be beneficial for stormwater rerouting and not for the reuse of wastewater (C&C Honolulu, 2012). The benefits of this green infrastructure are limited and dependent on the size of the planter and the amount of rain received in the area.

The cost of planters is dependent on the materials a household plans to use to design the planter. This could include wood, metal, concrete, or brick. Costs would also include soil and planting materials. The cost of downspout planters will also vary depending on the infrastructure a residence has in place. The cost of installing a rain gutter can range from \$600 to \$1,500 (Tschudi, 2021). The average price of installing a downspout is \$160, and on average can cost \$8-\$15 per square foot (Tschudi, 2021). Additionally, residents would need to purchase materials for planter boxes as well as the materials needed to go into the boxes. Besides DIY financing, we have identified Proposition O: Clean Water, Ocean, Rivers, Beaches, Bay Through Stormwater

Projects as a policy solution and potential funding source that can be obtained at the neighborhood level or by a community organization (Proposition O, 2018).

### **Cool Roofs**

Cool roofs are reflective surfaces that are used to reduce sun absorption. They provide many environmental benefits, including lower surface heat and air temperatures, and reduced energy usage. The lighter coloring of the roof can help to decrease net radiation and make the surface temperature more than 50 degrees Fahrenheit cooler than traditional roofs (U.S. Department of Energy, 2021). As a result, they reduce air pollution and greenhouse gas emissions as households need less energy to cool down their homes. There are three main types of cool roofing that can be used depending on the slope of the roof and its condition. The three types include cool-colored metals in white, green, and blues; cool-colored tiles; and specific cool roof coatings in a paint material.

Cool roofs address issues of urban heating and the resulting increased utility bills in Pacoima. Cool roofs do not address the overall temperature of a community and are mainly beneficial to residents in the structure where the roof is installed. While the benefits to ambient temperature reductions are minuscule, there does seem to be a benefit to the amount of energy used to cool down a home (Middel, 2014). There are also larger benefits from cool roofing, including ambient temperature reduction, when multiple buildings have cool roofs installed (Yang, 2019).

Cool roofing projects can range from \$0.75 to \$3 per square foot (U.S. EPA, 2016). This gap in cost is due to the fact that residents have such a wide variety of options for the type of cool roof infrastructure they hope to install. The cost also changes based on the type of roofing that residents have currently and the number of changes that need to be made to their current

structure. Cool roofs cost 20% more than traditional roofs (Diversified, 2021). The City of Los Angeles' 2015 Cool Roof Ordinance requires all new and refurbished buildings to have a cool roof (Pestrella, 2018). The rule does not apply to roof repairs or roof replacements where less than 50% of the roof is being treated. LADWP offers consumer rebates for cool roof installation through their Consumer Rebate Program. The program does not cover the costs of liquid coating.

## **Cool Pavements**

Cool pavements are reflective surfaces that are used to reduce sun absorption. Traditional dark pavements absorb heat and make surface temperature extremely hot. In Pacoima, many residents have large lots of asphalt in front of their homes and utilize a variety of strategies already to reduce the surface temperatures of concrete. There are three main types of cool pavements that can be implemented at the residential level. These include asphalt and concrete mixed with materials to make it cooling, ultra-thin white topping of surfaces, and porous surface installments (U.S. EPA, 2012).

Cool pavements can provide benefits like ambient heat reduction and lower energy usage. Cool surfaces can have different levels of sun absorption, water retention, and cooling effects. Ultimately, each pavement cooling option has different benefits for residents depending on their needs. Residents who use their driveways to park their cars may be less likely to be interested in vegetated cool pavement infrastructures. However, because literature in this area is still new, there are still questions as to the level of impact cool pavements have on general urban heat island mitigation efforts (Qin, 2015).

The cost of these projects varies based on the condition of the surface, the degree of sun outdoor spaces receive, local weather patterns, and ultimately what type of cool surface a household hopes to install. Cool pavement projects can range from 10 cents for projects using

materials like high reflectance paint, to \$10 per square foot for projects like permeable or high reflectance asphalt. Depending on the intervention, it can last from 2 years to 20 years or more (U.S. EPA, 2012). For example, residents who opt to tear up their current concrete/asphalt in order to create a mixture of concrete and cooling concrete materials are more likely to spend a large amount of money per square foot. A lower-cost option is to paint concrete surfaces in cooling colors like white to reduce the amount of sun that is absorbed into the surface. This method can include covering concrete or asphalt with reflective materials to direct solar radiation back to the sun (Qin, 2015). Budget and time may play a factor in a resident's desired cool pavement method. LADWP and SoCalGas have partnered with California's Residential Energy Efficiency Loan Program to provide loans for 100% of home upgrade projects.

### **Permeable Pavement**

Permeable pavement are non-vegetated, paved surfaces made of a porous material or nonporous blocks spaced apart to allow water to flow through to an underground reservoir. Traditional urban pavement is impervious to precipitation and can have an effect on local watershed processes. Unlike natural surfaces, impervious pavement prevents groundwater infiltration and creates more runoff during rainfall events. As areas are urbanized and vegetation is increasingly replaced by impervious surfaces, runoff becomes more severe. Alternative pavement materials can help reestablish a more natural hydrologic balance by minimizing surface runoff, filtering out pollutants that contribute to water pollution, and catching precipitation for underground storage and release.

At the household level, permeable pavement is most commonly used on sidewalks, patios, and driveways. Permeable pavement can support the weight of large vehicles and regular vehicular use, but to remain functioning its pores must be swept, vacuumed, or sprayed clean of



debris such as dirt and leaves. Projects using porous asphalt and concrete are typically 10-20 percent more expensive than their traditional counterparts both for materials and labor. Despite the elevated costs, permeable surfaces are shown to last longer than traditional pavement with regular maintenance. Projects with permeable pavers – bricks or stones set apart for better drainage – vary widely in cost. A pavement project that involves simply laying out pavers for infiltration will have a comparable cost to a project where pavers are not spaced apart, although it will require more labor. Installing an underground water retention basin underneath the permeable pavers, however, can cost thousands of dollars more.

### **Heat Weatherization**

Home weatherization is the practice of modifying a building to promote energy efficiency. Modifications such as insulating walls and roofs and sealing air leaks around windows and doors can protect a building from the elements, especially the sun. This can save residents money on their cooling bills and promote thermal comfort. Some practices are permanent and others are removable, making weatherization a solution for both renters and homeowners. Weatherization practices can be installed room-by-room within a house or apartment. Weatherstripping around doors and windows in a typical house ranges, and can cost under \$50. However, larger weatherization projects can cost up to \$5,000.

### **Bioswales**

Bioswales are designed to slow water absorption into the ground and treat water to remove harmful chemicals before they get back into the groundwater table. Flooding is of great concern for the San Fernando Valley since rain events can be short and intense. Pacoima specifically has a lot of concrete and other non-pervious surfaces in the residential and

commercial areas, which contribute to water runoff and flooding. In order to address flooding events and potential water contamination that can occur from runoff, Pacoima may want to invest in bioswales. “Bioswales are low impact development practices that promote filtering of runoff through plants and soil. Studies have demonstrated that bioswales reduce concentrations of suspended sediments, metals, and hydrocarbons” (Anderson et al., 2016). Bioswales can be constructed in the public right of way between sidewalks and roads and require sloping sides to channel water and are often made with layers of native plants, mulch, bioretention soil, gravel and a perforated pipe that allows water back into the water table (Urban Street Design Guide, 2016).

Based on our windshield survey of Pacoima, there are green areas between private residences and the public street that are underutilized and could be sites for bioswales. Unlike some of our other design suggestions, bioswales are not cheap. A project constructed in 2010 in nearby Sun Valley transformed a residential street into a green street by installing vegetated bioswales. The total cost was 1.8 million and designed by Stivers & Associates, Inc. and managed by Council of Watershed Health (Los Angeles, California). However, Pacoima could apply for funding through Proposition O, which will fund projects of up to \$500 million that address water-quality protection, water conservation, flood water reduction, and stormwater capture in Los Angeles (Proposition O, 2018).

### **Green Alleys**

Green alleys are an innovative and increasingly popular form of infill development that takes underutilized or vacant alleys and converts them to safe, functional spaces using green infrastructure. This type of intervention would be at the neighborhood or city level with the purpose being to manage stormwater, replenish groundwater, mitigate extreme heat, increase

active transportation, and create community gathering space. Green alleys are a culmination of multiple sustainable infrastructure interventions we have already discussed, including permeable or cool pavement, vegetation including trees, and depending on space, also bioswales. The resulting green alleys become community assets and resources for environmental, economic, and social benefit.

Pacoima has 79 alley segments equaling approximately 7.4 linear miles of alleys. Each alley is 16.4 feet wide, amounting to a total of 588,825-square feet of alleys. With this amount of alley surface area, we wanted to determine the annual rainwater capture capacity Pacoima's alleys would have if they were permeable. According to Plum Creek Conservation District, 550 gallons of rainwater can be collected for every 1,000 square feet of collection surface per inch of rain (Rainwater). The total surface area of alleys in Pacoima, if converted to permeable pavers, allows for 576,460 gallons annual rainwater capture capacity.

Converting space to a green alley is very expensive. The existing green alley in Pacoima, Bradley Alley, is estimated to have cost \$3,143,870. The Bradley Alley project was funded by Water Keeper/Liberty Hill, Neighborhood Initiative Fund Community Development Block Grant, LADWP, BOND (Excess CRA bond), and the California Natural Resources Agency. We have also identified the California Natural Resources Agency's Urban Greening Program as a potential funding source. The Urban Greening Program funds projects that reduce greenhouse gas emissions and under example projects they list green alleys with eligible applicants, including both cities and nonprofits.

## Windshield Survey

On April 14, 2021, we conducted an initial windshield survey in Pacoima to further inform our case study research. We made observations of individual households and properties as well as public right of ways including sidewalks, alleys, and greenbelts between the road and sidewalk. We found that most of the front yards in Pacoima are completely concrete and used for social gathering space with chairs, tables, grills, and umbrellas (Figure 6). In some cases, shade structures or temporary canopy tents were present in front yards to create shade and cooling (Figure 6). These shade structures showed us that heat and lack of shade are evident issues in the community. We also noticed that most of the houses have many free-standing plants in the front yard. Because there is so much concretized space, landscaping is done with potted plants sitting on top of the concrete rather than in the ground. We were surprised to find that almost every home in Pacoima is completely surrounded by a fence, which limited what we were able to observe from the street. In the public right of way, we were able to see that there were many

greenbelt strips between the road and sidewalks that have potential for beautification or stormwater management.

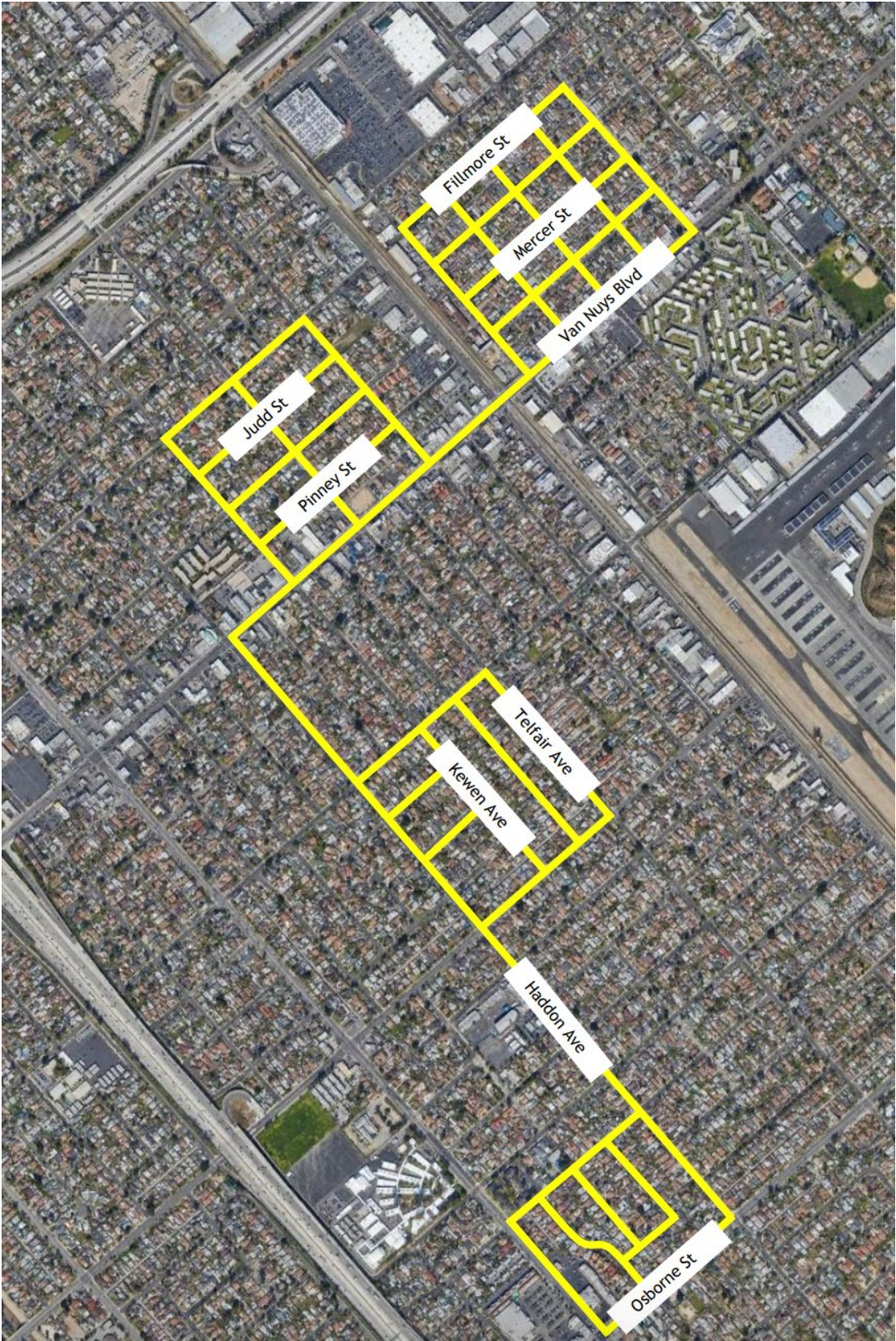
*Figure 6. Photos of residential lot in Pacoima showing impervious concrete front yards with potted plants*



We conducted a second (May 6, 2021) and third (May 21, 2021) windshield survey to collect more data on visible, specifically residential, features including concrete and impervious surfaces, gutters, vegetation around homes, and shade structures (Figure 7). What we found was that there were quite a few gaps in the literature when it comes to climate resilience infrastructure that is appropriate for Pacoima at the residential level. The presence of concrete and potted plants ruled out common climate-resilient infrastructure such as xeriscaping and urban gardens. On the second and third visit, we also noticed a lack of gutters, which was important to note for some of our water-sensitive interventions, such as rain barrels and downspout planters. Being physically present in the community through our windshield surveys was crucial in allowing us to assess the current household-level interventions that are already in place and determine what interventions are appropriate and feasible for the Pacoima community.



Figure 7. Windshield survey route shown in yellow



## **Spatial Analysis**

### **Existing Infrastructure Inventory**

We began our spatial analysis with an inventory of the existing climate-resilient infrastructure in Pacoima's residential areas, specifically looking for solar roofing, permeable pavement, and cool roofing. The purpose of this inventory was to provide a basis for cost-benefit analysis of each infrastructure strategy we researched. There are just under two square miles of residential land use in our study area. We used ZIMAS data to determine that of that land, 80% is designated for single-family use. We sampled 500 residential parcels using Google Earth Pro with 2021 imagery and did a visual inventory of rooftop solar infrastructure, light-colored roofing, and permeable pavement. Since permeable pavement is difficult to detect with remote sensing, we classified any surface with brick or pavers as permeable. Extrapolating from our sample to the full stock of residential parcels, we estimated that seven percent of buildings have solar roofing, less than 20 percent have cool roofing, and less than 15 percent have permeable pavement.

### **Impervious Surfaces**

We also quantified the impervious land cover in the study area. Impervious surfaces are important to climate resilience because they tend to be hotter than natural vegetation, prevent groundwater infiltration, and cause flooding. By quantifying how much land is impervious, we can better estimate the potential for the interventions identified in the literature review and windshield surveys such as cool roofs and cool pavements. Since we are focused on interventions at the household level, we did not calculate street and sidewalk area but instead focused on the percentage of impervious surfaces on each residential parcel. We digitized 50



parcels within the original 500 parcel sample used for the infrastructure inventory and classified patios, building structures, and driveways as impervious surface. We then divided the area of impervious-classified surface by the total area for each parcel to get a percent impervious surface. From our 50 parcel sample results, we estimated that the average residential lot has 71 percent impervious surface. Some of the limitations of our remote sensing approach are that we can only see what is visible from the aerial imagery, so shade structures such as pop-up tents and tarps can obscure the land cover beneath. Also, some households had a tree canopy that obscured our view of the ground. In these cases, we assumed that areas under a shade structure were impervious and those under a tree canopy were not. We did not quantify the parkways that run between the sidewalk and the street because those were outside the scope of household intervention.

### **Demonstrated Benefit: Cool Roofs**

The last part of our spatial analysis was investigating the potential benefits of widespread adoption of climate-resilient infrastructure. Since Los Angeles' 2015 Cool Roof Ordinance will require cool roofing materials for new construction and major roof renovations on existing structures, we chose to model the effects of widespread cool roof retrofits. Using our remotely-derived infrastructure inventory, LARIAC building footprint data (City of Los Angeles, 2017), electricity cost savings, and CO2 emissions savings, we calculated the potential energy savings, cost savings, and equivalent CO2 reduction. These results showed that Pacoima households and the neighborhood at large can realize substantial benefits with widespread adoption of climate-resilient practices.

Our model was adapted from a 2011 report that modeled cool roofing in Los Angeles (Horowitz, 2011). We used LARIAC building footprint data to calculate the square footage of all

residential building structures in the study area. We assumed that three-quarters of the building structures could be retrofitted with cool roofing materials, and that three-quarters of the buildings were air-conditioned space. Detailed assumptions for this modeling scenario are as follows:

- 75 percent of the total roof area is retrofitted with cool roofing material that increases albedo by 0.25
- 75 percent of the total roof area in Pacoima covers air-conditioned space
- Annual direct electricity savings of 3 kWh per square meter of converted rooftop over air-conditioned space
- Annual indirect electricity savings of 15 percent of direct electricity savings
- 13 cents/kWh average annual retail rate for electricity
- Offset of 61kg emitted CO<sub>2</sub> /m<sup>2</sup> of cool roof

Per the Horowitz model upon which we based our model, direct electricity savings refer to “decreases in AC load due to a cool roof’s lowering of individual building temperatures” and indirect electricity savings refer to “decreases in AC load due to the overall reduction in ambient urban temperatures.” Approximate savings are shown below in Table 8.

*Table 8. Approximate savings associated with retrofitting 75 percent of buildings in the TCC study area with cool roofing*

	Total Roof Area (m <sup>2</sup> )	Roof Area Converted to Cool Roof (m <sup>2</sup> )	Converted Roof Area with AC (m <sup>2</sup> )	Direct Electricity Savings (kWh/m <sup>2</sup> )	Indirect Electricity Savings (kWh/m <sup>2</sup> )	Total Electricity Savings (kWh/m <sup>2</sup> )	Cost Savings (\$/year)	Equivalent emitted CO <sub>2</sub> (metric tons)
<b>Residential</b>	1,755,683	1,316,762	658,381	1,975,143	296,271	2,271,414	295,284	107,097

Based on these estimates, adopting cool roofs on 75 percent of residential buildings in the Pacoima TCC study area could generate 1.97 GWh in annual electricity savings, or almost \$300,000 in energy costs. The study area could reduce atmospheric heat by an amount equivalent to the heat generated by over 100,000 metric tons of emitted CO<sub>2</sub>. These estimates are meant to provide a rough estimate of benefits and have some limitations. First, we did not account for effective cool roofing already in place on buildings, or for solar paneling on buildings that may already be providing high solar reflectance. From our infrastructure inventory, it does not appear that any of Pacoima's roofs have already maximized their cool roofing potential, but that assumption may be incorrect. Second, the actual energy savings of a structure depends on a multitude of factors including nearby shading, building design, insulation, number of stories, and location. The values we used for our calculations above are conservative and may underestimate the true savings that could be achieved with widespread cool roofing in Pacoima.

From the cool roof modeling, we concluded that we could similarly estimate reductions in surface heat at the household level, associated utility savings, as well as stormwater capture potential. These calculations directly contributed to our Pacoima-centered cost-benefit analysis for each infrastructure practice that was ultimately included in our toolkit.

## **Focus Group**

Essential to our research project was community connection and feedback. The literature review was our starting point to understand what different types of green infrastructure interventions exist. We then conducted windshield surveys to understand if the case studies from our literature review were appropriate for Pacoima. The information gathered from the literature review and windshield informed the toolkit that we created with different residential green

infrastructure interventions. The focus group provided feedback on the toolkit and information from Pacoima residents about what interventions they already make in their homes and what climate challenges they currently deal with.

We conducted our focus group on the evening of May 19th with the help of two Pacoima residents as translators. Because a number of our focus group participants speak Spanish, we wanted to ensure we had translators who could fluently converse in Spanish. As outsiders to this community, we intentionally hired translators from Pacoima to be a part of this group and create a comfortable and familiar space. The focus group started a little after 7PM, and we had four participants. One of our participants was a homeowner, one was the daughter of renters of a single-family home, and two were renters in multifamily housing. Three of the residents were middle-aged or older, and one was a young adult. We asked the residents seven questions related to green infrastructure and climate change before presenting the toolkit over zoom and finishing with four questions related to the toolkit (see Appendix K). These questions dealt with current climate concerns, what green infrastructure interventions they are already making, and what interventions they want to make. Each participant was able to provide their feedback to the questions, and we had time for free discussion as well as clarifying questions from the participants. The translators effectively created an environment conducive to open discussion and kept the participants on track to finish within the hour.

The focus group illuminated what green infrastructure interventions would be most useful for Pacoima residents. As we expected from our research, energy consumption is high in Pacoima. Fan and AC usage is crucial in Pacoima during the hot months, and even though there are concerns about energy costs, they do not outweigh the need to be comfortable at home. Electricity bills can double during hot months relative to wintertime even though residents will

open windows as much as possible or leave home during the hottest part of the day. The financial toll this is taking on residents is a momentous concern, but residents seem to have little access to information about how to address this burden.

Outside of electricity and energy bills, residents are already implementing their own re-use techniques like using extra water from the washing machine to water plants or collecting water in rain barrels to use for plants and mopping. Most participants had plants and gardens but were concerned about having enough shade for plants. The participants who were renters keep their plants in pots and some have gotten complaints from their landlords about their plants. One participant expressed great pride in her plants and said they bring life and beauty into her home. However, plants and gardens require water, which is scarce in the San Fernando Valley. One resident mentioned she had a rain barrel provided by the city, and there was great interest from other participants in getting one. As expected, when it does rain in Pacoima it does increase the chance of flooding events. One participant said their lot is constantly flooded and washes up trash and debris, a big concern for health and contamination, but that there is no time to come up with a solution for how to prevent the flooding.

The participants who are renters expressed interest in making changes to their homes, but have concerns about what they can do and what their landlords will allow. Some participants have made changes on their own only to have their landlords express their displeasure at the modifications. There is a sense of frustration that they cannot make changes, but also concerns that if changes are made rent could go up.

After finishing our initial questions, we presented our toolkit to the participants. We have a version in Spanish and English (in Appendices B and C, respectively), with information about our six primary case studies: rain barrels, downspout planters, permeable pavement, cool

pavement, cool roofs, and weatherization. The toolkit was well received with the greatest interest in rain barrels, cool roofs, and weatherization. The participants who were renters liked the interventions they could make themselves, like buying rain barrels with financial assistance. The main takeaway is that there is great interest in making these interventions but that participants need to have the resources and information for how to make these interventions and how to receive financial assistance all in one place. Our toolkit fills this need with comprehensive information about the benefits of these interventions and how residents can apply for assistance. The feedback we received about the toolkit was essential to gauging the success of our research, and the positive response reinforced the need for the toolkit. All of the participants will receive a copy of the toolkit in their preferred language, and the toolkit will be made available to Pacoima Beautiful.

## **Toolkit**

### **Curation**

Our community-facing deliverable is a toolkit that provides mitigation practices for climate resilience at the household level. Using data from our case studies, windshield surveys, spatial analysis, and the focus group, we pared down our research into six affordable, scalable, and accessible interventions. Affordability refers to whether the average Pacoima resident can afford initial and maintenance costs, as well as if there are any programmatic monies that can fund or finance the implementation of these interventions. For each intervention, we researched financial support programs and opportunities that can offset or cover installation costs. Scalability refers to how the intervention is implemented. We researched which interventions are one-time investments, and which can be adopted in stages. Accessibility refers to the ease with

which residents can adopt the intervention. We identified online guides, city policies and programs, and other resources that can help residents make decisions on infrastructure investments. Further, many Pacoima residents are renters, so our toolkit identifies which practices can be pursued by tenants or homeowners, determined by whether the intervention is permanent or temporary.

For each of the six interventions, we used local climate conditions, historic utility rates, and average building size to calculate the project costs, potential energy savings, potential temperature reduction, and potential water benefit. As discussed previously in our spatial analysis section, these estimates have many assumptions based on a sampling of residential parcels in the neighborhood. A more accurate cost and benefit should be assessed on an individual household basis, but the toolkit aims to provide a general cost-benefit analysis.

Figure 8. Overview of toolkit showing climate-resilient infrastructure at each intervention site

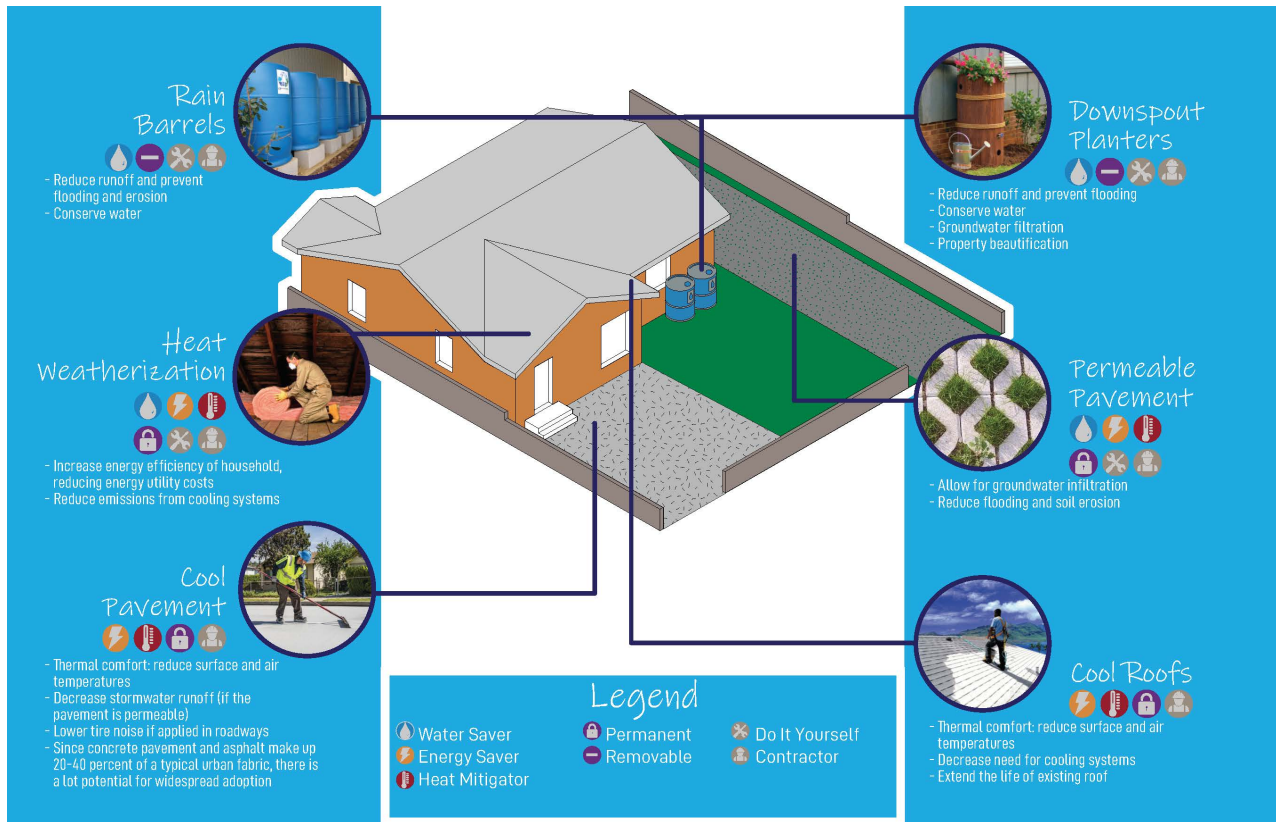



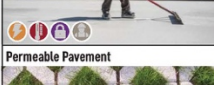




Figure 9. Toolkit quick guide providing at-a-glance descriptions, cost, and benefits of each intervention

## Quick Guide: Strategies and Practices

Intervention	Time to Implement	Upfront Cost	Alternate Funding	Temperature Benefit	Water Benefit	Energy Savings
 <p><b>Rain Barrels</b></p>	<1 day	\$60-300 per barrel \$200+ for downspout and gutter	\$35 LADWP Rebate	NA	1 inch of rain per sqft of roof = about a half a gallon of water	NA
 <p><b>Downspout Planters</b></p>	1 day	\$8-15 per square foot \$200+ for downspout and gutter	Possible 100% financing from Residential Energy Efficiency Loan Program	NA	1 inch of rain per sqft of roof = about a half a gallon of water	NA
 <p><b>Cool Roofs</b></p>	1-5 days	\$0.75-3 per square foot, depending on material	Up to \$0.30 LADWP rebate per square foot; Possible 100% financing from Residential Energy Efficiency Loan Program	Up to 60°F cooler surfaces Up to 4°F cooler air	NA	7-20% less cooling costs
 <p><b>Cool Pavement</b></p>	1-7 days	\$0.10-\$10 per square foot, depending on material	Possible 100% financing from Residential Energy Efficiency Loan Program	Up to 1°F cooler air	NA (unless in combination with permeable pavement)	Less than \$0.60 per square meter of pavement modified (annually)
 <p><b>Permeable Pavement</b></p>	1-2 days	\$0.10-\$10 per square foot, depending on material	Up to \$3 LADWP rebate per square foot; Property Assessed Clean Energy (PACE) financing; Possible 100% financing from Residential Energy Efficiency Loan Program	3-7 °F cooler air	NA	NA
 <p><b>Heat Weatherization</b></p>	1-7 days	\$50-\$5000, depending on mitigation	USDOE's Weatherization Assistance Program; Low-Income Home Energy Assistance Program; Possible 100% financing from Residential Energy Efficiency Loan Program	5-20 °F cooler air	NA	15% less cooling costs

## Design

The toolkit begins with a diagram that depicts a typical home in Pacoima, and where the six interventions would fall, as shown in Figure 8. Each of these is further detailed with their intended benefits. This diagram also introduces an icon system that is used throughout the toolkit. It depicts whether the intervention saves water, saves energy, or mitigates heat; whether it is temporary or permanent; and whether a resident can implement it themselves or hire a contractor to do so.

Following this diagram, there is a matrix that we are calling the Quick Guide., as shown in Figure 9. The Quick Guide is meant to provide a singular place for residents to compare the different quantitative components of each intervention, including water savings, energy savings,



temperature benefits, any potential funding or financing opportunities, costs, and time needed to implement. Afterward, each intervention occupies its own page with further detail. These profiles of each intervention include a more detailed description with anticipated benefits, costs, scalability, potential challenges, and links that direct residents to further resources on acquiring the intervention. These links include applications for funding sources and creative step-by-step instructions for implementing interventions on their own.

Our vision for the toolkit is not stationary; we provide a modifiable document that just like the interventions that it explores, is itself affordable, scalable, and accessible. As such, the toolkit is opensource, can be amended as more and new interventions are deemed appropriate for Pacoima, and is accessible in multiple formats, namely digital and print. The toolkit also uses iconography and other deliberate design choices to accommodate people with visual impairments.

## **Conclusion**

Our literature review, spatial analysis, windshield surveys, and focus group led us to identify six climate-resilient infrastructure interventions that will improve quality of life for low-income communities of color while minimizing community displacement. Cool pavement, cool roofs, rain barrels, downspout planters, permeable pavement, and home weatherization can help low-income residents best use their existing properties to mitigate heat and flooding impacts while also gaining economic co-benefits.

Research and implementation activities to support climate adaptation in environmental justice communities are often focused on large-scale infrastructure projects in the public realm. Our research redirects this dialogue by presenting a toolkit with accessible and actionable

residential-level interventions that address the unique needs and interests of these communities. Through the proposed interventions, residents can learn more about how to implement interventions to benefit not only themselves, but also the community at large. While these interventions are at the household level, single-family zoning comprises the vast majority of land in Pacoima. As such, even small interventions at each home contribute to a cumulative neighborhood climate resilience. Our research and the resulting toolkit help fill that gap between infrastructural endeavors in the public realm and the basis of that infrastructure network at home.

Altogether, our research initiates a dialogue on how residents in environmental justice communities like Pacoima and Sun Valley can make their residential environments resilient not only to climate change, but also to gentrification and displacement. By having agency over which interventions to implement and by what scale and timeframe of their comfort, by extension they also have greater agency over the pace of their investments as they relate to gentrification and displacement. With the opportunity for Pacoima residents to reap the benefits of their own investments, our research and toolkit aid Pacoima Beautiful's mission to achieve environmental justice and promote a healthy and sustainable San Fernando Valley.

## Chapter 3

### Formalizing Unpermitted ADUs in Pacoima

Written by

Jorge Gamboa, Alejandro González, Cindy Reyes

#### Abstract

As Los Angeles continues to battle a housing crisis with increasing housing costs and a shortage of housing options, communities like Pacoima have responded to housing needs with the construction of unpermitted Accessory Dwelling Units (ADUs). Attempts to permit these structures, result in the demolition of the unit and the displacement of tenants as they do not meet the restrictive planning and building codes. This report explores how existing unpermitted ADUs in Pacoima can be made more livable and safer. Through the use of academic articles, case studies, policy documents, and semi-structured interviews, we examine amnesty and legalization programs local agencies have used to preserve these structures. We find that Planning, Building, and Code Enforcement Divisions can heavily reduce and waive development standards. Furthermore, inter-department collaboration and Embedded Planning efforts within city and county government are necessary for the preservation of these needed and desired structures.

*Keywords: Accessory Dwelling Units (ADUs), Amnesty, Formalization, Legalization, Unpermitted*

## **Introduction**

The neighborhood of Pacoima is a primarily low-income single-family neighborhood situated in the Northeast San Fernando Valley in the City of Los Angeles. As Los Angeles continues to battle a housing crisis with increasing housing costs and a shortage of housing options, communities like Pacoima have responded to housing needs with the construction of unpermitted housing units on single-family flats. These unpermitted housing units are also known as secondary units, accessory dwelling units (ADUs), or granny flats. ADU State legislation has since made it possible for these unpermitted structures to become permitted through recent laws from 2017, with further amendments made as recently as early 2021. The recent State legislations do not explicitly provide a pathway for unpermitted ADUs to become permitted, as unpermitted units are still subject to current planning standards to gain formalization in Los Angeles. In reality, attempts to permit existing unpermitted ADUs ultimately result in the demolition of the housing unit and the displacement of the tenants as they do not meet the restrictive codes required by the Los Angeles Department of Building and Safety (LADBS). Thus, we look to answer how can existing unpermitted ADUs in Pacoima be made more livable and safer?

Through the use of case studies, policy documents, and academic journal articles, we examine amnesty and legalization programs that several California cities and counties have used to permit, unpermitted ADUs. Furthermore, semi-structured interviews with Pacoima residents as well as private, public, and non-profit organizations that carry out or engage in ADU development, were conducted to understand how governments and residents experience the unpermitted housing climate and ongoing efforts to address permitting complexities. We find that while there is much support and advocacy for ADUs, the California Building Code serves as

the ultimate governing entity in which there is very little flexibility for unpermitted structures. Planning, Building, and Code Enforcement Divisions can heavily reduce and waive development standards, plan checks, permitting fees, and penalties but do not do so. Furthermore, inter-department collaboration and Embedded Planning efforts within city and county government are necessary for the preservation of these needed and desired structures in communities.

## **Background**

In 2019, Pacoima Beautiful, a grassroots non-profit organization partnered with UCLA's Urban and Regional Planning program to perform extensive research on the region to understand the ongoing issues residents face. Ultimately, this study explored how ADUs were being used as well as an understanding of the type of barriers that these secondary structures face. Through the use of aerial land surveys, walking street surveys as well as interviews and surveys with residents, the 2019 study found that ADUs are very prominent throughout the region. In the properties surveyed, the study found that roughly half of the lots contained a potential ADU (A Casita Community, 2019). Such structures varied in shape, size, and style; from converted garages to detached and attached housing units. It is because of these variations that many more properties could have a potential existing ADU that are not so distinguishable from aerial and street views.

The fundamental issue surrounding existing structures is that the majority of the ADU stock in Pacoima is unpermitted (Armenta et al., 2019). These structures were built without permits; therefore, they were built without meeting the appropriate planning and building codes and inspections. While state legislation has made it possible for these structures to become permitted as part of ongoing efforts to make ADUs easier to build; these structures still defy local and state thresholds to be considered a safe and habitable space. ADU owners are then

forced to either demolish the space or make vast modifications to bring the building into compliance. The high-cost modifications to bring a building into compliance are not feasible for low-income households, which also results in the demolition of the structures and the displacement of the tenants within them.

ADUs are considered naturally affordable because they are relatively smaller structures in size. In addition, ADUs can use existing utilities from the primary house instead of building new infrastructure. As found in the 2019 study, ADU development continues to be difficult despite the reduced standards and “naturally affordable” notion. There is a lack of funding options made available for Pacoima residents to build a new ADU or make modifications to existing structures to bring them into compliance (A Casita Community, 19). Moreover, the limitations in unit size and count create a compact style of living that inhibits ADUs from providing the housing space needed.

## **Goals and Objectives**

The purpose of this research is to develop mechanisms that *formalize* the unpermitted ADU stock in Pacoima. Throughout our research, we were cognizant of the terminology we applied to our findings and recommendations. To recommend a formalization program for unpermitted ADUs in Pacoima underlines an effort to destigmatize these living structures. We refrain from labeling our recommendations as an amnesty program because that suggests forgiveness and recognition; legalization alludes to these structures being forbidden and/or criminal. By utilizing *formalization* and *unpermitted*, we center people’s children, families, pets, and loved ones back to the conversation and by using *unpermitted* solely suggests that the units have not gone through bureaucratic processes.

It is evident that these units are essential to the community to preserve much-needed housing and protect tenants from displacement. Pacoima residents cannot afford to demolish such structures or make the necessary costly modifications to bring them into compliance. The ongoing construction of these units exemplifies a need that the city is not adequately addressing. Thus, how can we preserve as many of these units without risking their demolition and displacing residents? Our goal is to produce recommendations for a formalization program for the City of Los Angeles to adopt and reduce permit barriers and ensure that these housing units are preserved, livable, and safe for tenants.

## **Methods**

This research relies on both primary sources via interviews and secondary sources with policy and literature review. Additionally, the 2019 “A Casita Community” serves as the foundation for this report. Academic journals and research were used to provide insight on unpermitted ADUs, their cultural significance, and efforts towards formalization.

We analyze case studies of cities and counties throughout the region that have adopted amnesty and/or legalization programs for unpermitted ADUs. The following case studies in California have been deliberately studied: City of Los Angeles’ Unpermitted Dwelling Unit (UDU) Program, City of San Jose’s ADU Amnesty Program, County of San Mateo’s Second Unit Amnesty Program, County of Santa Cruz’s Safe Structures Program, City of Sausalito’s Amnesty Program for Unpermitted Accessory Dwelling Units, City and County of San Francisco’s Legalization of Unauthorized Unit Program, and the City of West Hollywood’s Legalization of Illegal Units. We analyze these programs based on their accessibility to community members concerning health and safety, tenant protections, collaboration between

departments, and approach to liability and enforcement. We then determine what best practices can be replicated or altered to meet the needs of Pacoima residents.

Finally, we conduct primary research via semi-structured interviews with the Pacoima community, California City and County Planning Offices, and various practitioners that engage in ADU development efforts. Pacoima residents, and individuals that live in adjacent neighborhoods, were interviewed to understand firsthand, the issues they face when trying to permit these structures, and their views on the different policies that need to be changed to best fit their needs. We conduct interviews with various practitioners in the field involved in ADU processes. This includes private, public, and nonprofit organizations such as the City of Los Angeles Planning and Building Department, Mayor's Office of the City of LA, LA Council District 7 Office of Councilmember Monica Rodriguez, California Housing and Community Development (HCD), GridLA, Embedded Planning leader Jonathan Pacheco, and non-profit Environmental Justice Organization and project partner, Pacoima Beautiful. These interviews are designed to provide insight on efforts taking place on the ground to address unpermitted housing structures as well as recommendations to policy and permitting changes. Furthermore, we engage a portion of planning offices initially researched in our policy review including the County of San Mateo, City of Santa Cruz, City of San Jose, and the City of Sausalito.

## **Secondary Research Findings**

### **Literature Review**

There have been major transitions in housing policy at the state and local level to recognize practices of unpermitted home modifications including ADU policies framed as



solutions to a housing shortage. These policies have largely failed to incorporate a formalization process for existing, unpermitted dwelling units. From this literature review, it is clear that single-family housing and home-modification practices are embedded in the history of housing in Los Angeles and have defined neighborhood characteristics in urban and suburban areas.

Home modifications that stem from housing segregation have existed for a long time, primarily in communities of color. ADUs are a form of home modifications seen as a necessary response to community needs during a time of exclusion from entire housing tracts. The legacy of redlining has manifested into the present organization of communities that remain segregated including neighborhoods like Pacoima whose residents are predominantly people of color. Although both Latinx and African American communities faced similar pressures to assimilate, and therefore similar barriers to achieving homeownership, as historian Jerry Gonzalez (2017) describes, Mexican Americans acquired greater access to suburban housing and emerged as powerful actors that shaped their local political and cultural spaces. Within these ethnic enclaves, Latinx communities incorporated unique versions of traditional domestic and public spaces from their home countries. These modifications became common and were seen as a necessary response to community needs as they were excluded from entire housing tracts (Irazábal, 2012).

Horizontal density is a form of home modification that many minority-income communities have used to remain unseen by code enforcement officials at street-view level (Wegmann, 2015). Horizontal density refers to the building of new one-story residential structures on what had previously been open yard space while leaving the existing buildings intact. It is a means by which many low-income communities can navigate a difficult housing market.

Moreover, low-income communities have historically been the ones to carry the burden of housing density and intensive land uses like manufacturing and industrial land zoning. For instance, in San Francisco, one of the first actions of the 1958 Housing Code was a proactive building inspection of the entire housing stock. This inspection effort found that the majority of these units were built without permits and were deemed to have substandard conditions. In the name of urban renewal efforts, units in the city's Black neighborhoods were required to be demolished, resulting in the displacement of thousands of residents (Healy, 2019). While this code enforcement effort also resulted in the retroactive formalization of unpermitted housing units, it resulted in a higher number being demolished. Today, the need for code enforcement to offer means of remediation or a pathway to inform future policy recommendations continues.

The lack of government effort to inform and support residents on what is allowed and what is not has led community organizations and liaisons to intervene. Community groups have an embedded relationship with the community at large for support. For example, due to their established, trustworthy, and respectful relationship with the community, Peninsula Interfaith Action (PIA), a faith-based social justice organization, hired a minister to conduct voluntary inspections of unpermitted second units in Daly City in place of code enforcement. (Cabansagan, 2011). Overall, past housing policy efforts have not been comprehensive, nor have they adequately responded to communities with a legacy of unpermitted structures.

### **Policy Review Findings**

Next, we analyze existing ADU amnesty programs within CA to understand how local agencies have addressed unpermitted ADUs and the specific requirements units are subject to. Specifically, the following case studies were used: City of Los Angeles' Unpermitted Dwelling

Unit (UDU) Program, City of San Jose's ADU Amnesty Program, County of San Mateo's Second Unit Amnesty Program, County of Santa Cruz's Safe Structures Program, City of Sausalito's Amnesty Program for Unpermitted Accessory Dwelling Units, City and County of San Francisco's Legalization of Unauthorized Unit Program, and the City of West Hollywood's Legalization of Illegal Units. Each program was assessed based on the following categories:

- Low cost and Easy Process -- programs that removed barriers upfront and did not have financial constraints for applicants
- Health and Safety -- programs that shifted their emphasis to health and safety and NOT zoning. This allowed the program to support the preservation of housing, and not enforce zoning requirements upfront.
- Tenant Protections -- measures in place to support residents of these unpermitted structures if the units were required to be demolished. While these programs did not provide explicit affordability or tenant protection component, their housing preservation approach allowed tenants to remain in their units while still ensuring their safety.
- Collaboration -- programs that were composed of inter-governmental departments including Planning, Code Enforcement, and Building and Safety.

Below we provide a brief description of each program studied followed by an amnesty/legalization matrix that outlines similarities and differences across the case studies.

*Unpermitted Dwelling Unit (Public Benefits Project)- City of Los Angeles*

In 2017, the city of Los Angeles provided a form of amnesty to existing non-permitted dwelling units in multi-family buildings, zoned for multifamily use only (City of Los Angeles,

2018). Thus, unpermitted ADUs located in single-family zones would not be eligible for amnesty; instead, they are required to abide by ADU conversion standards.

*ADU Amnesty Program - City of San Jose*

The City of San Jose provides an amnesty program for unpermitted units built before 2019 and currently occupied by tenants (City of San Jose, 2021). Benefits include waiving illegal construction penalty fees, plan check and inspection fee waivers, as well as business tax exemptions for owners. Once an initial inspection has been conducted, owners are required to complete the legalization process. They just approved an amnesty program for illegal ADUs.

*Second Unit Amnesty Program - County of San Mateo*

In 2019, the County of San Mateo ran a pilot program, Second Unit Amnesty Program, to facilitate homeowners' ability to raise their secondary units (like ADUs) into compliance with basic health and safety standards (County of San Mateo, 2018a; b). Specifically, this program allowed applicants to meet with staff, conduct preliminary site inspections and consultations then submit formal applications. A withdrawal clause is given to applicants in which they are allowed to withdraw from the program without any penalty or requirement to legalize; it is only once a formal application is submitted that they must proceed (County of San Mateo, 2018c).

*Safe Structures Program - County of Santa Cruz*

The County of Santa Cruz offers a limited amnesty program that certifies unpermitted structures. Safe Structure certification means that an unpermitted structure will become considered a low priority for county code enforcement, and in the event of a complaint, the

county will indicate whether the structure is safe and habitable (County of Santa Cruz, n.d.a). Landlords of certified structures will not be held liable for tenant relocation assistance due to renting an unsafe, hazardous, or illegal unit (County of Santa Cruz, n.d.b). Property owners will have penalty fees waived and have certain impact fees reduced or waived entirely.

*Amnesty Program for Unpermitted Accessory Dwelling Units - City of Sausalito*

The City of Sausalito provides amnesty periods during which time property owners of existing unpermitted ADUs may apply for reprieve and legalization of the unit (City of Sausalito, 2019b). During this period the permit fee for amnesty will be reduced (City of Sausalito, 2019a). If the existing unit is not legalized or removed during the amnesty period, the City may begin code enforcement action against the property owner after the conclusion of the amnesty period to either bring the unpermitted unit into conformance with the ADU regulations or remove the illegal unit. In such cases, the illegal unit may be subject to the applicable penalty fees.

*Legalization of Unauthorized Unit Program - City and County of San Francisco*

In late 2015, the City and County of San Francisco's Department of Building Inspection announced the waiver of plan review fees for the legalization of In-Law Units (City and County of San Francisco, 2015). The Department states that fee waivers encourage property owners to seek the legalization of their units and ensure the safety of residents. The City of San Francisco's goal is to retain existing affordable units, legalization through the program would secure affordable housing units in the market. The mayor's unit legalization program is voluntary, so no penalties are being levied for non-compliance.

### Legalization of Illegal Units - City of West Hollywood

The City of West Hollywood has adopted zone amendments that continuously allow “illegal” units to pursue legalization (City of West Hollywood, n.d.). These amendments offer waiver of certain zoning standards to property owners legalizing existing, non-permitted housing units. Waivers for regular parking requirements are offered in most cases except when a unit occupies required parking areas (L. Yelton, personal communication, May 10, 2021). After the planning permit process permits legalization, the building department determines if the unit is physically able to meet the city code.

### **State ADU Amnesty Program Matrix**

The State ADU Amnesty Program matrix provides a summarized overview of the different city and county amnesty programs in the state. The format of the matrix is intended to allow the comparison of different program components through their favorability. Here we rank the various policies and requirements that are most effective for the City of Los Angeles to implement.

Figure 10. State ADU Amnesty Program Matrix

STATE ADU AMNESTY PROGRAM MATRIX									
Name	Location	Program Components							
		Program Entry Fees	Unit Eligibility	Enforcement Suspension	Status of Existing Penalties and Fees	Relaxed Compliance Standards	Non Commitment Window	Financing Available	Affordability Component
Unpermitted Dwelling Unit (UDU) Public Benefits Project	City of Los Angeles	Yes	On Multi-Family lot Built / occupied between 2010-2015 Affordability covenant	N/A	N/A	N/A	N/A	N/A	Yes, with a covenant processing fee of \$5,813
ADU Amnesty Program	City of San Jose	Waiver Possible	Built before January 2020. Proof of occupancy. No existing permit application on record.	Yes	\$1,435-\$2,088 waived depending on unit size	Yes	Yes	Hardship Exemption available	No
Second Unit Amnesty Program	County of San Mateo	Reduced	Built before 2017. Proof of occupancy On residential lot Outside coastal zone	Yes	Suspended	Yes	Yes	Loan program	No
Safe Structures Program	County of Santa Cruz	Yes	Built before 2014. Cannot be legalized through standard process	Yes	Yes	N/A	No	No	No
Amnesty Program for Unpermitted Accessory Dwelling Units	City of Sausalito	No / Reduced	Two forms of evidence that the unit was created prior to January 1, 2012	Only during amnesty period.	Suspended during amnesty period.	Yes	Yes	Yes	Optional
Legalization of Unauthorized Unit Program	City and County of San Francisco	No	Built and occupied prior to January 2000.	No	N/A	Yes	No	No	Yes

Key:

	Most favorable
	Moderately favorable
	Least favorable

## **Primary Research Findings**

We interviewed Pacoima community members and various California planning offices at the state, county, and local levels. Our interview topics for community members focused on understanding the accessibility of resources and how approachable ADU policy efforts have been for community members. We were interested in understanding what avenues for support existed and where those needs could be strengthened. Our interviews with California planning offices focused on understanding their programmatic processes. We wanted to learn what barriers existed for homeowners to access these programs and how these programs were being implemented to meet the needs of their respective communities.

### **Pacoima Community Interview Findings**

Pacoima community members highlighted various concerns during our interviews, including the lack of knowledge of City permitting processes, challenges with tenant protections, and the limited understanding of existing support systems in the community. When asked about their respective knowledge of ADUs, interviewees were extremely familiar with these structures but did not know recent legislation had passed to allow them to be built over the counter. This resulted in their confusion of existing ADU programs offered from the city and how to access them, along with confusion between what is the law and what is a program that leverages that law. For example, one interviewee believed that one of the ADU programs offered by the city was a requirement to build an ADU and not just a program being offered.

Community members also expressed issues with access to information and resources from the city. One of the interviewees mentioned, “There is a street with two neighbors who live across from each other, and easily rents their ADU for \$2,000 — the neighbor across the street



disputes and calls the inspector over the lack of parking that results from that unit”. If a community member wants to file a complaint to code enforcement, they can access that information but are unable to access resources on the steps needed to build a new ADU. There is a huge fear of code enforcement presence in the community; homeowners with unpermitted structures prefer leaving their units as they are rather than have it inspected by officials. Moreover, there are more assets in the community to help with the construction of these units than formal education and guidance from the City; therefore, structures are continuously being built without permits.

Finally, community residents expressed issues regarding tenant protection or lack of. Tenants do not fully understand their rights within unpermitted units and fear such tenuous living conditions. For example, unpermitted ADUs are unable to have independent water and energy meters as they would need to obtain permits to do so; thus, landlords control utilities over their tenants by limiting their uses to keep costs down. Education is a necessary component that a community-based organization can play to serve as an intermediary between the community and formal bureaucratic offices like the Housing and Community Investment Department (HCID) or the Department of Building and Safety to understand planning processes and the process to build an ADU. Further, community members expressed a need for a broader education campaign around ADUs and tenant rights to better understand what is or isn't allowed.

### **California Planning Offices and Practitioners Interview Findings**

In our interviews with California planning offices and practitioners, we found the following four areas to be consistent across our research that can define and inform a successful program in Pacoima: Health and Safety, Tenant Protections, Collaboration, and Liability. First, health and safety provide the ability for unpermitted housing units to be preserved while still

ensuring that housing is meeting a minimum habitability threshold and protecting tenants from displacement. Second, tenant protections have not been explicitly outlined in most programs and community residents do not understand their rights and should be prioritized. Third, collaboration among Planning, Code Enforcement, and Building and Safety Departments have offered innovation within these programs. Lastly, liability concerns are taking focus away from creating more accessible processes that reduce penalties for communities. While ADUs have been used as strategies for increasing housing production goals, including to reach Regional Housing Needs Assessment (RHNA) goals, unpermitted units provide an opportunity to meet these goals. Below is a summary of the key findings for all the conducted interviews.

### Health and Safety

Health and safety should be prioritized to preserve housing and not remove it. There is State support for the development of ADUs as reflected in the ongoing legislation that facilitates ADU development to be more streamlined. Further, Health and Safety Code 17980.12 allows property owners a five-year delay on enforcement and provides the ability to formalize their unpermitted units on the basis that correcting the violation is not necessary to protect health and safety. (J.Ayala, personal communication April 2021). In Santa Cruz, a Life and Safety Checklist for rentals ensures that tenants living in unpermitted units meet minimum safety thresholds so they can participate in the program with basic building standards for unpermitted structures (N.Concepcion, personal communication May 2021). In San Jose, by leveraging Senate Bill 1226 building standards, the building permits allow for ADU standards to meet requirements of the year the unpermitted unit was built rather than current standards (J.Hatfield, personal communication May 2021). Ultimately, it is up to the individual jurisdictions to

determine policies and programs, if any, regarding unpermitted structures and if they choose to leverage state health and safety codes.

On the development side, a plan checker can be extremely sympathetic to individual cases, but it is ultimately up to the inspector to make the final call to approve or deny an ADU. Any necessary upgrade triggers Title 24 energy code conformance. When an interested party reaches out to the Los Angeles Department of Building and Safety (LADBS), the first recommendation given to residents is to hire an architect/contractor. (F. Hernandez, personal communication April 2021). Unpermitted ADUs are usually built, at or close, to code requirements and simply lack the proper permit due to cost and process. Code Enforcement needs to shift away from a policing and incarceration model towards one that allows formalization of unpermitted units. (J. Pacheco Bell, Personal communication May 2021).

### Tenant Protections

By providing a comprehensive amnesty program, tenants can remain in their housing units and avoid displacement. However, amnesty efforts that request affordability standards requirements may limit the number of program participants. The Unpermitted Dwelling Unit (UDU) program became undermined by ADU state law and therefore did not incentivize property owners to participate in this effort. The UDU program also entails an affordability covenant that adds roughly \$6,000 in costs and requires yearly recertification by tenants to prove their income. Due to these constraints, less than 200 units have processed applications through this program. In contrast, the City of Santa Cruz program did not require an affordability covenant for unpermitted housing units. The program is centered around housing preservation to

increase housing supply and to avoid displacing tenants and is bolstered by a tenant relocation plan.

### Collaboration

Collaboration between departments is essential to a successful program and catalyzes innovation. In the County of San Mateo, the Community Development Director oversees Planning and Code Enforcement and is, therefore, able to enforce or disregard actions relevant to the amnesty program (W. Gibson, personal communication May 2021). With fewer bureaucratic steps, they streamline the amnesty program that preserves needed housing while ensuring the safety of each housing unit. In the City of Santa Cruz, a Community Development Director oversees planning and code enforcement. However, in order to facilitate a holistic program that serves the community, planners require more on-the-ground work for a better understanding of what is going on within these communities through an embedded planning model that builds relationships with communities.

### Liability

Liability issues limit community members from participating in city-sponsored programs. In energy programs, liability issues disrupt opportunities for homeowners to participate. (N.Boateng, personal communication May 2021). There needs to be collaboration among various departments to understand community conditions on the ground and to create a holistic approach that respects individual conditions. Cities are dependent on fees collected from permitting and plan checks; therefore, tier schedules respective to household income should be implemented to further support low-income neighborhoods. In the County of San Mateo, third-party building

inspectors are contracted to carry out unpermitted ADU inspections to reduce liability. Similarly, in the City of Sausalito, participation in their program allows participants to abstain from immediately disclosing the address, reduces upfront liability risks, and results in more housing units and fewer code enforcement violations.

## **Recommendations**

Based on our findings, we develop formal recommendations for adoption by the City of Los Angeles. The recommendations are divided into key divisions that play a vital role in the permitting process: Planning, Building and Safety, and Code Enforcement. Overall, we recommend that a pilot program for the Pacoima neighborhood best approaches formalizing unpermitted units; pilot programs are much more practical to implement and assess as we move toward city-wide efforts. Overall, the city's goal should be to preserve as many units as possible and avoid displacing tenants.

### **Planning: Waive All Development Standards for Unpermitted ADUs**

It is evident throughout the various amnesty and legalization programs that the health and safety of the units are of priority. Thus, the city needs to waive all zoning standards for unpermitted ADUs including density and floor to area ratio, and distance requirements between structures, height, parking, and setbacks. These standards are not necessary to determine if a unit is habitable, which is evident through the constant reduction of planning standards included in ongoing senate bills for the construction of new ADUs. Furthermore, this eliminates all required plan checks and processing fees with the division.

### **Planning: Allow Applicants to Withdraw Without Penalty**

One of the fundamental issues with amnesty, formalization, or legalization programs is convincing residents to participate. Individuals are risk-averse and hesitant to discuss, let alone apply for, items that are “illegal”. Similar to the County of San Mateo, the city needs to assure residents that participating in this program will not result in the demolition of the structure. One method to assure that is by allowing residents to withdraw from the process without penalty. Residents should be allowed to hold preliminary consultations and site inspections with staff to determine the best approaches. If deemed too costly, or the applicant no longer wants to proceed, they should be allowed to withdraw without any penalty or saved information. We recommend a formal document from the city given to applicants affirming all information provided will not be stored, nor will there be further follow-up. A formal application submittal would require the applicant to carry out the full process.

### **Planning: Get Out of the Office and “Plan”**

As termed by Jonathan Pacheco-Bell, Embedded Planning refers to hands-on, on-the-ground efforts by planners to fully engage communities and adequately understand the issues that they are facing and how to best approach these issues. Such practices are needed to fully understand the importance these structures have for the community. Planners need to get out of their office, emerge themselves with the Pacoima community, and work collaboratively to preserve these units. This on-the-ground approach shifts the way planners visualize unpermitted structures and opens up opportunities for formalization.

## **Planning: Facilitate Inter-Department Teams**

A major theme outlined in the findings is the emphasis on collaboration. Specifically, the collaboration between the city departments. While planners may be open to the idea of formalizing units, departments like Building and Code Enforcement are much more code-based and code-compliant. Planners have a more realistic understanding of why these structures are being built, and why they are necessary when compared to building officials and code enforcement officers who strictly focus on enforcing code. Thus, planners need to facilitate collaboration between all building and code enforcement to ensure the goal to preserve these units as opposed to seeing if they are permitted or not. Both Building and Code Enforcement should be willing to join these teams and be open to possibilities beyond the permitted-unpermitted spectrum.

## **Building: Waive Title 24 and Adopt Minimum Baseline Standards**

CA Building Code serves as the fundamental guideline for ensuring health and safety. Within the building code, Title 24 discusses necessary measures for green building and sustainability. While these standards are designed to address the ongoing climate crisis, the construction and modification of these methods are very costly and impractical for unpermitted structures that have been built years ago. Thus, similar to the County of San Mateo and the City of Santa Cruz, we recommend the city adopts minimum baseline standards that ensure units are safe and habitable without having to fully comply with all the codes. This will also result in reduced citations and Notice of Violations (NOVs) issued by code enforcement, as officers will enforce the baseline health standards as opposed to the entire building code.

### **Building: Leverage Health and Safety Code 179.8012**

Per state guidelines, Health and Safety Code 179.8012 grants individuals 5 years to come into compliance with their permits and/or violations. Low-income neighborhoods like Pacoima do not have the necessary funds to pay for required modifications readily available. Thus, granting individuals 5 years will allow residents to pursue formalization programs without the pressure of having to immediately comply.

### **Building: Guide Applicants!**

One of the first recommendations building departments have for applicants is finding a licensed architect or contractor to draw up plans. While building officials need plans to determine feasibility, there needs to be more guidance given to applicants. Residents are not familiar with the Building Code or permitting process; therefore, they are often exploited by individuals that claim they will do the plans for them but are charged over-priced fees, draw incomplete plans or simply disappear after receiving payment. Instead, building officials, inspectors, and plan checkers need to collaborate with residents. Rather than telling applicants what they need to submit, staff needs to guide applicants, teach them what the codes mean and how they apply to their unit, and direct them to licensed professionals. This also includes reducing permit and plan check fees.

### **Code Enforcement: Eliminate Connection to Criminal Charges and Court System**

In essence, citations are misdemeanors. Lack of compliance allows the City to prosecute individuals with the possibility of jail time. This further discourages individuals from taking advantage of amnesty, formalization, and legalization programs as owners and residents have to



bring the structure into compliance with the possibility of being prosecuted. This connection to the jail system needs to be removed for a formalization program to be successful as well as associated citations and penalties.

### **Code Enforcement: Planners Within Code Enforcement**

Similar to the City of Santa Cruz, Planners need to embed themselves within code enforcement roles and duties. Planners have a more comprehensive understanding of the issues that are happening and the reasons behind them. Not everything in the world is binary black or white, yes or no, legal or illegal, and it is time we shift our approaches of planning, building, and code enforcement to meet the needs of the communities served.

Overall, numerous policy recommendations can be adopted and incorporated within each of the appropriate agencies. Other recommendations include community-planning efforts and financial support. Almost all of the case studies analyzed did not have a financial budget or loan program to assist with costs and rather focused on reducing or waiving fees. Further analysis is needed on possible funding programs to best fit the needs of Pacoima.

### **Conclusion**

Unpermitted ADUs have long existed as a necessary housing typology to address housing shortages in low-income communities of color. While ongoing legislation has made the development of new ADUs much more feasible, current policies fail to support avenues for legalizing unpermitted housing stock. The prevalence of amnesty and legalization programs throughout local cities and counties in California shows that we can very much shift the way we approach unpermitted structures. Rather than simply seeing them as “illegal” units that do not

meet code or do not have permits, they should be seen as the very structures that provide shelter and safety for those that live among them. Community residents in Pacoima want and need ADUs; it's time for the city to listen to its constituents and do everything within their power to preserve these units and allow the people in them to remain in place.

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## COMMUNITY ORGANIZATION INTERVIEWS – INTERVIEW SCRIPT

University of California, Los Angeles  
Impact of the East San Fernando Valley Transit Corridor on Small Businesses  
Community Organization Interview Script

### **Script:**

I would like to thank you for taking this time to participate in our stakeholder interview. My name is [fill in your name] and I am a researcher with UCLA. I am a Master of Urban and Regional Planning candidate from UCLA and am conducting stakeholder interviews with organizers in communities with recent transit investments that have organized for business support. This research is a part of a graduate capstone project, and we are working with UCLA and Pacoima Beautiful, an environmental justice organization in Pacoima.

The construction of the Metro light rail along the Van Nuys corridor and its impacts on Pacoima is the backdrop for this research. The purpose of this study is to identify advocacy strategies and lessons learned that can help inform Pacoima Beautiful's business stabilization efforts. If you have any questions at any point, please do not hesitate to ask me.

- 1) First, we are required to have all interview participants read and agree to a "Consent to Participate" form.
  - a) This form explains in detail the purpose of the study which is to research case studies and community responses to transit-related commercial displacement.
- 2) This interview should take about 1h to complete.
- 3) If at any point during the interview you feel uncomfortable or you do not feel like answering a question, that is completely fine. You do not have to answer all of the questions and may choose to decline from answering any questions at any time without any consequences.
- 4) In the consent form, it discusses your rights as a study participant and persons at UCLA that you may contact if you have any questions about the study.

Let me give you a few minutes to read and review the consent form. [When the participant is finished reading the consent form, ask:] Do you have any questions?

Do we have your consent?[If yes, proceed with the interview.]

Thank you for consenting to this interview.

Now, we are ready to begin the interview. Do you have any questions before we begin?  
If at any point you need me to clarify any questions on the form, please let me know and I will do so.

## Questions

### 1. Context

- a. How did your organization get involved with advocacy/responses to the light rail project in your community? (*ask why, if not addressed in response*)

### 2. Displacement of businesses

- a. In general, what type of businesses did you work with? (*consider asking how they worked with businesses*)
- b. What do you think were the businesses' concerns, priorities, and attitudes to transit investment and construction?
- c. How were the concerns of business owners collected? (*For example, through a townhall hosted by a community-based organization or transit agency, or through surveys or interviews.*)
- d. How were businesses impacted by the construction? (*consider asking for how long?*)
- e. Were any businesses forced to leave due to acquisition by Metro/other transit agencies?
- f. To what extent did displaced businesses receive any support with relocation?
- g. How would you reflect on Metro's anti-displacement and business support efforts, such as the Business Development Center?

### 3. Organizing and advocacy

- a. What were some of the strategies used to organize businesses that you found were particularly successful?
- b. In general, how did the organization make organizing/advocacy decisions in this campaign?
- c. Were there any differences in priorities or attitudes among local businesses?
- d. (*Skip if addressed*) How did you address and resolve those differences?
- e. What legal protections were available to businesses at risk of displacement? To what extent were these protections sufficient?
- f. What were some other lessons learned from your organization's experience organizing for the protection of businesses from risks of displacement?
- g. Do you have any recommendations for future advocacy initiatives concerning business stabilization?
- h. Finally, do you have any recommendations for someone else you think we should talk to?

## Appendix B: Community Organization Outreach Email

### COMMUNITY ORGANIZATION INTERVIEWS – OUTREACH EMAIL

Dear [organizer's name]

My name is [student researcher's name], and I am a researcher with UCLA. I am a Master of Urban and Regional Planning candidate from UCLA and am conducting stakeholder interviews with organizers that have faced threats of displacement from transit projects and have organized for business stabilization. This research is part of a graduate capstone project that we are conducting with Pacoima Beautiful, an environmental justice organization in Pacoima. The construction of the Metro light rail along the Van Nuys corridor and its impacts on Pacoima is the backdrop for this research. The purpose of this study is to identify lessons learned from previous commercial anti-displacement and stabilization efforts to inform future advocacy work in Pacoima.

From our research concerning existing examples of communities that have organized for business stabilization amidst transit projects, we found that your perspectives on organizing for business stabilizing would be valuable for this research. Please let us know if you would be willing to dedicate 30-45 minutes of your time for a Zoom or phone interview. If so, please let us know a few available days and times between April 15- May 15.

Thank you in advance, and looking forward to hearing from you. Feel free to contact us if you have any questions.

Sincerely,

[student researcher's name]

pacoimabusinesssurvey2021@gmail.com



## COMMUNITY ORGANIZATION INTERVIEWS - CONSENT FORM

University of California, Los Angeles  
Impact of the East San Fernando Valley Transit Corridor on Small Businesses  
Consent to Participate in Research

Graduate students from the Department of Urban Planning at the University of California, Los Angeles (UCLA) are conducting a research study for the UCLA Center for Neighborhood Knowledge, Pacoima Beautiful and the Green Together Coalition. You were selected as a participant in this study because you are an organization we identified as being involved with commercial anti-displacement efforts in a community with new rail construction. Your participation in this research study is voluntary.

### **Why is this study being done?**

The purpose of this research is to understand how communities have responded to new rail construction, especially with regards to how they've supported small businesses, tried to mitigate the impacts of transit construction, and/or tried to prevent commercial displacement. This information will be used to create an inventory of responses to transit construction and recommend potential commercial anti-displacement strategies to help ensure a thriving business community in Pacoima.

### **What will happen if I take part in this research study?**

If you volunteer to participate in this study, the researcher will ask you to do the following: Participate in an interview where we will ask you about responses to the transit line and construction, impact to community businesses, and commercial anti-displacement measures over phone or video conference.

### **How long will I be in the research study?**

Participation will approximately take 30 min-1 hour. There may be brief follow-up if the interviewer has clarifying questions.

### **Are there any potential risks of discomforts that I can expect from this study?**

Participants may experience distress discussing the impact of transit construction and/or displacement in their communities. However, there are otherwise no anticipated risks or discomfort.

### **Are there any potential benefits if I participate?**

There will be no direct benefits from your participation in the research. The results of the research will assist in creating an inventory of responses to transit construction and recommending potential commercial anti-displacement strategies to help ensure a thriving business community in Pacoima.

**Will I be paid for my participation?**

Participants will receive a \$50 gift card for your participation.

**How will information collected during this study be shared?**

Any information that is obtained in connection with this study will only be disclosed with your permission or as required by law. Recordings, transcripts, and notes about this interview will be kept in a secure, password-protected computer system that is only accessible to the researchers. We plan to share information collected during this interview with staff at Pacoima Beautiful in order to assist their organizing efforts. Your data, including de-identified data, may be kept for use in future research.

**What are my rights if I take part in this study?**

- You can choose whether or not you want to be in this study, and you may withdraw your consent and discontinue participation at any time. You can withdraw your consent by ending the interview at any point.
- Whatever decision you make, there will be no penalty to you, and no loss of benefits to which you were otherwise entitled.
- You may refuse to answer any questions that you do not want to answer and still remain in the study.

**Who can I contact if I have questions about this study?**

- The research team: If you have any questions, comments or concerns about the research, you can talk to one of the researchers

Please contact: Lauren Hiller, UCLA Master of Urban and Regional Planning Student at [pacoimabusinesssurvey@gmail.com](mailto:pacoimabusinesssurvey@gmail.com) or our supervisor, Dr. Silvia R. Gonzalez, at 818-270-0497 or via email at [sil.rgonzalez@ucla.edu](mailto:sil.rgonzalez@ucla.edu).

- If you have questions about your rights as a research subject, or you have concerns or suggestions and you want to talk to someone other than the researchers, you may contact the UCLA OHRPP by phone: (310) 206-2040; by email: [participants@research.ucla.edu](mailto:participants@research.ucla.edu) or by mail: Box 951406, Los Angeles, CA 90095-1406.

## SMALL BUSINESS SURVEY – COVER LETTER

University of California, Los Angeles  
Impact of the East San Fernando Valley Transit Corridor on Small Businesses  
Small Business Survey

Dear Business Owner or Manager,

UCLA Graduate Students are conducting a survey to study the potential impacts of the planned East San Fernando Valley Transit Project on businesses in Pacoima. The research study is being conducted with local community-based organization Pacoima Beautiful and the UCLA Center for Neighborhood Knowledge. You are receiving this survey because this business is located on Van Nuys Boulevard in an area of Pacoima that will be impacted by the new rail line. The results will inform efforts to support small businesses in the Pacoima area.

**The first 50 business owners or managers that complete this survey will receive a \$25 gift card for their time.**

To take the survey, follow one of the options below:

- Go to this link: [bit.ly/PacoimaBusiness](https://bit.ly/PacoimaBusiness)
- Scan the barcode below with your smartphone camera
- Call or text us at 415-723-1417 to schedule a time to fill out the survey via phone
- Email us at [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)

Thank you,

UCLA Urban Planning Research Team  
UCLA Luskin School of Public Affairs  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)



<https://forms.gle/CZ2VWdPDpYaB9dhU8>

**SMALL BUSINESS SURVEY – INSTRUMENT**  
**(For Owner or Manager)**

University of California, Los Angeles

Potential Impact of the planned East San Fernando Valley Transit Corridor on Small Businesses  
Small Business Survey

**Intro to Survey**

UCLA Graduate Students are conducting a survey to study the potential impacts of the planned East San Fernando Valley Transit Project on businesses in Pacoima. The research study is being conducted with local community-based organization Pacoima Beautiful and the UCLA Center for Neighborhood Knowledge. You are receiving this survey because this business is located on Van Nuys Boulevard in an area of Pacoima that will be impacted by the new rail line. The results will inform efforts to support small businesses in the Pacoima area.

Your participation in this research study is voluntary. You may refuse to answer any questions that you do not want to answer and still remain in the study.

The first 50 business owners or managers to complete this survey will receive a \$25 gift card for their time. To be eligible for this gift card, you will need to provide a phone number, so we can follow up with you. The results of this research will assist with understanding the concerns, needs, and priorities of business owners impacted by transportation infrastructure investments.

You can complete the survey in the following form or via phone by calling Laura at (415) 723-1417. If you have any questions, please reach out to us at [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com).

**Confidentiality Statement**

Any information that is obtained in connection with this study and that can identify you will remain confidential. It will be disclosed only with your permission. Confidentiality will be maintained by means of using pseudonyms and codes on transcripts. Data will be kept in a secure, password-protected computer system that is only accessible to the researchers.

***Survey Goal:***

- To understand the concerns, priorities, and attitudes of the Pacoima business community about the East San Fernando Light Rail Transit Project

**Basic Business Information**

1. Business name

- 
2. Business address

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3. Business phone number

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4. Email, or other contact information

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5. What industry is your business?

- Fast food/restaurant
- Hair salon/nail salon/barbershop
- Manufacturing/industrial
- Auto repair
- Retail (clothing, pet goods, home goods, furniture, etc.)
- Grocery store/Market/liquor store
- Church
- Bar
- Professional services (doctor, dentist, lawyer, accountant, etc.)
- Money transfer/financial services
- Non-profit
- Government
- Other: \_\_\_\_\_

6. How long have you been in business at this location?

---

7. What is your role in this business?

- Owner
- Manager
- Other: \_\_\_\_\_

8. What is the primary mode of transportation your customers use to get to your business?

- Car
- Bus or other public transit
- Walk
- Bike
- Other

9. What is the second most common mode of transportation your customers use to get to your business?

- Drive
- Bus or other public transit
- Walk
- Bike
- Other

10. Do you lease or own the building/unit at this address?

- Own
- Rent

11. If you rent, how long have you been renting at your current location?
12. If you rent, what kind of lease agreement do you have for the building/unit at this address? Choose one:
- Written signed agreement
  - Verbal agreement
  - Other: \_\_\_\_\_
13. If you rent, please check every year you've received a rent increase for the building/unit at this address.
- Any time before 2017
  - 2017
  - 2018
  - 2019
  - 2020
  - 2021
  - My rent has *never* been increased.

**Light Rail Impacts**

14. Have you heard about the East San Fernando Light Rail Transit Project?
- Yes
  - No
  - Unsure
15. What do you know about the new rail line?
- \_\_\_\_\_
16. Do you have any concerns about the impact of construction of and/or opening of the light rail on your business?
- \_\_\_\_\_
- \_\_\_\_\_
17. Do you think there will be any benefits to your business from the construction of and/or opening of the light rail?
- \_\_\_\_\_
- \_\_\_\_\_
18. If parking is eliminated on Van Nuys Boulevard, as Metro proposes, how do you think your business will be affected?

19. Are you a member of any business organizations (e.g. associations, chamber of commerce) that could support you during the light rail construction? If yes, please specify.

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20. What is your overall opinion about the new rail line, in relation to your business?

---

### Priorities

**Disclaimer:** The researchers have no control over what resources will be available to support you. However, the following questions help us better understand the priorities of your business.

21. Are there any resources that you think could help your business respond to the impact of the light rail construction and opening?

- Legal assistance
- Advertising services & marketing strategies
- Social media development
- Training opportunities for employees/managers
- Assistance in hiring employees
- Technology training and devices
- Help applying for permits or licenses
- Building/space improvements
- Help paying for rent
- Other: \_\_\_\_\_

22. Have you seen improvements elsewhere that you would like to see near your business?

Select all that apply.

- Signage
- Facade improvements
- Trees & greenery
- Public seating areas
- Better sidewalks
- Better crosswalks
- Better street lighting
- Slower car speeds
- Other: \_\_\_\_\_

### COVID-19 Impacts

23. Overall, how has your business been affected by the COVID-19 pandemic?

- Large negative effect
- Moderate negative effect
- Little or no effect
- Moderate positive effect
- Large positive effect

24. Have you had to close your business anytime during the pandemic?

- Yes
- No

If yes, how long? \_\_\_\_\_

25. Number of employees now:

26. Number of employees before the pandemic:

27. Has your business requested financial assistance from any of the following sources?

Check all that apply:

- Paycheck Protection Program (PPP)
- Paycheck Protection Program (PPP) loan forgiveness
- Other CARES Act business assistance (e.g., EIDL, SVOG)
- Other Federal programs
- California Relief Grant
- State or local government programs
- Banks or other financial institutions
- Owners
- Family or friends
- Other sources: \_\_\_\_\_
- This business has not received financial assistance from any source since December 27, 2020
- Not sure or don't know

28. Has your business received financial assistance from any of the following sources?

- Paycheck Protection Program (PPP)
- Paycheck Protection Program (PPP) loan forgiveness
- Other CARES Act business assistance (e.g., EIDL, SVOG)
- Other Federal programs
- California Relief Grant
- State or local government programs
- Banks or other financial institutions
- Owners
- Family or friends



- Other sources: \_\_\_\_\_
- This business has not received financial assistance from any source since December 27, 2020
- Not sure or don't know

29. If your business has not applied for any financial assistance from the federal, state, and local government, choose all the reasons that may apply.

- Did not need any financial assistance
- Not sure or don't know
- Did not know about the programs
- Had difficulties completing an application
- Information and forms not in my native language
- Had difficulties getting or was denied assistance from governmental agencies
- Had difficulties meeting eligibility
- Other difficulties. Please specify \_\_\_\_\_

30. In the next six months do you think this business will need to do any of the following?  
Select all that apply:

- Obtain financial assistance or additional capital
- Help paying your business rent
- Identify new supply chain options
- Develop online sales or websites
- Increase marketing or sales
- Learn how to better provide for the safety of customers and employees
- Identify and hire new employees
- Make a capital expenditure
- Cancel or postpone a planned capital expenditure
- Permanently close this business
- Other: \_\_\_\_\_
- None of the above

### **Final questions**

31. **If you are one of the first 50 to respond to this survey, you are eligible to receive a \$25 gift card. If you would like to be considered for this gift card, please provide name, email, and phone number where we can reach you.**
32. As a reminder, your identity information will remain confidential. Can we share your business contact information with our community partner, Pacoima Beautiful? They are a Pacoima-based nonprofit working with us to understand Pacoima's needs and concerns

ahead of the light rail construction, and may contact you about opportunities to get involved in local business advocacy, ask for your feedback on other projects, etc.

- Yes, I consent to having my survey responses, business name, address, and contact information shared with Pacoima Beautiful.
  
- No, I do not consent to having my contact information shared with Pacoima Beautiful.

**Thank you for taking the time to answer our survey.**

(*SPANISH*) SMALL BUSINESS SURVEY – COVER LETTER

**ENCUESTA PARA NEGOCIOS PEQUEÑOS – CARTA DE PRESENTACIÓN**

University of California, Los Angeles  
Impacto del Proyecto Tren Ligero del Este del Valle de San Fernando en Negocios Pequeños  
Encuesta Para Negocios Pequeños

Estimado Dueño o Gerente de Negocio,

Estudiantes de maestría del departamento de Urbanismo en la Universidad de California, Los Ángeles, están llevando a cabo una encuesta para investigar el impacto posible que tendrá el planeado Tren Ligero del Este del Valle de San Fernando en los negocios pequeños de Pacoima. Las investigaciones se conducirán con la ayuda de la organización comunitaria *Pacoima Beautiful* y el *Centro de Conocimiento de Vecindarios* de UCLA. Usted está recibiendo esta encuesta porque su negocio se encuentra sobre el Boulevard Van Nuys en el área de Pacoima que será impactada por la construcción del tren ligero. Los resultados de la encuesta informarán los esfuerzos de Pacoima Beautiful para apoyar a negocios pequeños como el suyo.

**Los primeros 50 dueños de negocios o gerentes que llenen la encuesta recibirán una tarjeta de regalo con \$25 por su participación.**

Para participar en la encuesta, siga **una** de las siguientes opciones:

- Abra este enlace en su computadora o teléfono: [bit.ly/PacoimaBusiness](https://bit.ly/PacoimaBusiness)
- Escanee con la cámara de su teléfono el código de barras que está debajo de la firma de esta carta
- Llámenos o envíenos un mensaje de texto al 415-374-1213 para participar en la encuesta por teléfono.
- Envíenos un correo electrónico a [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)

Agradecemos su tiempo.

Cordialmente,

UCLA Urban Planning Research Team  
UCLA Luskin School of Public Affairs  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)



<https://forms.gle/CZ2VWdPDpYaB9dhU8>

**(SPANISH) SMALL BUSINESS SURVEY – INSTRUMENT**

**ENCUESTA PARA NEGOCIOS PEQUEÑOS – FORMULARIO  
(Para el Dueño o el Gerente)**

University of California, Los Angeles  
Impacto del Proyecto Tren Ligero del Este del Valle de San Fernando en Negocios Pequeños  
Encuesta Para Negocios Pequeños

**Introducción de la encuesta**

Estudiantes de la Universidad de California, Los Ángeles (UCLA) están llevando a cabo una investigación para determinar las implicaciones del planeado Corredor de Tránsito del Valle del Este de San Fernando en los negocios de Pacoima. Las investigaciones se están llevando a cabo con la organización comunitaria *Pacoima Beautiful* y el *Centro de Conocimiento de Vecindarios* de UCLA. Usted está recibiendo esta encuesta porque este negocio está en el corredor comercial de Van Nuys Boulevard en el área de Pacoima que será impactada por el nuevo tren ligero.

Los resultados del estudio informarán esfuerzos para apoyar a negocios en el área de Pacoima, y serán compartidos con los participantes.

Su participación en esta investigación es completamente voluntaria. Usted puede negarse a contestar cualquier pregunta que no quiera contestar, y aún así podrá seguir formando parte del estudio.

Los primeros 50 dueños o gerentes de negocio que contesten esta encuesta podrán recibir una tarjeta de regalo con un valor de \$25. Para ser elegible y recibir la tarjeta de regalo, usted tendrá que proveer un número de teléfono para poder comunicarnos con usted. Los resultados de este estudio ayudarán a determinar las preocupación, necesidades, y prioridades de los dueños de negocios que serán afectados por las inversiones en infraestructura de transporte.

Puede completar la encuesta llenando este formulario, en línea, o llamando a Laura al (415) 723-1417 para contestar la encuesta por teléfono. Si tiene alguna pregunta, favor de llamarnos por teléfono, enviarnos un mensaje de texto, o mandarnos un correo electrónico a [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com).

Agradecemos de antemano su participación.

### **Declaración de Confidencialidad**

Toda la información que consigamos en estas investigaciones que pueda identificarlo(a) se mantendrá confidencial. La información solo podrá ser divulgada con su autorización. La confidencialidad se llevará a cabo con el uso de seudónimos y códigos en todos los expedientes. Los datos se mantendrán seguros bajo un sistema protegido a base de contraseñas y accesible solamente a los(as) investigadores(as).

### **Objetivo de la Encuesta:**

- Comprender las inquietudes, prioridades, y actitudes de la comunidad de negocios pequeños en Pacoima acerca del Proyecto Tren Ligero del Este del Valle de San Fernando.

### **Información Sobre el Negocio**

1. Nombre del negocio

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2. Dirección del negocio

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3. Número de teléfono del negocio

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4. Correo electrónico u otra información de contacto

---

5. ¿Bajo qué categoría se considera su negocio?

- Comida rápida/ Restaurante
- Salón de belleza/ Peluquería
- Fabrica/ Industria
- Taller/ Mecánico/ Reparación de automóviles
- Ventas (ropa, artículos para mascotas, artículos del hogar, muebles etc.)
- Mercado, tienda de comestibles, licorería.
- Iglesia
- Bar
- Servicios profesionales (doctor, dentista, abogado, contador, etc)
- Cambio de Moneda y Envíos de Dinero
- Organización sin ánimo de lucro
- Institución de gobierno

Si otro, especifique:

6. ¿Cuánto tiempo ha tenido su negocio en este local?

7. ¿Cuál es su oficio o posición en este negocio?

Dueño

Gerente

Si otro, especifique:

8. ¿Cuál es el **principal** modo de transporte que usan sus clientes para llegar a su negocio?

Carro

Bus u otro medio de transporte público

Caminando

Bicicleta

Si otro, ¿Cuál? \_\_\_\_\_

9. ¿Cuál es el segundo modo de transporte más común que usan sus clientes para llegar a su negocio?

Carro

Bus u otro medio de transporte público

Caminando

Bicicleta

Si otro, ¿Cuál? \_\_\_\_\_

10. ¿Es usted dueño o inquilino del edificio o de la unidad de esta dirección?

Dueño

Inquilino

11. Si es inquilino, ¿por cuánto tiempo ha estado rentando el local?

12. Si es inquilino y renta el local, ¿qué clase de contrato o acuerdo tiene para alquilar el edificio o la unidad de esta dirección? Elija sólo una opción:

Contrato en escrito

Contrato verbal

Si otro, especifique:

13. Si renta el local, por favor elija cada año que le hayan aumentado la renta del edificio o de la unidad.

Antes del 2017

2017

2018

2019

- 2020
- 2021
- Mi renta *nunca* ha sido aumentada.

**Implicaciones Acerca del Tren Ligero**

14. ¿Ha escuchado del Proyecto de Tren Ligero del Este del Valle de San Fernando?

- Si
- No
- No estoy segura(o)

15. ¿Qué sabe usted acerca de la nueva línea de tren?

16. ¿Tiene alguna preocupación por su negocio debido a las implicaciones de la construcción y/o la apertura del tren ligero?

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17. ¿Cree que habrá algún(os) beneficio(s) a resultado de la construcción o la apertura del tren ligero?

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18. ¿Cómo se vería afectado su negocio si el estacionamiento en el Boulevard de Van Nuys es eliminado, como lo está proponiendo Metro?

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19. ¿Es usted miembro de alguna asociación de negocios o cámara de comercio en su área, que le pueda brindar apoyo a su negocio durante la construcción del tren ligero?

- Si es así, favor de especificar.

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---

- No

20. ¿Cuál es su opinión general sobre el tren ligero en relación a su negocio?

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### Prioridades

***Declaración:** Como investigadores, no tenemos ningún control sobre los recursos disponibles ahora o en el futuro para su negocio. Sin embargo, las siguientes preguntas nos ayudarán a entender mejor las prioridades y necesidades de su negocio.*

21. ¿Qué recursos considera usted ayudarían a su negocio a responder a los impactos de la construcción del tren ligero? Marque todo lo que aplique.

- Ayuda legal
- Servicios y estrategias de publicidad y márketing para su negocio
- Desarrollo de las redes sociales de su negocio
- Oportunidades de entrenamiento para empleados/gerentes
- Ayuda para contratar a empleados
- Ayuda con aparatos/dispositivos y entrenamiento tecnológico para ponerse al día
- Ayuda con solicitudes para permisos o licencias de negocios
- Renovaciones a su edificio/local/unidad
- Asistencia para pagar la renta del negocio
- Si otro, especifique:

---

22. ¿Ha visto o notado renovaciones en otras partes que le gustaría ver cerca de su negocio? Marque todas las opciones que apliquen.

- Letreros
- Renovación de fachadas
- Árboles y plantas
- Asientos y áreas de descanso para el público
- Renovaciones a las banquetas
- Renovaciones a los cruces peatonales
- Más semáforos y luces para peatones
- Reducción al límite de velocidad
- Si otro, especifique:

---

### Impactos a causa de COVID-19

23. En general, ¿Que tanto ha sido afectado su negocio por la pandemia del COVID19?



- Gravemente afectado
- Moderadamente afectado
- Muy poco afectado o para nada afectado
- Positivamente afectado
- Significativamente beneficiado

24. ¿Ha tenido que cerrar su negocio temporalmente durante la pandemia?

- Sí. ¿Por cuánto tiempo? \_\_\_\_\_
- No

25. ¿Cuántos empleados tiene ahora?

26. ¿Cuántos empleados tenía antes de la pandemia?

27. ¿Ha **solicitado** asistencia financiera para su negocio de alguna de las siguientes fuentes?

Marque todas las opciones que apliquen.

- Programa de Protección de Pago (PPP)
- Programa de Protección de Pago (PPP) **Perdón de préstamo**
- Programa de Asistencia CARES Act (es decir, EIDL, SVOG)
- Otro programa federal
- Ayuda financiera de California
- Programa de un gobierno local o estatal
- Bancos u otras instituciones financieras
- Dueños
- Familia o amigos
- Otro. Favor de especificar: \_\_\_\_\_
- Este negocio no ha recibido ninguna ayuda financiera de ninguna fuente desde el 27 de Diciembre del 2020.
- No estoy seguro o no se

28. ¿Su negocio ha **recibido** asistencia financiera de alguna de las siguientes fuentes?

Marque todas las opciones que apliquen.

- Programa de Protección de Pago (PPP)
- Programa de Protección de Pago (PPP) Perdón de préstamo
- Programa de Asistencia CARES Act (i.e. EIDL, SVOG)
- Otro programa federal
- Ayuda financiera de California
- Programa de un gobierno local o estatal
- Bancos u otras instituciones financieras
- Duenos
- Familia o amigos
- Other sources: \_\_\_\_\_

- Este negocio no ha recibido ninguna ayuda financiera de ninguna fuente desde el 27 de Diciembre del 2020.
  - No estoy seguro o no se
29. Si su negocio **no ha solicitado** ningún tipo de asistencia federal, estatal, o local, elija todas las siguientes razones que le apliquen.
- No necesitamos asistencia financiera
  - No estoy segura(o) porque
  - No sabia de estos programas
  - Tuve dificultades en completar la solicitud.
  - La información no estaba en mi idioma nativo o de preferencia
  - Tuve dificultad o me negaron asistencia de alguna agencia de gobierno
  - Tuve dificultades con los requisitos de elegibilidad
  - Otra razón. Favor de explicar: \_\_\_\_\_
30. ¿En los próximos 6 meses, cree que este negocio necesitará hacer alguno de los siguientes? Marque todas las opciones que apliquen.
- Obtener ayuda financiera o capital adicional
  - Ayuda para pagar la renta del negocio
  - Identificar una nueva cadena de suministros
  - Servicios y estrategias de ventas en línea o una página web
  - Ayuda con mercadotecnia, para aumentar ventas, y para más publicidad
  - Aprender como hacer su negocio más seguro para los clientes y empleados
  - Identificar y contratar nuevos empleados
  - Hacer un gasto de capital
  - Cancelar o posponer un gasto de capital que tenía planeado
  - Cerrar permanentemente el negocio
  - Otra consideración. Favor de especificar:  
\_\_\_\_\_
  - Ninguna de las opciones son aplicables

### Preguntas Finales

31. Si usted es uno de los primeros 50 participantes de la encuesta, usted es elegible para recibir una tarjeta de regalo con \$25. Si es uno de los primeros 50 participantes, y le gustaría ser considerado para recibir la tarjeta de regalo, favor de llenar la siguiente información para poder contactarlo.

- Nombre: \_\_\_\_\_
- Numero de Telefono: \_\_\_\_\_
- Correo electrónico: \_\_\_\_\_

32. Queremos reafirmar que su información de identidad permanecerá confidencial.
- ¿De manera opcional, daría su consentimiento para compartir su información de contacto con nuestro aliado comunitario *Pacoima Beautiful*? *Pacoima Beautiful* es una organización sin fines de lucro en Pacoima que trabaja con nosotros para determinar las necesidades y las inquietudes de Pacoima ante la construcción del tren ligero. Si llegaran a contactarlo(a), sería para compartir oportunidades para participar en la promoción de negocios locales y preguntar su opinión sobre proyectos relevantes, etc.
- Si. **Si** doy mi consentimiento para que puedan compartir mis respuestas a la encuesta, el nombre y la dirección de mi negocio, y mi información de contacto con *Pacoima Beautiful*.
  - No. **No** doy mi consentimiento para que puedan compartir mi información de contacto con *Pacoima Beautiful*.

**Muchas gracias por su tiempo y su participación en nuestra encuesta.**

## SMALL BUSINESS SURVEY – CONSENT FORM

University of California, Los Angeles  
Impact of the East San Fernando Valley Transit Corridor on Small Businesses  
Consent to Participate in Research

Graduate students from the Department of Urban Planning at the University of California, Los Angeles (UCLA) are conducting a research study for Pacoima Beautiful, the Green Together Coalition, and the UCLA Center for Neighborhood Knowledge. You were selected as a participant in this study because you are a business owner or manager on Van Nuys Boulevard in an area of Pacoima that will be impacted by the East San Fernando Valley Transit Corridor. Your participation in this research study is voluntary.

### **Why is this study being done?**

The East San Fernando Light Rail Transit Corridor, which may start construction as early as this year, will be an above-ground light rail running from Van Nuys to San Fernando along Van Nuys Boulevard and San Fernando Road. The purpose of this research is to understand businesses' perceptions of the anticipated impacts of the East San Fernando Light Rail Transit Corridor on their business to better understand their concerns, experiences, and priorities, and to ensure a thriving small business community in Pacoima.

### **What will happen if I take part in this research study?**

If you volunteer to participate in this study, the researcher will ask you to do the following: Participate in a survey that will ask questions about your business, your thoughts about upcoming transit construction in Pacoima, and your demographics through a web form or phone call.

### **How long will I be in the research study?**

Participation will take a total of about 15-20 minutes. There may be brief follow-up if the researcher has clarifying questions.

### **Are there any potential risks of discomforts that I can expect from this study?**

Participants may experience distress discussing the impact of COVID-19 on their businesses and financial security. However, there are otherwise no anticipated risks or discomfort.

### **Are there any potential benefits if I participate?**

There are no direct benefits from your participation in the research. However, the results of the research will assist with understanding the concerns, needs, and priorities of business owners impacted by transportation infrastructure investments. The results will help Pacoima Beautiful, researchers, city planners, and policy makers that work with diverse communities to create commercial anti-displacement policies.

**Will I be paid for my participation?**

The first 30 respondents to the survey will receive a \$25 gift card for your participation. This payment will be given to you after we confirm your identity in a phone call.

**Will information about me and my participation be kept confidential?**

Any information that is obtained in connection with this study and that can identify you will remain confidential. It will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of using pseudonyms and codes on transcripts. Data will be kept in a secure, password-protected computer system that is only accessible to the researchers. Your data, including de-identified data, may be kept for use in future research.

**What are my rights if I take part in this study?**

- You can choose whether or not you want to be in this study, and you may withdraw your consent and discontinue participation at any time. You can withdraw your consent by exiting the survey at any time - your responses will not be recorded until you click “submit” at the end of the survey.
- Whatever decision you make, there will be no penalty to you, and no loss of benefits to which you were otherwise entitled.
- You may refuse to answer any questions that you do not want to answer and still remain in the study.

**Who can I contact if I have questions about this study?**

- The research team: If you have any questions, comments or concerns about the research, you can talk to one of the researchers. Please contact:

Laura Daza Garcia, UCLA Master of Urban and Regional Planning Student at [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com) or our supervisor, Dr. Silvia R. Gonzalez, at 818-270-0497 or via email at [sil.rgonzalez@ucla.edu](mailto:sil.rgonzalez@ucla.edu).

- If you have questions about your rights as a research subject, or you have concerns or suggestions and you want to talk to someone other than the researchers, you may contact the UCLA OHRPP by phone: (310) 206-2040; by email: [participants@research.ucla.edu](mailto:participants@research.ucla.edu) or by mail: Box 951406, Los Angeles, CA 90095-1406.

## **ENCUESTA PARA PEQUEÑOS NEGOCIOS – FORMULARIO DE CONSENTIMIENTO**

University of California, Los Angeles  
Impacto del Corredor de Tránsito del East San Fernando Valley en los Pequeños Negocios  
Consentimiento de Participación en la Investigación

Un grupo de estudiantes de la maestría de Planeación Urbana y Regional de la Universidad de California, Los Angeles (UCLA) están llevando a cabo una investigación para las organización comunitaria Pacoima Beautiful y el Centro de Conocimiento de Vecindarios de UCLA. Los dueños y gerentes de negocios en el corredor comercial de Van Nuys Boulevard fueron seleccionados como participantes en este estudio porque éstos serán impactados por el proyecto Corredor de Tránsito del Valle del Este de San Fernando. Su participación en esta investigación es absolutamente voluntaria.

### **¿Por qué se está llevando a cabo la investigación?**

El Corredor de Tránsito del Este de San Fernando, cuya construcción puede que empiece este año, será un tren ligero que atravesará las calles Van Nuys & San Fernando Blvd. El propósito de esta investigación es entender las percepciones de los impactos potenciales del Corredor de Tránsito del Este de San Fernando en la comunidad de ventas comerciales, y comprender las preocupaciones, experiencias y prioridades de los dueños de negocios en el área. La meta es empezar a buscar estrategias para proteger y mantener una próspera comunidad de negocios pequeños en Pacoima.

### **¿Qué pasaría si participo en este proyecto de investigación?**

Si usted decide participar en esta investigación voluntariamente, ésta consistirá en lo siguiente: Participar en una encuesta que le hará preguntas sobre su negocio, sus ideas acerca de del desarrollo del Corredor de Tránsito del Este de San Fernando, sus impresiones acerca de la construcción de transporte en Pacoima, y por último se le harán unas preguntas sobre su información demográfica.

### **¿Cuál es la duración de la encuesta?**

Su participación tomará aproximadamente de 15 a 20 minutos. Puede que alguna de las investigadoras le haga una llamada posteriormente si alguna aclaración es necesaria.

### **¿Debo anticipar algún riesgo de sentirme incómodo con esta encuesta?**

Los participantes pueden experimentar angustia o preocupación al discutir los impactos del COVID-19 en sus negocios o al discutir algún tema con respecto a sus finanzas. Sin embargo, no hay ningún otro riesgo de incomodidad asociado con la investigación.

### **¿Hay algún beneficio asociado con mi participación en la investigación?**

No hay ningún beneficio directo asociado con su participación. Sin embargo, los resultados de la investigación ayudarán a un mejor entendimiento de las preocupaciones, necesidades, y prioridades de la comunidad de negocios impactada por el desarrollo de infraestructura de transporte en Pacoima. Asimismo, los resultados ayudarán a Pacoima Beautiful, las investigadoras, planificadores urbanos y a políticos que trabajan en comunidades diversas a crear políticas para prevenir el desalojo de negocios comerciales en Pacoima.

### **¿Seré compensado por mi participación?**

Los primeros 50 participantes en la encuesta recibirán una tarjeta de regalo con \$25. Este pago se le dará después de confirmar su identidad por teléfono.

### **¿La información sobre mi y mi participación va a ser confidencial?**

Cualquier información obtenida en conexión con esta investigación y que pueda identificarle a usted va a ser confidencial. Ninguna información pertinente a su identidad será revelada sin su autorización o de acuerdo a como lo requiere la ley. El acuerdo de confidencialidad se mantendrá a través del uso de seudónimos en cualquiera de las transcripciones. Sus datos serán guardados en una computadora protegida por una clave, que sólo es accesible a los investigadores. Sus datos, incluyendo datos desidentificados, pueden ser guardados para uso en futuras investigaciones.

### **¿Cuáles son mis derechos si decido participar en la investigación?**

- Usted puede elegir si desea o no ser parte de la investigación, y puede retirar su consentimiento, y dejar de participar en esta investigación en cualquier momento. Usted puede retirarse de la investigación en cualquier momento al salirse de la página de la encuesta- sus respuestas no serán grabadas hasta que usted oprima el botón de “entregar/enviar” al final de la encuesta.
- Con cualquier decisión que tome, no habrá ninguna penalización hacia usted, ni usted perderá los beneficios a los que usted tenga derecho.
- Usted puede negarse a responder cualquier pregunta que no desee contestar, y aún así podrá seguir formando parte del estudio.

### **¿A quién puedo contactar si tengo alguna pregunta sobre esta investigación?**

- Al equipo de investigación: Si usted tiene alguna pregunta, comentario o preocupación con respecto a la investigación, usted puede contactar a una de las investigadoras.

Favor de contactar a:

Laura Daza Garcia, estudiante de maestría en UCLA Máster de Planeación Urbana, por correo electrónico: [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com) , o a nuestra supervisora, la

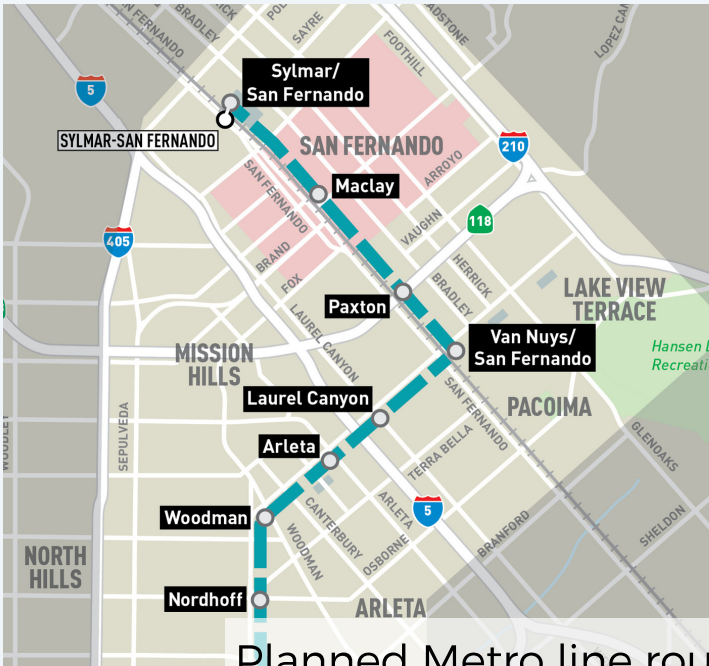
Doctora Silvia R. Gonzalez, at 818-270-0497 o por correo electrónico:  
[sil.rgonzalez@ucla.edu](mailto:sil.rgonzalez@ucla.edu) .

Si usted tiene alguna pregunta con respecto a sus derechos mientras forma parte de esta investigación, o si tiene alguna preocupación o sugerencia y quiere hablar con alguien aparte del equipo de investigación, por favor llame a la oficina de OHRPP al (310) 825-7122 o envíe una carta a: UCLA Office of the Human Research Protection Program 11000 Kinross Avenue, Suite 211, Box 951694 Los Angeles, CA 90095-1694.



# DO YOU HAVE A BUSINESS ON VAN NUYS BLVD?

→ A UCLA RESEARCH GROUP WANTS TO  
HEAR FROM YOU!



Planned Metro line route

Metro is building the **East San Fernando Valley Light Rail Line** - we want to learn about the priorities and concerns of the adjacent business community.

**Fill out the survey online or by phone by Friday, April 30!**

## TO TAKE THE SURVEY, PICK 1 OF THE FOLLOWING:

**Link:** <http://bit.ly/PacoimaBusiness>

**Scan** the barcode (right) with your smartphone camera

**Call or text** us at (415) 723-1417

**Email** us at  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)



<https://forms.gle/nffD9eM2vwLpjCNm8>

**SCAN WITH YOUR  
PHONE CAMERA TO  
ACCESS THE SURVEY**

**The first 50 participants\* will receive a \$25 gift card!**

*\*verification of business required*

# ¿TIENE USTED UN NEGOCIO EN EL AREA DE VAN NUYS BLVD?

→ ¡UN GRUPO DE ESTUDIANTES DE UCLA QUIERE SABER DE USTED!



Ruta prevista por Metro

Metro va a construir la **Línea de Tren Ligero del Este del Valle de San Fernando** - nosotros queremos conocer las prioridades y preocupaciones de la comunidad de negocios a lo largo del corredor comercial de Van Nuys.

¡Favor de responder a nuestra encuesta en línea o por teléfono **ANTES del 30 de abril!**

## PARA PARTICIPAR EN NUESTRA ENCUESTA, SIGA 1 DE LOS SIGUIENTES PASOS:

**Abra el siguiente enlace por internet**  
<http://bit.ly/PacoimaBusiness>

**Escanee el código de barra (a la derecha)**  
con la cámara de su teléfono

**Llame o envíe un mensaje de texto**  
al (415) 723-1417

**Envíe un correo electrónico a**  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)



<https://forms.gle/nffD9eM2vwLpjCNm8>

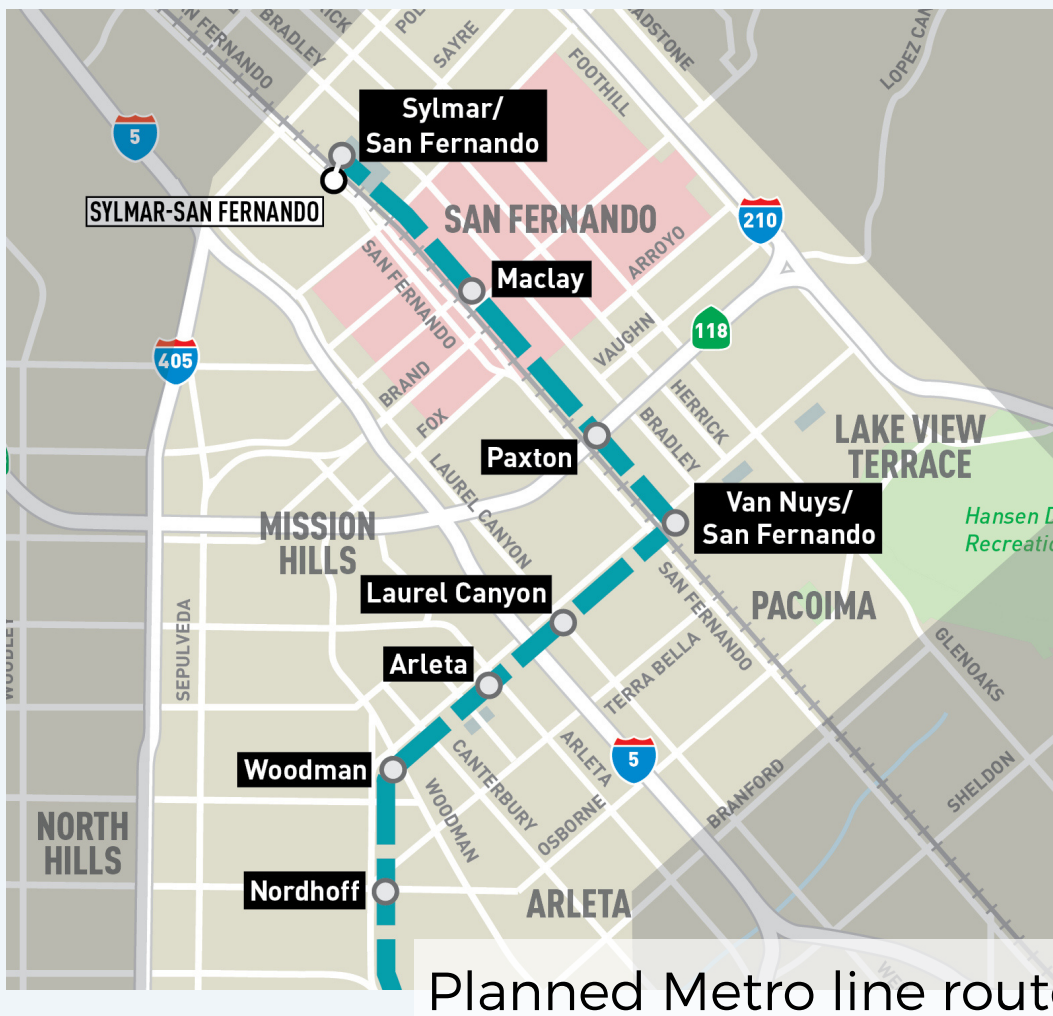
ESCANEE PARA  
LLEGAR A LA  
ENCUESTA

**¡Los primeros 50 participantes\* recibirán una tarjeta de regalo de \$25!**

*\*se requiere verificación de negocio*

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Type this link in your browser:  
[bit.ly/PacoimaBusiness](https://bit.ly/PacoimaBusiness)

Answer the survey on the phone  
by calling or texting us at (415)  
723-1417

Scan the barcode (right) with your  
smartphone camera

Email us at  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)



<https://forms.gle/nffD9eM2vwLpjCNm8>

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**¡Favor de responder a nuestra encuesta en línea ó por teléfono ANTES del 30 de abril!**

Si tiene preguntas llámenos al (415) 723-1417

**PARA PARTICIPAR EN NUESTRA ENCUESTA, SIGA 1 DE LOS SIGUIENTES PASOS:**

**Abra el siguiente enlace por internet**  
**[bit.ly/PacoimaBusiness](https://bit.ly/PacoimaBusiness)**

**Tome la encuesta por teléfono**  
**llamando o enviando un texto al (415) 723-1417**

**Escanee el código de barra (en la derecha)**  
con la cámara de su teléfono

**Envíe un correo electrónico a**  
**[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)**



<https://forms.gle/nffD9eM2vwLpjCNm8>

ESCANEE PARA  
ACCEDER A LA  
ENCUESTA

**¡Los primeros 50 participantes\* recibirán una tarjeta de regalo de \$25!**

*\*se requiere verificación de negocio*



Latino Policy &  
Politics Initiative

Dear

Thank you for taking the time to answer our survey about your business on Van Nuys Boulevard! Please find your \$25 Target gift card enclosed.

For any additional questions regarding this research, please call us at (415) 723-1417 or email us at [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com).

Thank you again for your participation!

Best,

UCLA Urban Planning Research Team  
UCLA Luskin School of Public Affairs  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)



Pacoima  
Beautiful



Latino Policy &  
Politics Initiative

Estimado dueño de negocio,

¡Muchas gracias por tomar tiempo para contestar nuestra encuesta sobre su negocio ubicado en el corredor comercial de Van Nuys!

Adjunta a esta carta se encuentra una tarjeta de regalo de Target por el valor de \$25 en agradecimiento por su participación.

Para cualquier pregunta adicional con respecto a nuestro estudio, por favor contáctenos llamando al (415) 723-1417 o por correo electrónico a [pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com).

Gracias de nuevo por su participación.

Cordialmente,

UCLA Equipo de Investigación de Planeación Urbana  
UCLA Luskin School of Public Affairs  
[pacoimabusinesssurvey2021@gmail.com](mailto:pacoimabusinesssurvey2021@gmail.com)

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# Focus Group Questions

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# Preguntas para grupos de enfoque

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**What do you do to help cool down your home during hot months?**



**¿Qué hace para ayudar a enfriar su hogar durante los meses calurosos?**



**Is the cost of your energy bill or water bill something that you are concerned about?**



**¿Es el costo de su factura de energía o de agua es algo que le preocupa?**



**Are there any changes you would like to make to your home to help conserve energy?**



**¿Hay algunos cambios que le gustaría hacer en su hogar para ayudar a conservar energía?**



**Has your property ever flooded? Do you do anything to prevent flooding?**



**¿Su propiedad se ha inundado alguna vez?**  
**¿Haces algo para evitar las inundaciones?**





**Do you like to keep potted plants in your yard? Would you install a garden?**



**¿Le gusta tener plantas en macetas en su jardín? ¿Instalarías un jardín?**



**Does your home have a rain gutter? Would you be interested in installing one?**



**¿Tiene su casa una canaleta de lluvia?**  
**¿Estaría interesado en instalar uno?**



**Which option from the toolkit are you most likely to implement?**



**¿Qué opción del kit de herramientas sería la más probable que implemente?**



**How much money would you be willing to spend on a project?**



**¿Cuánto dinero estaría dispuesto a gastar  
en un proyecto?**





**What types of support would be important to help you and your family install one or more of these interventions?**



**¿Qué tipo de apoyo sería importante para ayudarlo a usted y a su familia a instalar una o más de estas intervenciones?**



**Is there any information that the toolkit is missing?**



**¿Hay alguna información que falte en el kit de herramientas?**



**Muchas gracias!**

# Infraestructura resistente al clima para su hogar

Ahorra Agua · Ahorra Energía · Ahorra Dinero



## UNA GUÍA PARA Pacoima, Los Ángeles





# Introducción: Cambio Climático en Pacoima

Esta página se dejó en blanco intencionalmente.



Las ciudades y las áreas urbanizadas pueden experimentar temperaturas varios grados más cálidas que las áreas rurales circundantes debido al entorno construido y la concentración de la actividad humana. Los edificios, las carreteras y otras superficies modificadas absorben la radiación solar más que los paisajes naturales, lo que lleva a un fenómeno conocido como Efecto de isla de calor urbano (UHI). Estas temperaturas relativas más altas tienen impactos perjudiciales tanto en la salud humana como en la ambiental. Pueden intensificar el impacto de las fuentes de calor y la mala calidad del aire, poner en riesgo a poblaciones sensibles y llevar a un mayor uso de aire acondicionado. El mayor uso de los sistemas de enfriamiento carga a los residentes con facturas de servicios públicos más altas y genera más emisiones relacionadas con la energía.

El noreste del Valle de San Fernando es una de las áreas más vulnerables al clima en la ciudad de Los Ángeles. La proximidad al uso de la tierra industrial y las autopistas transitadas crea condiciones de calidad del aire que son hasta un 60% peores que en cualquier otro lugar de California. También se espera que los vecindarios de SFV experimenten un aumento de casi el 100 por ciento en el número promedio de días por año que supere los 95 grados Fahrenheit. Además, la gran cantidad de superficies impermeables como el hormigón, el asfalto y el metal evitan que el agua de lluvia fluya hacia el suelo y provoque inundaciones durante las tormentas.

La siguiente guía proporciona estrategias y prácticas a nivel del hogar que los residentes pueden usar para combatir los desafíos relacionados con el calor y el agua.



## Barriles de lluvia



- Reducir la escorrentía y prevenir las inundaciones y la erosión
- Conservar agua



## Jardineras de bajante



- Reducir la escorrentía y prevenir inundaciones
- Conservar agua
- Filtración de aguas subterráneas
- Embellecimiento de la propiedad



## Climatización por calor



- Incrementar la eficiencia energética del hogar, reduciendo los costos de los servicios públicos de energía.
- Reducir las emisiones de los sistemas de refrigeración



## Pavimento permeable



- Permitir la infiltración de agua subterránea
- Reducir las inundaciones y la erosión del suelo



## Pavimento frío



- Confort térmico: reduce la temperatura de la superficie y del aire
- Disminuir la escorrentía de aguas pluviales (si el pavimento es permeable)
- Menor ruido de neumáticos si se aplica en carreteras
- Dado que el pavimento de hormigón y el asfalto constituyen entre el 20 y el 40 por ciento de un tejido urbano típico, existe un gran potencial de adopción generalizada



## Techos fríos

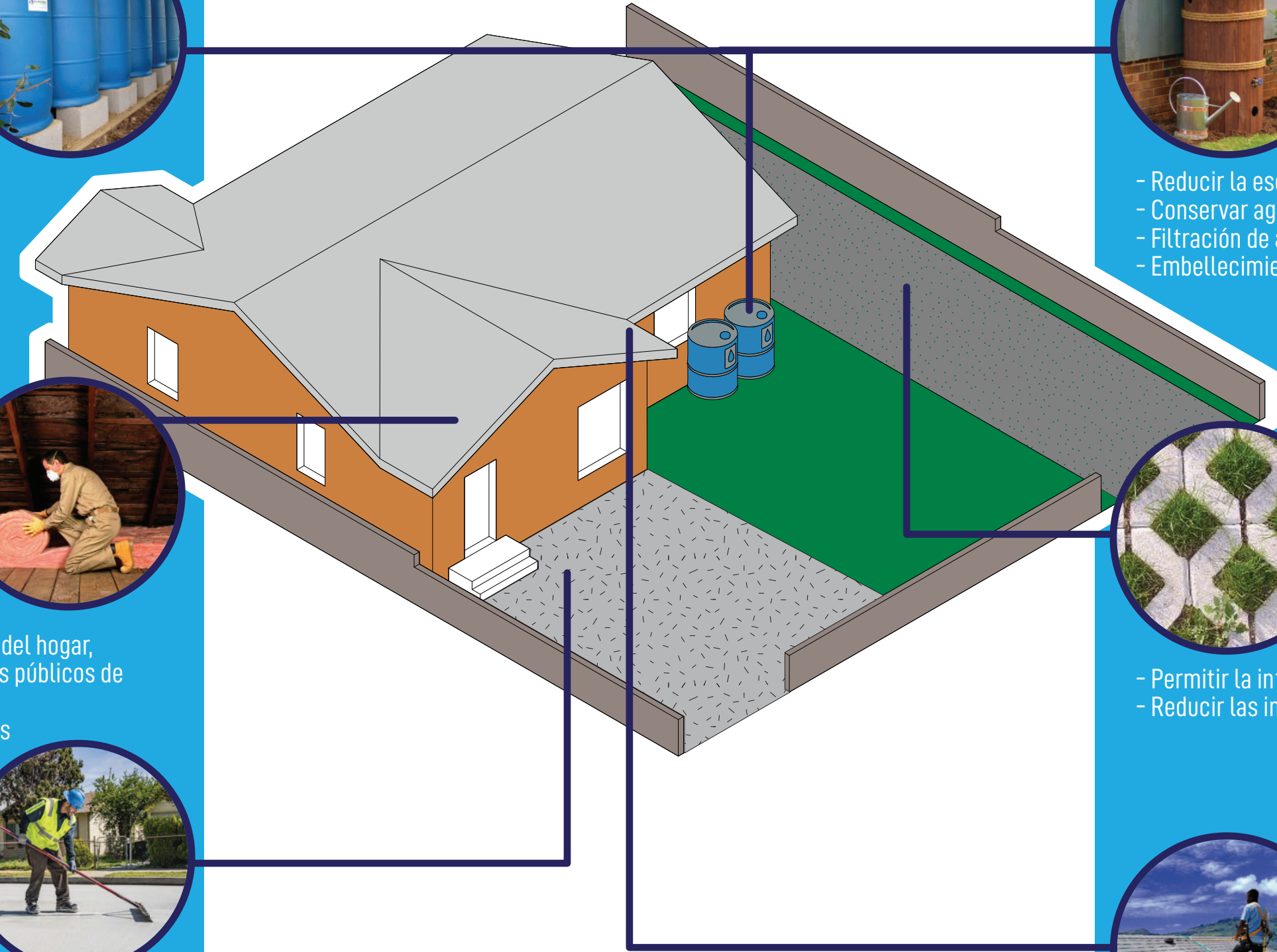


- Confort térmico: reduce la temperatura de la superficie y del aire
- Disminuir la necesidad de sistemas de enfriamiento.
- Prolongar la vida útil del techo existente








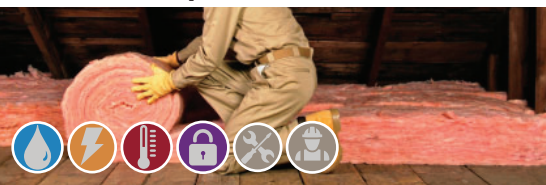
## Leyenda

- |                 |            |             |
|-----------------|------------|-------------|
| Ahorra agua     | Permanente | Bricolaje   |
| Ahorra energía  | Retirable  | Contratista |
| Mitiga el calor |            |             |





# Guía Rápida: Estrategias y Practicas

Intervención	Hora de Instalar	Costos Iniciales	Financiamiento Alternativo	Beneficio de temperatura	Beneficio de agua	Ahorros de energía
<b>Barriles de lluvia</b> 	<1 día	\$60-300 por barril \$200+ para bajante y canalón	Reembolso LADWP de \$35	NA	1 pulgada de lluvia por pie cuadrado de techo = aproximadamente medio galón de agua	NA
<b>Jardineras de bajante</b> 	1 día	\$8-15 por pie cuadrado \$200+ para bajante y canalón	Posible financiación al 100% de Residential Energy Efficiency Loan Program	NA	1 pulgada de lluvia por pie cuadrado de techo = aproximadamente medio galón de agua	NA
<b>Techos fríos</b> 	1-5 días	\$0.75-3 por pie cuadrado, dependiendo del material	Reembolso de hasta \$0.30 de LADWP por pie cuadrado; Posible financiación al 100% de Residential Energy Efficiency Loan Program	Superficies hasta 60°F más frías Aire hasta 4°F más frío	NA	7-20% menos de costes de refrigeración
<b>Pavimento frío</b> 	1-7 días	\$0.10-\$10 por pie cuadrado, dependiendo del material	Posible financiación al 100% de Residential Energy Efficiency Loan Program	Aire hasta 1° F más frío	NA (salvo en combinación con pavimento permeable)	Menos de \$ 0.60 por metro cuadrado de pavimento modificado (anualmente)
<b>Pavimento permeable</b> 	1-2 días	\$0.10-\$10 por pie cuadrado, dependiendo del material	Reembolso de hasta \$3 de LADWP por pie cuadrado; Property Assessed Clean Energy (PACE) financiación; Posible financiación al 100% de Energy Efficiency Loan Program	3-7° F aire más frío	NA	NA
<b>Climatización por calor</b> 	1-7 días	\$50-\$5000, dependiendo de la mitigación	Weatherization Assistance Program de USDOE; Low-Income Home Energy Assistance Program; Posible financiación al 100% de Residential Energy Efficiency Loan Program	5-20 °F cooler air	NA	15% menos de costes de refrigeración

# Barriles de lluvia



## Descripción

Los barriles de lluvia son una herramienta de captura de aguas pluviales que recogen el agua de lluvia directamente del techo de una estructura y la almacenan para su uso futuro. Los barriles pueden ser cualquier tipo de recipiente que pueda recoger el agua que fluye desde un techo a través de un bajante. Son no permanente, móvil y fácil de incorporar a un sistema de conducción de agua existente, como las canaletas de lluvia. El agua que se recoge en los barriles de lluvia no es apta para el consumo humano, pero se puede utilizar para usos al aire libre, como lavar coches, enfriar el pavimento. Además, cuando el agua de lluvia se canaliza y controla, puede evitar inundaciones y la erosión del suelo en un jardín ajardinado.

La cantidad de barriles recomendados para capturar la escorrentía de un techo depende del tamaño del techo. Se sugiere que una propiedad tenga un barril por cada 500 pies de área de techo. Esto evitará que los barriles se desborden en caso de una fuerte tormenta.



## Escalabilidad

Los barriles de lluvia comprados en las tiendas de mejoras para el hogar suelen ser de 50 galones. Para los residentes que desean recolectar más de 50 galones de agua de lluvia de un bajante, es posible conectar dos barriles juntos usando una manguera de desbordamiento.



## Mantenimiento

Los barriles de lluvia requieren canaletas en el techo, o al menos un bajante. La instalación de una canaleta de lluvia puede costar entre \$ 200 y \$ 400, y deben mantenerse para las hojas caídas y los escombros.



## Cómo adquirir ¡haga click abajo!

- Compre en tiendas de mejoras para el hogar como Home Depot, Lowes y Walmart
- Haz un sistema de barril de lluvia por menos de \$ 50
- Use materiales alternativos como botes de basura limpios o barriles de plástico de 60 galones (puede encontrarlos en negocios que manejan alimentos a granel)
- Asista a los sorteos de barriles de lluvia organizados por Keep LA Beautiful y el Departamento de Obras Públicas
- Obtenga un reembolso de \$ 35 de LADWP



## Costos Iniciales

El costo varía según el tamaño del contenedor, el material y la marca. Un barril comprado en una tienda de mejoras para el hogar puede oscilar entre 60 y 300 dólares por barril. Sin embargo, es posible crear un sistema de barril de lluvia de bricolaje por mucho menos.



## Desafíos potenciales

Requiere un sistema de canalones de techo que funcione. Las precipitaciones en Pacoima se limitan a unos pocos días de lluvia al año; se necesitarían varios barriles de lluvia para capturar un suministro duradero de agua.

# Jardineras de bajante



## Descripción

Una maceta es un contenedor ajardinado ubicado sobre el suelo o en el suelo. Las macetas de bajante se colocan en la parte inferior de los bajantes para que puedan recibir la escorrentía de aguas pluviales del techo. El agua de lluvia se canaliza a través del bajante desde el techo hasta un área de almacenamiento dentro de la maceta. El agua almacenada se usa para regar las plantas o se libera al suelo para volver a ingresar al sistema de agua subterránea, lo que reduce la cantidad de agua de lluvia que se escurre de una propiedad y arrastra los contaminantes a los desagües pluviales.

El tamaño recomendado de la maceta depende del tamaño de la propiedad y la cantidad de superficies impermeables (superficies que no permiten el paso del agua, como concreto, asfalto y material para techos). Generalmente, debe ser el 4% del área impermeable de la propiedad. Por ejemplo, si su propiedad tiene 100 pies cuadrados de patio y entrada de concreto, su maceta debe ser de 4 pies cuadrados. Una maceta que mide 2x2x4 (L / W / H) tiene un volumen de almacenamiento de 78 galones de agua. Las macetas generalmente se construyen de metal u hormigón y miden aproximadamente cuatro pies de largo. Se pueden colocar en cualquier lugar de una propiedad siempre que esté conectado a un bajante. Las macetas sobre el suelo se pueden mover como se desee, haciéndolas accesibles tanto para los inquilinos como para los propietarios.



## Escalabilidad

Las jardineras se pueden construir de cualquier tamaño que se adapte a las necesidades del propietario.



## Mantenimiento

Las sembradoras de bajante requieren un bajante y un sistema de canalones en el techo que funcione. Los jardineros deben someterse a un mantenimiento anual de plantas y suelos, similar al paisaje típico plantado en el suelo.



## Cómo adquirir ¡haga click abajo!

- Alternativas de bricolaje a los materiales comprados en la tienda.
- LADWP y SoCalGas se han asociado con el programa de California Residential Energy Efficiency Loan. Esto proporciona un financiamiento del 100% para proyectos de renovación de viviendas, lo que significa que no se requiere efectivo por adelantado.



## Costos Iniciales

Los costos varían según el tipo, el tamaño y la selección de la planta. La maceta en sí cuesta alrededor de \$ 8-15 por pie cuadrado. Para los residentes que no tienen un sistema de canalones de techo existente, los bajantes normalmente cuestan \$ 160 cada uno.



## Desafíos potenciales

Requiere un sistema de canalones de techo que funcione. Debe colocarse lejos de estructuras de muros de contención.



# Techos fríos



## Descripción

Los materiales para techos oscuros tradicionales absorben el calor del sol y pueden hacer que un edificio y el aire circundante sean más calientes. Los materiales para techos fríos tienen una mayor reflectancia solar (son de color más claro), lo que puede disminuir la radiación neta y mantener la superficie del techo hasta 60 grados Fahrenheit más frío que un techo oscuro tradicional. Mitigar el calor en el nivel del techo disminuye el flujo de calor hacia abajo en un edificio y puede reducir la necesidad de usar sistemas de aire acondicionado. Esto ahorra a los consumidores dinero en sus facturas de enfriamiento y reduce el calor exterior que se emite. Los materiales fríos para techos incluyen pintura reflectante, láminas reflectantes y tejas o tejas reflectantes. El revestimiento de pintura fría para techos puede prolongar la vida útil de un techo existente al tiempo que ahorra energía al consumidor.

Generalmente, puede esperar que un techo fresco cueste un 20% más que un techo tradicional. La ciudad de Los Ángeles aprobó la Ordenanza sobre techos fríos en 2015, que requiere que todos los edificios nuevos y renovados tengan un techo fresco. La regla no se aplica a reparaciones de techo o reemplazos de techo donde se está tratando menos del 50% del techo.



## Escalabilidad

No escalable.



## Costos Iniciales

El costo de un techo fresco varía según el material. Puede costar tan poco como 75 centavos por pie cuadrado para el revestimiento reflectante y oscilar hasta \$ 3 por pie cuadrado para membranas de techo frías de una sola capa. Generalmente, puede esperar que un techo fresco cueste un 20% más que un techo tradicional.



## Desafíos potenciales

Requiere techo en buen estado.



## Mantenimiento

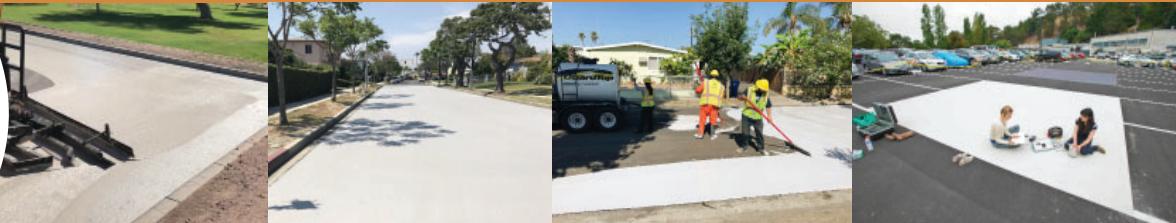
Agua para lavado a presión y detergentes especializados diseñados para sistemas de techo de una sola capa: esto debe hacerse anualmente. Los revestimientos para techos deben volver a aplicarse cada 15 años.



## Cómo adquirir ¡haga click abajo!

- Obtenga un reembolso de LADWP de hasta 30 centavos por pie cuadrado de material para techos
- Solicite financiamiento a través de la asociación LADWP y SoCalGas con programa de California's Residential Energy Efficiency Loan de préstamos por eficiencia. Esto proporciona financiación del 100% para proyectos de mejora de viviendas.
- Visite el sitio web del Cool Roofs Rating Council para obtener recursos que lo guiarán a través del proceso.

# Pavimento frío



## Descripción

El pavimento hecho por el hombre (como el hormigón y el asfalto) tiene propiedades térmicas y absorbentes que lo hacen generalmente más cálido que las áreas con vegetación natural. Las alternativas de pavimento frío al concreto y al asfalto son de color más claro y reflejan más energía solar. Esto enfría las superficies y promueve el confort térmico en un área sin vegetación. Los materiales de pavimento fríos pueden reemplazar los materiales convencionales en aceras, entradas de vehículos, patios e incluso carreteras.



## Escalabilidad

El pavimento frío es escalable desde aplicaciones pequeñas, como pasarelas de patio trasero, hasta aplicaciones más grandes, como entradas de vehículos y aceras.



## Desafíos potenciales

El costo varía ampliamente según el material. Los residentes que buscan una opción económica pueden optar por pintura de alta reflectancia, que cuesta 10 centavos por pie cuadrado. Otros materiales como el asfalto permeable y de alta reflectancia pueden costar hasta \$ 10 por pie cuadrado.



## Mantenimiento

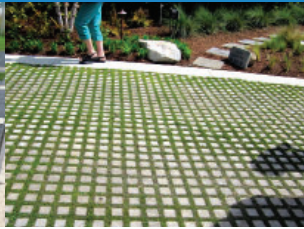
Baladí.



## Cómo adquirir ¡haga click abajo!

- Solicite financiamiento a través de la asociación LADWP y SoCalGas con programa de California's Residential Energy Efficiency Loan de préstamos por eficiencia. Esto proporciona financiación del 100% para proyectos de mejora de viviendas.
- LADWP y SoCalGas se han asociado con el programa de California Residential Energy Efficiency Loan. Esto proporciona un financiamiento del 100% para proyectos de renovación de viviendas, lo que significa que no se requiere efect

# Pavimento permeable



## Descripción

Los materiales de pavimento convencionales, incluidos el hormigón y la roca, no permiten que el agua se filtre en el suelo, lo que evita la recarga del agua subterránea y aumenta el potencial de inundaciones durante los eventos de lluvia. El pavimento permeable contiene poros o espacios entre las juntas que permiten que el agua fluya hacia el suelo. Estos materiales de pavimento ayudan a restablecer un equilibrio hidrológico más natural al minimizar la escorrentía superficial, filtrar los contaminantes del agua y capturar la precipitación para el almacenamiento subterráneo.

El pavimento permeable a nivel del hogar se usa con mayor frecuencia en aceras, patios y entradas de vehículos. Los materiales incluyen asfalto y concreto poroso, adoquines de juntas abiertas, bloques de concreto entrelazados y adoquines con grava o vegetación en los huecos.



## Escalabilidad

El pavimento permeable se puede implementar en fases. Por ejemplo, un residente puede reemplazar su entrada de concreto con concreto poroso un año y reemplazar su patio trasero con adoquines permeables el próximo año.



## Mantenimiento

Energía o agua para pasar la aspiradora o lavar a presión para limpiar nuestros escombros de superficies porosas. El resellado cuesta alrededor de 10 centavos por pie cuadrado, si es necesario para sellar chips.



## Cómo adquirir ¡haga click abajo!

- Obtenga un reembolso de LADWP de hasta \$ 3 por pie cuadrado de área ajardinada
- Solicite financiamiento a través de la asociación LADWP y SoCalGas con programa de California's Residential Energy Efficiency Loan de préstamos por eficiencia. Esto proporciona financiación del 100% para proyectos de mejora de viviendas.
- Solicita financiación a través de Property Assessed Clean Energy Financing (PACE)



## Costos Iniciales

Por lo general, un 10-20 por ciento más caro que el pavimento tradicional, pero depende del material:

Asfalto convencional: 10 centavos a \$ 1.5 por pie cuadrado.

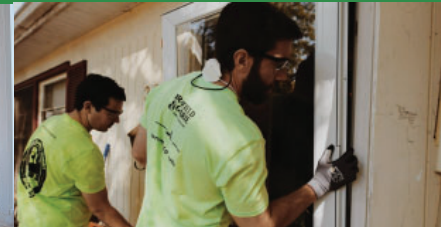
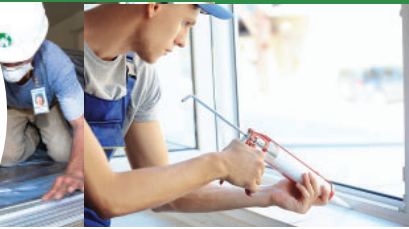
Concreto convencional: 30 centavos a \$ 4.50 por pie cuadrado.

Asfalto poroso: \$ 2-2.50 por pie cuadrado.

Concreto permeable: \$ 5-6.25 por pie cuadrado

Adoquines permeables \$ 5-10 por pie cuadrado.

# Climatización por calor



## Descripción

La climatización del hogar es la práctica de modificar un edificio para promover la eficiencia energética. Modificaciones como aislar paredes y techos y sellar fugas de aire alrededor de ventanas y puertas pueden proteger un edificio de los elementos, especialmente del sol. Esto puede ahorrar dinero a los residentes en sus facturas de refrigeración y promover el confort térmico. Algunas prácticas son permanentes y otras son removibles, lo que hace que la climatización sea una solución tanto para inquilinos como para propietarios de viviendas.



## Escalabilidad

Las prácticas de climatización se pueden instalar habitación por habitación dentro de una casa o apartamento.



## Costos Iniciales

Los burletes alrededor de los rangos de puertas y ventanas en una casa típica pueden costar menos de \$ 50. Sin embargo, los proyectos de climatización más grandes pueden costar hasta \$ 5,000.



## Cómo adquirir ¡haga click abajo!

- Solicita financiación del programa de US Department of Energy's Weatherization Assistance Program. Este programa ayuda a los residentes de bajos ingresos con actualizaciones de climatización.
- Solicite el programa de beneficios federales de Low-Income Home Energy Assistance Program (LIHEAP). Esto proporciona a los hogares elegibles asistencia para los costos de energía del hogar.
- Solicite financiamiento a través de la asociación LADWP y SoCalGas con programa de California's Residential Energy Efficiency Loan de préstamos por eficiencia. Esto proporciona financiación del 100% para proyectos de mejora de viviendas.



# Climate Resilient Infrastructure For Your Home

Save Water · Save Energy · Save Money



## A GUIDE FOR Pacoima, Los Angeles





# Introduction: Climate Change in Pacoima

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Cities and urbanized areas can experience temperatures several degrees warmer than surrounding rural areas due to the built environment and concentration of human activity. Buildings, roads, and other modified surfaces absorb solar radiation more than natural landscapes do, leading to a phenomenon known as the urban heat island (UHI) effect. These higher relative temperatures have detrimental impacts on both human and environmental health. They can intensify the impact of heat waves and poor air quality, put sensitive populations at risk, and lead to increased use of air-conditioning. Higher use of cooling systems burdens residents with higher utility bills and creates more energy-related emissions.

The Northeast San Fernando Valley is one of the most climate-vulnerable areas in the city of Los Angeles. Proximity to industrial land use and busy freeways creates air quality conditions that are up to 60% worse than elsewhere in California. It is also expected that SFV neighborhoods will see a nearly 100 percent jump in the average number of days per year exceeding 95 degrees Fahrenheit. Further, the high amount of impervious surfaces such as concrete, asphalt, and metal prevent rainwater from flowing into the ground and cause flooding during storms.

The following guide provides strategies and practices at the household level that residents can use to combat heat and water challenges.



## Rain Barrels



- Reduce runoff and prevent flooding and erosion
- Conserve water



## Downspout Planters



- Reduce runoff and prevent flooding
- Conserve water
- Groundwater filtration
- Property beautification



## Heat Weatherization



- Increase energy efficiency of household, reducing energy utility costs
- Reduce emissions from cooling systems



## Permeable Pavement



- Allow for groundwater infiltration
- Reduce flooding and soil erosion



## Cool Pavement



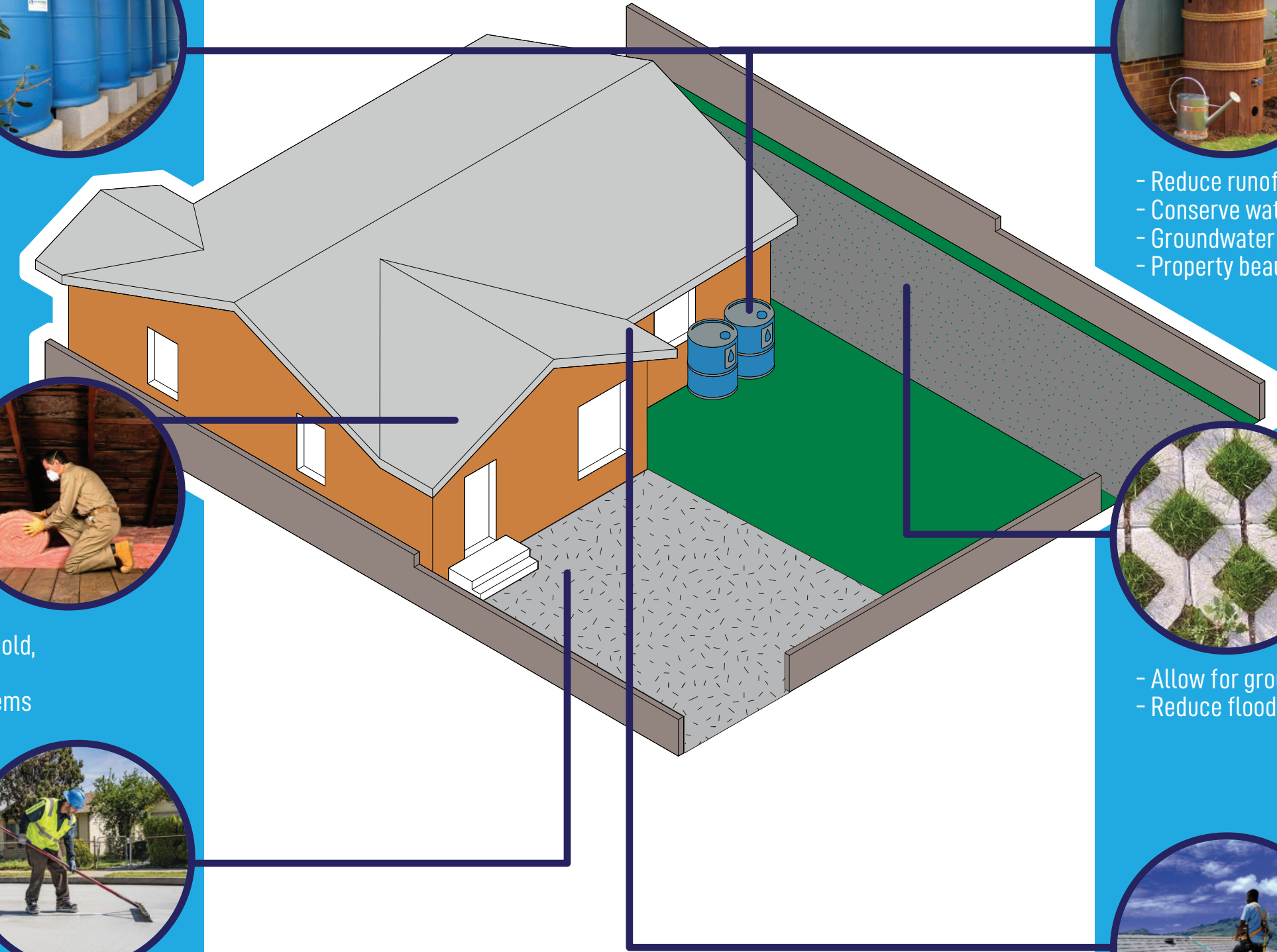
- Thermal comfort: reduce surface and air temperatures
- Decrease stormwater runoff (if the pavement is permeable)
- Lower tire noise if applied in roadways
- Since concrete pavement and asphalt make up 20-40 percent of a typical urban fabric, there is a lot potential for widespread adoption



## Cool Roofs








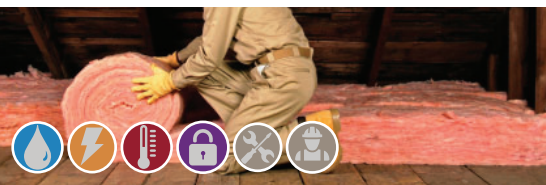
- Thermal comfort: reduce surface and air temperatures
- Decrease need for cooling systems
- Extend the life of existing roof



## Legend

- Water Saver
- Energy Saver
- Heat Mitigator
- Permanent
- Removable
- Do It Yourself
- Contractor

# Quick Guide: Strategies and Practices

Intervention	Time to Implement	Upfront Cost	Alternate Funding	Temperature Benefit	Water Benefit	Energy Savings
<b>Rain Barrels</b> 	<1 day	\$60-300 per barrel \$200+ for downspout and gutter	\$35 LADWP Rebate	NA	1 inch of rain per sqft of roof = about a half a gallon of water	NA
<b>Downspout Planters</b> 	1 day	\$8-15 per square foot \$200+ for downspout and gutter	Possible 100% financing from Residential Energy Efficiency Loan Program	NA	1 inch of rain per sqft of roof = about a half a gallon of water	NA
<b>Cool Roofs</b> 	1-5 days	\$0.75-3 per square foot, depending on material	Up to \$0.30 LADWP rebate per square foot; Possible 100% financing from Residential Energy Efficiency Loan Program	Up to 60°F cooler surfaces Up to 4°F cooler air	NA	7-20% less cooling costs
<b>Cool Pavement</b> 	1-7 days	\$0.10-\$10 per square foot, depending on material	Possible 100% financing from Residential Energy Efficiency Loan Program	Up to 1°F cooler air	NA (unless in combination with permeable pavement)	Less than \$0.60 per square meter of pavement modified (annually)
<b>Permeable Pavement</b> 	1-2 days	\$0.10-\$10 per square foot, depending on material	Up to \$3 LADWP rebate per square foot; Property Assessed Clean Energy (PACE) financing; Possible 100% financing from Residential Energy Efficiency Loan Program	3-7 °F cooler air	NA	NA
<b>Heat Weatherization</b> 	1-7 days	\$50-\$5000, depending on mitigation	USDOE's Weatherization Assistance Program; Low-Income Home Energy Assistance Program; Possible 100% financing from Residential Energy Efficiency Loan Program	5-20 °F cooler air	NA	15% less cooling costs



# Rain Barrels



## Description

Rain barrels are a stormwater capture tool that collect rainwater directly from the roof of a structure and store it for future use. Barrels can be any type of container that is able to catch water that flows down from a roof through a downspout. They are non-permanent, moveable, and easily incorporated into an existing water conveyance system such as rain gutters. The water that is collected by rain barrels is not suitable for human consumption, but can be used for outdoor uses such as washing cars, cooling down pavement, and watering plants. Additionally when rainwater is channelized and controlled, it can prevent flooding and soil erosion in a landscaped yard.

The number of barrels recommended to capture runoff from a roof depends on the size of the roof. It is suggested that a property has one barrel for every 500 feet of roof area. This will prevent overflowing barrels in the event of a heavy storm.



## Scalability

Rain barrels purchased from home improvement stores are typically 50 gallons. For residents who want to collect more than 50 gallons of rainwater from one downspout, it is possible to connect two barrels together using an overflow hose.



## Maintenance

Rain barrels require a roof gutters, or at least a downspout. Installing a rain gutter can range from \$200-400, and they must be maintained for fallen leaves and debris.



## How to Acquire *Click below!*

- Purchase at home improvement stores such as Home Depot, Lowes, and Walmart'
- DIY a rain barrel system for under \$50
- Use alternative materials such as clean trash cans or 60-gallon plastic barrels (you can find these at businesses that handle bulk food items)
- Attend rain barrel giveaways hosted by Keep LA Beautiful and Department of Public Works
- Get a \$35 rebate from LADWP



## Upfront Costs

The cost varies by container size, material, and brand. A barrel bought from a home improvement store can range from \$60-300 per barrel. However, it is possible to create a DIY rain barrel system for considerably less.



## Potential Challenges

Requires a working roof gutter system. Rainfall in Pacoima is limited to a few rainy days a year--would require multiple rain barrels to capture a lasting supply of water.

# Downspout Planters



## Description

A planter is a landscaped container located above ground or in the ground. Downspout planters are placed at the bottom of downspouts so that they can receive stormwater runoff from the roof. Rainwater is funneled through the downspout from the roof to a storage area within the planter. The stored water is used to irrigate plants or released back into the ground to re-enter the groundwater system. This reduces the amount of stormwater that runs off a property and washes pollutants into storm drains.

The recommended size of the planter depends on the size of the property and amount of impervious surfaces (surfaces that do not allow water to pass through, such as concrete, asphalt, and roofing material). Generally, it should be 4% of the impervious area of the property. For example, if your property has 100 square feet of concrete patio and driveway, your planter should be 4 square feet. A planter measuring 2x2x4 (L/W/H) has a storage volume of 78 gallons of water. Planters are usually constructed from metal or concrete and measure approximately four feet long. They can be placed anywhere on a property as long as it is connected to a downspout. Above Ground planters can be moved as desired, making them accessible for renters and owners alike.



## Scalability

Planters can be built to any size that fits the needs of a property owner.



## Maintenance

Downspout planters require a downspout and working roof gutter system. Planters must undergo annual plant and soil maintenance, similar to typical landscape planted in the ground.



## How to Acquire *Click below!*

- DIY alternatives to store-bought materials
- LADWP and SoCalGas have partnered with California's Residential Energy Efficiency Loan program. This provides 100% financing for home upgrade projects, meaning no upfront cash is required



## Upfront Costs

The costs varies based on type, size, and plant selection. The planter itself costs about \$8-15 per square foot. For residents who do not have an existing roof gutter system, downspouts typically cost \$160 each.



## Potential Challenges

Requires a working roof gutter system. Should be placed away from retaining wall structures.

# Cool Roofs



## Description

Traditional dark roofing materials absorb heat from the sun and can make a building and the surrounding air hotter. Cool roofing materials have higher solar reflectance (they are lighter in color), which can decrease net radiation and keep the roof surface up to 60 degrees Fahrenheit cooler than a traditional dark roof. Mitigating heat at the roof level decreases the downward heat flux into a building and can reduce the need to use air-conditioning systems. This saves consumers money on their cooling bills and reduces the outdoor heat that is emitted by air-conditioning systems. Cool roofing materials include reflective paint, reflective sheet covering, and reflective tiles or shingles. The cool roof paint coating can actually extend the life of an existing roof while delivering energy cost savings to the consumer.

Generally, you can expect a cool roof to cost 20% more than a traditional roof. The City of Los Angeles passed the Cool Roof Ordinance in 2015, which requires all new and refurbished buildings to have a cool roof. The rule does not apply to roof repairs or roof replacements where less than 50% of the roof is being treated.



## Scalability

Not scalable.



## Upfront Costs

The cost of a cool roof varies by material. It can cost as little as 75 cents per square foot for reflective coating and range up to \$3 per square foot for singly-ply cool roof membranes. Generally, you can expect a cool roof to cost 20% more than a traditional roof.



## Potential Challenges

Requires a roof in good condition.



## Maintenance

Water for pressure washing and specialized detergents designed for single-ply roof systems: this should be done annually. Roof coatings should be reapplied every 15 years.



## How to Acquire *Click below!*

- Get a rebate from LADWP up to 30 cents per square foot of roofing material
- Apply for financing through the LADWP and SoCalGas partnership with California's Residential Energy Efficiency Loan program. This provides 100% financing for home upgrade projects
- Visit the Cool Roofs Rating Council's website for resources that will help guide you through the process

# Cool Pavement



## Description

Man-made pavement (such as concrete and asphalt) has thermal and absorptive properties that cause it to be generally warmer than naturally vegetated areas. Cool pavement alternatives to concrete and asphalt are lighter in color and reflect more solar energy. This makes the surfaces cooler and promotes thermal comfort in a non-vegetated area. Cool pavement materials can replace conventional materials on sidewalks, driveways, patios, and even roads.



## Scalability

Cool pavement is scalable from small applications such as backyard walkways to larger applications such as driveways and sidewalks.



## Upfront Costs

The cost varies widely based on material. Residents looking for a budget-friendly option can opt for high-reflectance paint, which costs 10 cents per square foot. Other materials such as permeable and high reflectance asphalt can cost up to \$10 per square foot.



## Maintenance

Negligible.



## How to Acquire *Click below!*

- Apply for financing through the LADWP and SoCalGas partnership with California's Residential Energy Efficiency Loan program. This provides 100% financing for home upgrade projects



# Permeable Pavement



## Description

Conventional pavement materials including concrete and rock do not allow water to seep into the ground, preventing groundwater recharge and increasing the potential for flooding during rain events. Permeable pavement contains pores or spaces between joints that allow water to flow through into the ground. These pavement materials that help reestablish a more natural hydrologic balance by minimizing surface runoff, filtering out water pollutants, and catching precipitation for underground storage.

Permeable pavement at the household level is most commonly used on sidewalks, patios, and driveways. Materials include porous asphalt and concrete, open joint pavers, interlocking concrete blocks, and pavers with gravel or vegetation in the voids.



## Scalability

Permeable pavement can be implemented in phases. For example, a resident can replace their concrete driveway with porous concrete one year, and replace their backyard patio with permeable pavers the next year.



## Upfront Costs

Typically 10-20 percent more expensive than traditional pavement, but depends on material:

Conventional asphalt: 10 cents to \$1.5 per square foot.

Conventional concrete: 30 cents to \$4.50 per square foot.

Porous asphalt: \$2-2.50 per square foot.

Pervious concrete: \$5-6.25 per square foot

Permeable pavers \$5-10 per square foot.



## Maintenance

Energy or water for vacuuming or pressure washing to clear out debris from porous surfaces. Resealing costs of about 10 cents per square foot, if necessary to seal chips.



## How to Acquire [Click below!](#)

- Get a rebate from LADWP up to \$3 per square foot of landscaped area
- Apply for financing through the LADWP and SoCalGas partnership with California's Residential Energy Efficiency Loan program. This provides 100% financing for home upgrade projects
- Apply for financing through Property Assessed Clean Energy financing (PACE)

# Heat Weatherization



## Description

Home weatherization is the practice of modifying a building to promote energy efficiency. Modifications such as insulating walls and roofs and sealing air leaks around windows and doors can protect a building from the elements, especially the sun. This can save residents money on their cooling bills and promote thermal comfort. Some practices are permanent and others are removable, making weatherization a solution for both renters and homeowners.



## Scalability

Weatherization practices can be installed room-by-room within a house or apartment.



## Upfront Costs

Weatherstripping around doors and windows ranges in a typical house can cost under \$50. However, larger weatherization projects can cost up to \$5,000.



## How to Acquire [Click below!](#)

- Apply for funding from the US Department of Energy's Weatherization Assistance Program. This program assists low-income residents with weatherization upgrades
- Apply for the Low-Income Home Energy Assistance Program (LIHEAP) federal benefit program. This provides eligible households with home energy cost assistance
- Apply for financing through the LADWP and SoCalGas partnership with California's Residential Energy Efficiency Loan program. This provides 100% financing for home upgrade projects

UNIVERSITY OF CALIFORNIA  
Los Angeles

Planning Processes, Challenges, and Outcomes in Airport Closures and Redevelopment

A white paper submitted in partial satisfaction of the requirements  
for the degree Master of Urban and Regional Planning

by

Samikchhya Bhusal

2021

# **Planning Processes, Challenges, and Outcomes in Airport Closures and Redevelopment**

## **Introduction**

Whiteman airport, a municipal airport in Pacoima, primarily serves wealthy non-residents. This airport poses continued risks of aircraft crashes, loud noise, and air pollution. Community residents and environmental justice organizations, including Pacoima Beautiful, have long called for the closure of Whiteman airport. As early as the 1970s, the community in Pacoima demanded the airport be shut down (Hansen, 1974). Given the ongoing call for the closure of Whiteman airport, a recent city council motion has proposed the shutdown of the airport.

Closing the airport and repurposing the area for community benefit is not an easy task; the process will require careful planning and sustained community engagement. Some cities have converted airports into housing, parks, or other land use; Denver's Stapleton airport and Austin's Robert Mueller airport are some examples. Using case studies from Denver and Austin, I identify (a) conditions that led to airport closures, (b) timeline of closure and redevelopment, (c) outcomes of redevelopment projects, (d) beneficiaries of the airport redevelopment, and (e) funding and site remediation. I use academic articles, redevelopment plans, and media reports like the New York Times to conduct these case studies. Findings from this case study provide a broad overview of planning processes and challenges of airport closures and redevelopment. These inquiries are important for two reasons: First, challenges identified in these case studies can serve as lessons for organizing and policymaking about Whiteman airport shutdown. Second, these case studies may help expand our imagining of the potential for Whiteman airport.

## **Case Studies Analysis**

### **About**

Stapleton airport was constructed in the early 1920s (Valentine, 2006). By the 1940s, Stapleton served as Denver's International Airport and the fifth busiest airport in the US (Lupher, 2020). From the 1920s to the 1980s, this airport grew from 345 acres to 4,700 acres (Palmberg, 2006). Despite the airport expansion, Stapleton could not meet the demands of an international airport. Thus, in the 1980s, the city of Denver proposed a plan for the construction of a new Denver International Airport and the subsequent closure of Stapleton (Valentine, 2006).

Mueller airport, the first airport in the City of Austin, was constructed in the 1930s. The airport was closed in 1999.

### **Why were airports closed?**

Capacity constraint was the primary reason for the closure of Stapleton and Mueller airports. As air traffic at Stapleton airport increased in the 1950s, it became apparent that the airport lacked enough spacing between runways (Palmberg, 2006). Describing Stapleton airport, a New York Times article (1984) wrote the following: "Today it [Stapleton] is just stuck - stuck with not enough room to expand, stuck with neighbors complaining of noise and stuck with the pressures of being the seventh busiest airport in the world" (para 1). Mueller airport was also closed because of capacity constraints; the airport was too small to manage Austin's high air traffic (Greenfield, 2007).

The availability of an alternative airport site also led to the closures of Stapleton and Mueller airports (Negroni, 2012). In Denver, the city had plans to build a new airport—now known as the Denver International Airport (DIA)—in Adams County. Similarly, in Austin, the city planned to redirect flights from Mueller airport to Austin Bergstrom International Airport (Greenfield, 2007).

While not the primary reason, community opposition also set the pretext to close Stapleton and Mueller airports (Valentine, 2006; Rutledge et al., 2003). In both cases, impacted residents, mostly communities of color, complained about airport noise and pollution. Residents of communities surrounding the Stapleton airport were predominantly communities of color (Valentine, 2006). Similarly, the neighborhoods surrounding the Mueller airport were mostly low-income Black communities (Rutledge et al., 2003).

Examples of Stapleton and Mueller airport provide a key lesson for future airport closure in Pacoima. In contrast to my hypothesis, environmental justice concerns from communities of color did not drive airport closures in Denver and Austin. Instead, the city's concern for airport capacity and the availability of alternative airport sites led to airport closures. Thus, community advocates may need to identify alternative airport sites to redirect flights from Whiteman airport.

### **How were airports closed and redeveloped?**

Airport closure in Denver began with a referendum. In 1989, residents of Adam County voted on whether they would allow the city to acquire farmland to build a new international airport (Yake, 2003).

The closure of Robert Mueller airport began with a feasibility study. In 1976, the city of Austin commissioned a study to assess feasibility for another airport (Podbielski, 2019). These initial feasibility studies then led to conversations for airport closure and relocation.

Environmental justice activists in Austin critiqued the relocation of Mueller airport. A leader of PODER (People Organized in Defense of Earth and her Resources) is quoted thus: “it [the relocation] just moved it [the environmental justice problem from the airport] from a poor African-American community to a poor Hispanic community.” (p.98)

In general, airport closures and redevelopment took a few decades in both Denver and Austin. In Denver, following the referendum, Stapleton Tomorrow Committee was established to plan the future of redevelopment (Valentine, 2006). Then, Stapleton Development Foundation was established to support the redevelopment process. By 1991, citizen groups had formulated a concept plan for redevelopment, and this plan was incorporated into the city’s General Plan. Few other groups, including Stapleton Development Corporation and Citizens Advisory Board, were established to oversee the redevelopment process. A zoning change for the site was approved in 1997, and the first residents for the redeveloped area moved into the site in 2004.

The timeline for Austin’s airport closure and redevelopment also expands a few decades. Following the feasibility study in 1976, the airport was officially closed in 1999 (Podbielski, 2019). In 2000, the city adopted the municipal airport master plan to guide redevelopment initiatives. In 2007, first homes were made available for residents in the redeveloped area.

The timelines for Stapleton and Mueller airports provide lessons for the potential closure of Whiteman airport in Pacoima. Approval of zoning change, creation of community-based groups to plan redevelopment, preparation of a community-driven redevelopment master plan,



and selection of a developer are some examples of next steps. The concept plan in Denver was created before the selection of the developer, and this might be an option for Pacoima's stakeholders to consider. Based on the literature review, the exact time required to complete site remediation remains unclear.

### **What was built after airport closures?**

Both Stapleton and Mueller airports were redeveloped into mixed-use development projects. In Denver, the plan for Stapleton redevelopment consists of retail centers, affordable senior housing, high school, and model homes (Valentine, 2006). The goal for the Stapleton redevelopment was to support 30,000 new jobs and build homes for 25,000 residents (Byrd, 1995). In Stapleton, 10% of the for-sale housing and 20% of rental housing were allocated as affordable housing.

The redevelopment plan for Mueller airport made similar promises. Planned as an eco-friendly new urbanist community, the master plan for the redevelopment of Mueller airport proposed 5,700 residential units, 140 acres of park space, town center, on-site jobs, and commercial spaces (Rigdon, 2013). More specifically, the city of Austin required the developer of the Mueller project to allocate 25% of the homes to be affordable at an income 80% of the Median Family Income (MFI). In sum, both redevelopment master plans in Denver and Austin promised mixed-use development, increased housing, and additional jobs.

What remains unclear is the extent to which outcomes of Stapleton and Mueller redevelopment align with the community needs of residents near the airport. While academic literature on these redevelopment projects label both Stapleton and Mueller initiatives as

‘community-driven’, and ‘bottom-up planning’, further research will be necessary to examine how community members impacted by the airport were included(or not) in the planning process (Valentine, 2006). Additionally, do airport redevelopment projects serve the needs of residents that were most affected by the airport at the time of its operation? As Pacoima residents continue to plan for airport shutdown and redevelopment, the question of what gets built is important.

### **Who was the redevelopment for?**

Data on neighborhood demographics show that communities most impacted by the airport did not benefit from airport redevelopment projects. For example, while neighborhoods surrounding the airport were mostly communities of color, residents of Stapleton redevelopment are much whiter and wealthier compared to the city average. Residents in Mueller redevelopment area are also whiter and wealthier than the city-average for Austin (Cabrera, 2019). Communities of color who were most affected by the airport are not the beneficiaries of Mueller redevelopment. According to the American Community Survey (ACS) 2017 report, the demographic breakdown for communities of color in Mueller redevelopment is as follows: 22% Latinx, 9% Black, 9% Asian. The demographics for the city of Austin is 34% Latinx, 7% Black, and 8% Asian.

The demographic composition of Mueller and Stapleton redevelopment begs the question: Why didn’t communities of color who were most impacted by the airport receive tangible benefits from these redevelopment projects? As Pacoima continues its plans for the closure of Whiteman airport and subsequent redevelopment, centering the needs of low-income residents in future redevelopment will be crucial.

## **Who funds the project, and what about site remediation?**

There is not a clear answer on who funds airport closures and redevelopment. In Denver, the redevelopment project was financed through Tax Increment Financing (TIF) (Valentine, 2006). Funding from TIF supported the site cleanup and expedited the redevelopment process. In Austin, both public and private sources financed the Mueller redevelopment project (Cabrera, 2019). In both examples, scholars identified financing as one of the key challenges in site remediation and redevelopment.

While the need for airport site remediation is well-known, existing literature does not offer sufficient insights on processes, timeline, and stakeholders for site remediation. Steps involved in the environmental cleanup are difficult to trace. Thus, future research could benefit from mapping funding sources, regulations, and stakeholders for site remediation in Pacoima.

## **Lessons Learned and Limitations**

### **Lessons Learned**

Case studies of Denver and Austin's airport closure and redevelopment tell us more about city-initiated airport closures and less about community-driven processes. While community opposition set the pretext for closing of Stapleton airport, the main reason for closures was increased air traffic and the availability of an alternative site. Unlike my hypothesis, arguments from environmental justice groups did not drive airport shutdown in these examples. Furthermore, in Austin, the environmental justice problem was simply transferred from a low-income Black community to a low-income Latinx community. In general, these case studies demonstrate the risks of market-based redevelopment processes and the importance of strong community engagement at all stages of planning processes in airport redevelopment.

Communities most affected by the airport did not benefit from Stapleton and Mueller redevelopment projects. Data on demographics of redevelopment sites show that residents of Stapleton and Mueller redevelopment are mostly middle-upper income residents. Furthermore, while a small percentage of affordable housing was secured, these projects exemplify market-based approaches to development. As scholars committed to community control of land and community autonomy in redevelopment, case studies from Denver and Austin may not be the best precedents to learn about community self-determination in airport shutdown and redevelopment.

### **Limitations**

The use of two case studies provides limited information. Within these case studies, most of my sources were popular media reports and academic literature. Thus, these materials alone may not appropriately capture community voices concerning redevelopment and airport closures.

The scale and context of these case studies differ from that of Whiteman airport. Whiteman airport is much smaller in size compared to Stapleton and Mueller airport. In addition, both these case studies are located outside of Los Angeles, which may make findings of this study less relevant to Pacoima.

### **Areas for Future Research**

As conversations for the shutdown of Whiteman airport unfolds, there are few research questions that can benefit from further research. What negotiations were made between the developer and the city in both Stapleton and Mueller redevelopment projects? How do community organizers of Denver and Austin view the airport shutdown and redevelopment projects? Who are the stakeholders and powerful actors in Whiteman airport closures? What

strategies can enhance community control in airport closures and potential redevelopment in  
Pacoima?

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UNIVERSITY OF CALIFORNIA

Los Angeles

Micro Dwelling

Possibilities to Resist

Household Displacement in

Pacoima

A white paper submitted in partial satisfaction  
of the requirements for the degree Master of Urban and Regional Planning

by

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## ABSTRACT

Micro Dwelling  
Possibilities to Resist  
Household Displacement in  
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In Pacoima, a Los Angeles neighborhood in the East San Fernando Valley, climate resiliency and incoming green infrastructure to mitigate pollution present a risk of household displacement. Pacoima Beautiful, an environmental justice organization, along with partnering organizations, developed a Displacement Avoidance Plan (DAP) comprising the legalization of present Accessory Dwelling Units (ADUs), and the production of affordable housing. Whether ADUs are renovated or built as affordable housing, strategies to employ thorough use of space are key. A growing small-living adaptive design movement offers solutions for practical, comfortable micro-dwellings, delivering safer alternatives to dangerous overcrowding and lack of privacy. This paper identifies small-living design strategies within the fast-growing trend to support Pacoima Beautiful's ADUs DAP; I delve into the literature and compare three

typologies of Micro Dwellings. In exploring typologies and their design, I note approaches to perceptibly amplify micro spaces feasible for consideration into existing and future ADUs.

## **Introduction**

Responding to urgent community housing needs is significantly more challenging amidst a housing crisis, a recession, and a pandemic. In Pacoima, a Los Angeles neighborhood in the East San Fernando Valley, a group of organizations formed the Green Together Collaborative (GTC) and received a \$23 million Transformative Climate Communities (TCC) grant to promote climate resiliency and develop green infrastructure to mitigate the existing effects of high-level greenhouse gases. This presents a risk of displacing existing households in Pacoima and surrounding areas. In order to mitigate risk, the TCC grant required GTC to develop a Displacement Avoidance Plan (DAP): Accessory Dwelling Units (ADUs) and create a Community Land Trust (CLT). Pacoima Beautiful, an environmental justice organization in Pacoima, will implement the DAP (Community Partners, 2018a).

Pacoima is a neighborhood with many existing ADUs, and it is common for more than one household to live in a single-family zoned residence within the primary structure, or in varying structural extensions on the same parcel. ADUs comprise ‘granny flats,’ backyard guest homes, and garages converted into homes (Community Partners, 2018b). They “are independent of the primary dwelling unit” since they come fully equipped with a kitchen and bathroom. They can also be part of the same structure or an attached extension as well as unattached, separate from the main dwelling (Geffner, 2018). Community Land Trusts are organizations that keep housing affordable by removing it from the market. They identify buildings, buy properties, and build housing to control its affordability and accessibility (Hernandez, McNeil, & Tong, 2020). The housing crisis, and consequential displacement therefrom, drives households to sacrifice safe living standards to over-crowdedness, dangerous living arrangements, and lack of privacy. The results are detrimental living conditions. Residents are economically pressed to resort to unsafe living conditions (Zuk et al., 2015). Given the Pacoima’s reliance on ADUs, one policy under the

DAP includes renovating existing ADUs as well as producing affordable housing (Community Partners, 2018b).

A worsening global housing crisis has preceded a plethora of approaches and ideas to mitigate the problem. But there has been a particular fixation on micro-dwellings and ‘smaller living’ since their resurgence because of their space-saving functionality (Community Partners, 2018a). When there is a lack of space to build additional homes during a housing shortage, or when conventional housing is financially out of reach, micro dwellings offer promising relief because their size allows for a higher quantity of housing compared to present conventionally-sized housing. Whether ADUs are renovated or built from the ground up, the interior layout and design of the space will be an inevitable component of all projects and should be assessed for improvements in sustainability, livability, and extensive use of space. Likewise, ADUs that are yet to be constructed can benefit from strategies that employ thorough use of structural footprints, all while keeping in mind Pacoima’s dynamic household needs and the importance of a small carbon footprint. Ideally, design guidelines will be workable to integrate into existing ADUs in Pacoima, and future structural models of micro dwelling will employ low building footprints in exchange for more housing.

This paper identifies relevant small-living design strategies within the emerging trend and applicable to ADUs as part of the residential DAP to strengthen Pacoima’s resistance against residential displacement. In order to determine relevant small-living solutions for the DAP, I delve into the existing literature on the subject and compare three typologies of Micro Dwellings: Micro-units, micro-homes, and micro-subdivisions. In exploring typologies and their design, I note approaches to perceptibly amplify micro spaces feasible for consideration into existing and future ADUs.

## Literature Review

Literature on micro dwellings is scarce, yet we can define them as “living spaces that don’t conform to current minimum space standards” (Harris & Nowicki, 2020). These may include “self-contained living spaces, purpose-built co-living developments, and converted and subdivided shared living spaces” (Harris & Nowicki, 2020). The concept of living small is not new; the form and domestic purpose has existed in cities for centuries and continues to exist today. The expression ‘micro-dwelling’ is new, however, and it is but a single term within endless terminology used to describe and categorize ‘small living’ (Harris & Nowicki, 2020).

In the early 1900s, micro-dwellings were common in the United States as “carriage homes..., alley apartments with separate entries on the rear of urban apartments, [functioning] similarly to modern ADUs” (Geffner, 2018). “Suburbanization across America in the 1950s and 1960s, [and] a desire for low-density living led most jurisdictions to ban ADUs” (Geffner, 2018). Some American research traces the resurfacing of micro-dwellings to the “Back-to-the-Earth” movement of the 1970s, while others trace it back to Henry Thoreau’s Walden and “simple deliberate living”. (Brown, 2016) The early 1900s saw yet another resurgence in the US through Single Room Occupancy (SRO) hotels; these micro-dwellings-precedents housed workers in urban centers who wanted to live closer to their jobs (Geffner, 2018).

In Japan, the concept of ‘small-living’ plays a role in the design of single-family homes and is a common Japanese-household typology. Limited space and the consequential high cost of housing that proceeds have sped up creative solutions and adaptations to smaller living in Japan (Ford & Gomez-Lanier, 2017). In contrast, small living is not common for single-family dwellings in the United States. In the US, it has been a response to homelessness, high rents in urban centers, and changing household demographics from single-family to single-occupancy housing. Micro dwellings have also been a response to a decluttering minimalist lifestyle shift that renounces city

life (Ford & Gomez-Lanier, 2017). These responses have each manifested into their own unique typologies. At the moment, there are few signs of ‘single-family’ multi-room micro-dwellings in the US, though the demand is likely to give way to more affordable ‘single-family’ dwellings.

### Three Micro-dwelling typologies

I divide micro-dwellings in this paper into three major categories: micro-units, micro-homes, and micro-subdivisions. The differences between the three typologies are location, structure (if they are stand-alone structures or form part of a larger building with additional dwellings), and features (whether they include a private kitchen and bathroom in the dwelling or shared amenities at the expense of smaller rooms or sleeping quarters, reducing costs). A characteristic that all three typologies share is their unconventionally small size. Thus, regardless of typologies, all micro dwellings depend on small living design strategies that can comfortably accommodate its users to be considered a workable and legitimate source of housing.

The scale of micro-dwellings can vary drastically because of its dependence on local jurisdiction and good design. For example, a well-designed micro dwelling can be more comfortable than a larger micro dwelling that does not use space well. Micro dwellings are relatively rare in housing development— there is minimal or nonexistent regulation (Harris & Nowicki, 2020). Where regulations for micro-dwellings exist, they are inconsistent. In Texas, a 500 square-foot home may be considered a micro-dwelling (Urban Land Institute, 2014). Yet New York’s Carmel Place, “a prototype for micro-housing,” has units that range from 260 to 360 square feet (Harris & Nowicki, 2020). Discounting Japan’s infamous inhumanely-small houses, micro-subdivision developments in Paris and Barcelona have sleeping quarters that are a shocking 25 square-feet (Harris & Nowicki, 2020). Areas with existing and regulated micro-dwellings have been responsible for creating local regulations for this new housing typology. Pending

standardized policy, jurisdictions subject to incoming micro-dwelling development will probably mirror existing regulations or risk establishing entirely new policy.

### Micro Units

Though not yet a standardized definition, the Urban Land Institute defines a micro unit as a “small studio apartment, typically less than 350 square feet, with a fully functioning and accessibility compliant kitchen and bathroom” (Urban Land Institute, 2014). Micro units tend to be “roughly... 20 percent to 30 percent smaller than conventional studios in a given market” and efficiently designed to appear larger than their actual size (Urban Land Institute, 2014). In this paper, I categorize micro units as micro dwellings that exist within a larger complex containing other units alike or different in sizes and house one to two people.

Seattle, Washington, was one of the first places in the United States that began adapting smaller dwellings into new urban development. High rents in Seattle were not meeting the demand for housing below market rates, and developers saw the opportunity for profit by incorporating micro units into projects. Building more units at costs comparable to building standard-size units increased the number of rentals and allowed developers to generate market-rate profits (Carter, 2015). Micro units are mainly present in city centers because their size offers a more economical option. Many young adults prefer the walkability and entertainment of urban centers more than living space. Even if they rarely spend time at home, they benefit from the privacy of having their own space as opposed to sharing a conventionally sized unit with roommates. The reoccurring purpose of micro-units is “a way people can remain in central locations despite rising house prices” (Harris & Nowicki, 2020). However, the micro-unit market has expanded to cater to affluent tenants able to “pay a premium for [extravagant] accommodations branded as micro-living”. These micro-units provide additional amenities such: spas, personal trainers, happy hours,



room service, housekeeping, and a sense of community among homogenous young professionals. Here, the cost of micro units drastically surpasses the price of equivalent sized housing (Harris & Nowicki, 2020).

### Micro Homes

Micro-homes are micro dwellings that exist within the suburban "rural housing typology" and are not present in urban centers (Harris & Nowicki, 2020). A more specific form of identifying micro homes is as "individually standing structures, ranging in size from 80 to 200 square feet" (Brown, 2016). One of the most popular types of micro-homes is the infamous 'tiny houses' or 'tiny homes.' Tiny homes have become the iconic vessel to escape the city, decimate personal possessions, and live minimally with the least number of belongings. Along with living simpler and reducing material things, there is an emphasis on a reduction in the environmental footprint in this type of housing (Harris & Nowicki, 2020). Though they do not conform to the 80 to 200 square feet of living space, an ADU that is smaller than standard ADUs or has common living spaces can also be included in the micro house typology. A tiny home in someone's backyard is both a micro home and an ADU. Though micro units and micro homes do not share locality or parallel motivational usage, design strategies that extensively use micro space are pertinent to both typologies.

### Micro Subdivisions

Micro subdivisions refer to micro dwellings that exist within subdivided space among other micro dwellings. What sets micro subdivisions apart from micro units and micro homes is that there are intentionally-shared amenities and a space amongst residents to nurture a sense of community, or essential amenities such as bathrooms and kitchens are shared because private

rooms do not offer these amenities, which also allows for cheaper housing prices. Micro villages and community living (co-living) are examples of micro subdivisions and, though their location does not affect their typology, micro villages and tiny villages are mainly in non-urban settings. They have made their way into housing for aging populations due to the benefits and safety of communal living arrangements. Micro subdivisions serve as necessary living space while also facilitating a sense of community. “The micro village movement stems from the tent city movement and efforts to supply unsheltered people with housing” (Brown, n.d). Within “co-living models, [a reduction in] private living space... [places] greater emphasis on communal areas” (Harris & Nowicki, 2020). Beyond a sense of community, micro subdivisions can also focus on providing an economical option: in this case, individual rooms lack private amenities, are significantly smaller, and the space serves mainly as sleeping quarters (Geffner, 2018).

### **Small-Living Design Strategies**

All micro dwellings depend on small-living design strategies that can comfortably accommodate users to be considered feasible, legitimate sources of housing. Design strategies range anywhere from south-facing large windows and transparent furniture, to simply incorporating smaller-sized appliances that allow for cleared visual spaces (Ford & Gomez-Lanier, 2017). However, outdoor placement and arrangement of dwellings are also important small-living peripheral design strategies.

Whether on an individual parcel or next to one another, designing dwellings with a “closed side” and an “open side” is key. A closed side comprises design strategies for privacy that prevent indoor visibility from the outside but allow outdoor visibility from the inside. Higher windows and skylights are examples of design strategies that provide privacy while still allowing light to penetrate indoors. Contrastingly, designing the open side of a dwelling incorporates large windows

and doors that face south to increase natural lighting and create a feeling of openness within frequently used spaces, such as kitchens. Furthermore, when considering outdoor space for dwellings, it should be placed adjacent to the open side to serve as a visual and physical extension of the open side of the dwelling. Accordingly, “the open side of a dwelling should face the closed side of adjacent dwellings” (Penny, 2020). This arrangement and the collaborative design among adjacent dwellings create a “nesting” area, offering visual privacy from other dwellings. Residents can more comfortably utilize all available indoor and outdoor spaces, thus significantly altering the perception of openness within a micro-dwelling. (ibid).

### *Spatial Impressions*

Another small-living design strategy is increasing perceptual spaciousness through the manipulation of physical phenomena, internal configuration, lighting, and external views. (Fisher-Gewirtzman, 2017) The way we experience our surroundings is highly dependent on the architectural depth— “the number of spaces one must pass through to get from one point in a structure [to any other]”— of any given area. Everyone has a “perceived density” of space; through “interior configuration” or the arrangements of objects such as furniture within a space, it is possible to alter feelings of spaciousness in any setting. In a micro-unit virtual-reality controlled research study, participants were shown the same size and shape room multiple times, but with customary furniture— sofa, bed, desk, dining table— arranged differently, windows enlarged, multiplied, or removed. The constant variable that influenced unit density perception was the location of the sofa and bed, which tend to be the largest objects in dwellings. Window location followed, and ultimately, the main “focus [was] on the influential space variables,” or objects that would otherwise control one’s movement through the space. Consider a bed in front of a window; the bed affects the flow of the space in front of the window because it is in the way, thus

interrupting the flow of the given space, for better or worse. Large objects require strategic placement to give way to spaciousness in a micro dwelling and allow openness. Incorporating outside views further adds to this feeling of openness despite a small living setting. Therefore, design concepts, such as having a tall window facing the entrance of an apartment allowing for a clear sightline to the sky, should be included when designing micro-apartments. High ceilings and the conglomeration and stacking of the largest objects allow a “use of minimum height space, [thus] enabling the rest of the space to feel taller” (Fisher-Gewirtzman, 2017). Since beds are one of the largest space-takers, placing a bed above another space-taker, such as the bathroom, limits crowded space to the bed stacked atop the bathroom. This allows the remaining space to be open and ameliorates the perceived density of an otherwise crowded space.

### *Design Solutions in Japanese Architecture*

Japanese architecture has long-prevailing characteristics that preserve a valuable relationship to nature while leaving room for flexibility (Yashar, 2015). Though adapted to fit today’s “micro modern” homes, material selection and the way light is incorporated into the space stay otherwise true to traditional Japanese architecture. Spatial organization is key to the flexibility and functionality of Japanese homes, for this allows an impermanent state, an everchanging blank slate. “Interior walls slide open to double the size of a room. At night, futons are pulled from sliding cupboards, built flush with the wall,” ready to be seamlessly put away again to make way for the following activity. The modularity of a home is exemplified in the multitude of uses for a single room. “Each room can be used as a living room, dining room, bedroom, the required furniture is moveable and portable” (ibid).

Denso Sugiura is a Japanese architect who has designed more than 130 micro homes and declares that an open space concept will deliver the most small-living benefits, thus providing a

legitimate home. “To design a micro-house, multipurpose spaces are key.” For example, instead of designing a house with specific rooms, every space is designed minimally and with no purpose to hold back its potential for adaptation. The only rooms designed with specific purposes are the bathroom and the kitchen.

Another highlighted small-living design strategy in Japanese design is prioritizing a seamless flow between indoor space and outdoor space. Transparency is essential in seamlessly regulating indoor and outdoor space. “The use of transparent materials to divide space... ensures a path for light, air, and sight.” In Japanese homes, this transparency exists as inner courtyards that let “air... escape and complete [an] energy flow loop”. This gives way to a “passive flow of energy” and makes it possible to modify and control natural lighting along space. When it comes to designing for privacy from the outdoors, “wire mesh panels and woven wire cloth,” replace unfrosted transparency. Designing a micro modern house in a limited area requires simplicity, multifunctionality, and transparency. Like the plasticity of home design that has legitimized small-living, traditional Japanese architecture has evolved and adapted to modernity, allowing for a new small-living interpretation of conventional housing.

### **Micro Dwelling Possibilities for Pacoima**

Further housing injustices for Pacoima residents call for tailored, dependable solutions. Beyond livability, it is important to consider the cost effectiveness and carbon footprint of possible future housing. The “increased affordability, sustainability, and flexibility” of micro dwellings offer a promising solution (Geffner, 2018). Given the diverse typologies of micro dwellings, their potential for adaptation to multiple needs is invaluable. One such function is their flexibility to be both temporary and permanent housing. Housed and unhoused populations can benefit from transitional affordable housing in the form of micro dwellings, offering people the option to save

money for future permanent housing or invest rent expenses into other desires (Ford & Gomez-Lanier, 2017). Another advantage is their exceptional efficiency. Unlike typical American homes that often translate to surplus expenses, the limited space in a micro dwelling encourages intentional, thoughtful actions to maintain the dwelling livable; residents must ensure efficient and thorough use of all space significantly reducing most housing-related expenses (Kilman, 2016). Beyond the affordability of maintaining a micro dwelling, “design can be, to an extent, adaptable to the owner’s preferences” (ibid). Occupants have the flexibility to change or adapt new compartments into their dwellings as well remove or add appliances as their needs change (ibid). This level of control has the potential to empower households through agency over their living spaces.

Micro dwellings are sustainable housing options because of their unconventionally limited space. “Small housing is inherently energy efficient to build, as it requires less upfront resources” for construction (Geffner, 2018). Beyond their overall small structural design, strategies ranging anywhere from window placement to “minimize the amount of heat trapped from sunlight”, add to the overall sustainability of micro dwellings (Ford & Gomez-Lanier, 2017). A reduction in living space offers savings on building material and overall production costs, and once the dwelling is complete and occupied, energy and remaining costs are a fraction of standard-sized homes (Geffner, 2018).

Lastly, it is important to consider the cost-effectiveness of large-scale development in future production of affordable housing. Unlike ADU development, “micro-apartment projects often consist of dozens” of units (Geffner, 2018). A single large-scale development project of micro dwellings for single households and single-family households offers capacity to house numerous households. On the other hand, there is drastic lower capacity to the number of households that can accommodate to an existing ADU, even with small-living design strategies. Similarly, the building

space of future ADUs significantly limits capacity when compared to a larger-scale development. Large-scale micro dwelling development also offer “potential as residential infill development” where space is available (Withers, 2012). A future CLT able to access such space should consider a large-scale development of micro dwellings (ibid).

The most prominent small space design strategies throughout the different micro dwelling typologies center around lighting and access to the outdoors, through strategic placement of windows and doors, transparency, and as well as through flexibility for adaptability. Additionally, object placement also makes a huge difference when trying to control the perceptual density of a small area. Though a micro dwelling is not yet a part of conventional housing in the US, its incorporation in Japan can teach us many strategies to live more sustainably, make the most out of space, and ultimately make sure that everyone has a homes.

## **Conclusion**

As we begin to see more micro dwellings providing shelter to communities, their role in the housing category, and even their definition, might change. Micro-Dwellings are presenting a necessary possibility to keep urban centers accessible and long-time communities in their homes, whether market rates change due to investments or gentrification. The concept of living in smaller spaces and making use of every inch of space unites all micro dwelling typologies. What will ultimately define the success of incorporating small living design strategies will be providing enough comfort to convince residents to willingly downsize.

For Pacoima Beautiful’s DAP, ADUs that require extensive renovation, can be remodeled as micro-units or micro-subdivisions (building-subdivisions); future ADUs can be built and designed for micro-dwellings. CLTs may also want to consider micro-dwellings for existing and future buildings and parcels. Regardless of the type of housing that is renovated, repurposed, flipped, or

built for our houseless community, it is crucial to build adaptable, green, self-sustainable, and incremental housing which can suit the varying and everchanging needs, qualities, and identities of everyone. It's important to keep in mind that a family of four cannot be expected to live well in a 260 to 360 square feet unit. Additionally, micro-living rent or cost should reflect the space downgrade from a 'typical' dwelling in the same area; it should not be a more expensive alternative. Though not studied in this paper, it is important to reflect on the possibility and existence of micro dwellings that are counterproductive and have gone too far, encouraging inhumane small-living conditions.

### **Future Research Possibilities**

Future research considerations should include surveys of resident at risk of displacement in order to determine household size and thus the necessary size and type of housing, i.e., how many single-family units. This is so that the appropriate amount of single-family housing is built, and micro-living doesn't solely benefit single millennials. Additionally, it is crucial to take into consideration the willingness of households to downsize. A more economical housing option might not meet everyone's needs or make up for lost space.

Estimating the local cost of building micro dwellings, as well as the local zoning and dwelling size limits should follow prioritizing the needs of the community as well. Once this has been determined, a timeline of each project will give households the insight to best arrange their current living situation. The final step is to locate possible sites for the production of affordable housing. Determining the possibility for new infill development, and obtaining existing structures, renovating or adapting them, will significantly reduce project costs.



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Equitable Access to Climate Resiliency Initiatives for the Unhoused Community in Pacoima

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## Introduction

*Honoring the dignity of all people is both a right and a responsibility.*  
– Hospitality House SF

The legacy of racist planning and zoning practices has resulted in the disproportionate burden of the effects of climate change and higher pollution exposure that Pacoima residents carry today. Some of these climate associated exposures include heat, air pollution, flooding, lack of adequate access to shade and water, as well as smoke and fire exposure. This epitomizes how vulnerability is socially and politically constructed by decision makers, both in the past and in the present through disinvestment, neglect or marginalization (Ford et al., 2020). Consequently, there is a need to create open-air spaces and sheltered climate resiliency spaces to relieve community members that are more disproportionately affected by the onerous effects of climate change. Examples of open-air spaces can be parks, pedestrian parklets, recreational facilities and community gardens. Some examples of sheltered spaces that already provide climate resiliency include cooling centers, sports facilities, community & cultural centers, and libraries.

According to LAHSA’s official homeless count, the unhoused community of Pacoima and Sun Valley has been growing since 2017. Despite evidence of the disproportionate exposure to the effects of climate change of this community, the unhoused population is often overlooked when it comes to climate resiliency initiatives. In addition, there is not a lot of academic research focusing on how resiliency spaces can better serve this population, research shows that that green infrastructure and investment bring along more policing and stigmatization of unhoused communities. (Wolch et. Al, 2014; Rigolon and Nemeth, 2018)

In this paper, I briefly define the term resiliency. Then I compare four initiatives that have integrated the unhoused community as part of their service population in programs that increase climate and community resiliency. All of the examples are from other Los Angeles parks, wellness centers or public facilities, and one Self-Help center in San Francisco. Next, I expose the reasons why unhoused community members are one of the groups most vulnerable to the effects of climate change, and I provide specific context about the unhoused community in Pacoima to highlight the urgency of this approach. Lastly, based on these examples, I offer recommendations to Pacoima Beautiful about how to meaningfully engage and include the houseless community in beneficial strategies to increase resiliency and avoid further marginalization of the unhoused community as green investments come into the neighborhood.

## Defining Resiliency

The term “Resiliency” derives from the Latin “*resilire*” which refers to the ability to “bounce-back”, to rebound or to recoil (Online Etymology Dictionary). In other words, resiliency implies the ability to recover from a shock or stress. Resiliency is used in a plethora of scientific fields, but for the purpose of this paper, resiliency involves the ability to recover from the shocks and stresses caused by climate change effects. The term “resiliency” has evolved into a key concept for future sustainability goals, and in parallel to or as the flipside of community vulnerability (Ford et Al., 2020) It is typical of both public and private institutions to develop sustainability and resiliency plans with the goal of reducing the

vulnerability of natural ecosystems and people to the effects of climate change. The city of Los Angeles, as part of *the 100 Resilient Cities Initiative*, released a *Resilient Los Angeles*, in December of 2018. In this plan, Mayor Eric Garcetti defines resiliency as “a value that [...] will help us strengthen our infrastructure, make our institutions more inclusive, and create safer neighborhoods” (Office of L.A Mayor’s Office).

Another conventional definition presented by the Rockefeller Foundation --the financing institution of the *100 Resilient Cities Initiative* focuses on resiliency as a bridge concept between climate change adaptation efforts and disaster management in urban areas: “City resilience describes the capacity of cities to function, so that the people living and working in cities – particularly the poor and vulnerable – survive and thrive no matter what stresses or shocks they encounter” (Rockefeller Foundation) In this instance there is a reference to providing a way for vulnerable communities and individuals to not only survive but to thrive with dignity. This is central to the intention of this paper; which is to explore how to prevent further marginalization of the unhoused community in Pacoima and the Pacoima Transformative Climate Communities -TCC planning area, by creating initiatives that can increase the resiliency of this community, through measures drafted in the TCC plan.

## **Resiliency Initiatives**

There is scientific consensus about the ubiquitous nature of the effects of climate change, yet it is undeniable that these effects disproportionately impact vulnerable populations such as unhoused individuals, the elderly and children. Unhoused individuals are however the most physically exposed to all weather events (Kidd et Al., 2020) Considering the aforementioned definitions of resilience, a resiliency center should be characterized as a place for recovery and replenishment after or during shocking and stressful events. In Pacoima, a resiliency center can provide community relief during and after disaster events such as fire, flood, excessive heat, and air pollution. Considering the ongoing nature of climate change, these events are likely to become more frequent and more extreme. One of the leveraged projects of the TCC grant in Pacoima is repurposing the Pacoima Recreation Center located at David Gonzalez Park to become a resiliency center. Considering that parks and recreational areas have served as a “safe haven” for unhoused communities, in this section I will describe park and public space repurposing projects or programs that generate resiliency benefits for the unhoused community.

*Figure 1. Pacoima Recreation Center at David Gonzalez Park (Los Angeles Department of Recreation and Parks)*



Open spaces, particularly parks and alleys, act as safe havens for the houseless community given the unaffordable housing options and highly surveilled neighborhoods. On the other hand, the housed residents perceive these spaces as recreational public areas or ecological amenities (Dooling, 2009). Our job as planners is to reconcile these spatial notions to ensure that there is equitable access to these spaces for both groups. Equitable access means that these investments help reduce the vulnerability of the diverse residents of Pacoima rather than exacerbate it.

Although circumstances may vary from park to park, there are some steps that each community can take to respond with equity and compassion towards homelessness in public spaces.

The following case studies have created places of relief or integration programs for homeless populations with and without the purpose of serving as a place for climate resiliency for this community.

### **Fremont Wellness Center, Community Clinic and Community Garden**

The Los Angeles Unified School District-LAUSD, through a partnership with Los Angeles Neighborhood Land Trust-LANLT, and the University Muslim Medical Association UMMA, opened a Wellness Center and Community Garden Program at an underutilized area in John Fremont High School. Considering that this school ranked as one of the lowest performing in the county, in addition to critical health concerns in their student population such as obesity, and undernourishment, LAUSD used this opportunity to assess broader issues in the community. They identified the lack of healthy food and adequate access to green space, as well as houselessness and mental health issues as some of the most pressing concerns. This multi-purpose project not only serves the student community, but also includes a greenhouse, garden and clinic that serves thousands of South L.A residents in the school community. Some of the programs

include an outdoors classroom, a community gathering space, a gardening apprenticeship program and a farmer’s market (LAUSD – Facility Services Division) Recognizing the need for mental health services for both unhoused and housed residents in the area, John Fremont High School also proposed a wellness clinic to support community members and address critical health issues that arise with trauma and poverty. Both housed and unhoused neighbors are welcome at this clinic; which offers a variety of mental and behavioral health services and substance abuse programs.<sup>i</sup> This multi-agency holistic project is an exceptional example of how the repurposing of a space can serve a variety of needs when the decision-makers intentionally target populations with the highest need. In this case the unhoused population became part of the school community, receives relevant services, and can also partake in some of the programmatic activities. The garden apprenticeship program spearheaded by the LANLT provides a stipend and helps youth gain important skills for their future development (LANLT). This is important to highlight, considering the increasing number of unhoused youths in the county and in Pacoima.

*Table 1. Comparable Initiatives, Infrastructure, Programs & Events, and Services at Fremont High School Wellness Center*

Fremont High School Wellness Center		
Infrastructure	Programs & Events	Services
<ul style="list-style-type: none"> <li>- Greenhouse</li> <li>- Community Garden</li> <li>- Community Clinic</li> <li>- Open Space with separate entrance</li> </ul>	<ul style="list-style-type: none"> <li>- Intergenerational Activities</li> <li>- Gardening Apprenticeship Program (Paid)</li> <li>- Leadership opportunities for both housed and unhoused youth</li> </ul>	<ul style="list-style-type: none"> <li>- Free medical and (future) dental care for all at UMMA Clinic</li> <li>- Free healthy food distribution</li> </ul>

### **Gladys Park at Skid Row**

Gladys Park is a small recreational area located in the Skid Row neighborhood on 6<sup>th</sup> street, and it is adjacent to the Ellis Hotel, a seniors-only residence. (L.A parks & Rec)



*Figure 2. Gladys Park. (Los Angeles Department of Recreation and Parks)*



Although it is a small urban park, the space has been frequented by the unhoused residents of Skid Row for decades (Blaze, Skid Row Films, 2017). Through community advocacy, grassroots groups and park users have been acknowledged as park stewards (Blaze, Skid Row Films, 2017). Active groups such as the Skid Row Neighborhood Council Formation Committee and the United Coalition Prevention Project have worked in partnership with Los Angeles Recreation and Parks Department to create programming that is relevant to the cultural, economic, social and recreational needs of all park users. As one long-time park user said, “parks are oversaturated by unhoused users, so we should have a say as to what are the activities and services needed and where the resources should be allocated” (Blaze, Skid Row Films, 2017).

Through community advocacy, the park’s public funds were allocated to infrastructure and improvements for all park users. These investments include, cellphone charging stations, low-impact exercise equipment for the adjacent senior community, water features, more benches, and improvement of the basketball court.

In the early 2000s, when the park was re-opened, the city fenced it up and closed it after business hours. The community advocated for open access to the park 24/7, given that it serves as a refuge and community socializing space for many of the unhoused residents of the neighborhood, and for hosting cultural events such as game nights. There is a sense of pride and community ownership of the park, and many activities, services, and resource fairs, take place at this space (Blaze, Skid Row Films, 2017).



The lack of sanitation and hygiene facilities in Skid Row was deemed the most pressing issue in the area (The Guardian, 2017; LA Times, 2018), and in response, two helpful micro-infrastructure initiatives have been implemented in the neighborhood. I have included them in this section per Pacoima Beautiful’s request to specifically discuss water and bathroom access for the unhoused community even though these initiatives are not solely located at Gladys Park. The first initiative is the solar -Water Box/Caja de Agua provided by an organization named 501CTHREE, which provides fresh and cool drinking water. The second is called the Refresh Spot initiative, funded by the Mayor’s Office in 2017, but it has not been operating continuously. The refresh Spot initiative was designed by a multi-partnership collaboration with different Skid Row community organizations, and it is a first of its kind hygiene station in the United States for those who do not have access to bathrooms, hand washing stations, showers and laundry facilities (501CTHREE)

Figure 3. The Water Box (501CTHREE.org) – Refresh Spot Services Flyer (Homeless Care Los Angeles Facebook)



The following table shows the services, programs and infrastructure available at Gladys Park for the unhoused community.

Table 2. Comparable Initiatives, Infrastructure, Programs & Events, and Services at Gladys Park in Skid Row.

Gladys Park – Skid Row		
Infrastructure	Programs & Events	Services

<ul style="list-style-type: none"> <li>- Solar Powered electronic device charging stations</li> <li>- Permanent bathroom facilities (Automatic Public Toilet - APT)</li> <li>- Water fountains</li> <li>- Low-impact exercise machines</li> <li>- Basketball Courts</li> </ul>	<ul style="list-style-type: none"> <li>- Film screenings</li> <li>- Music Jams (one-time BET Awards event)</li> <li>- <i>Who I am – Homeless but Human</i> pop-up event</li> <li>- Game nights</li> </ul>	<ul style="list-style-type: none"> <li>- Hygiene Kits Distribution</li> <li>- Lava Mae Showers</li> <li>- AA meetings and substance abuse programs</li> <li>- Food and meals distribution</li> <li>- Toy Drive</li> <li>- Books</li> <li>- Grooming for Success (Free grooming services)</li> </ul>
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## Hospitality House – San Francisco

Central City Hospitality House is a non-profit organization located in the Tenderloin and South of Market neighborhoods in San Francisco and has served the unhoused community of San Francisco since 1982.

The organization has two self-help centers that operate Monday through Friday during regular business hours as a multi-service facility for both housed and unhoused individuals. (Hospitality House) Although many of the programs are targeted towards the increasing homeless population of the area, there are film screenings, free massage therapy, political engagement activities, and wellness practices. In addition, the centers allow the participants to use the phone, charge their electronics, use the computer room, and access basic amenities such as bathrooms, water fountains, hygiene kits, coffee machine and microwaves. Although the program is not specifically designed as a climate resiliency center, unhoused community members line up outdoors in the morning to seek warmth after cold or rainy nights.

Bathroom use is monitored and timed by a staff member, and everyone who enters the self-help center is added to a sign-up sheet. The staff member provides toilet paper and other hygiene products as requested. The time limit for bathroom use is 5 minutes, but participants have the opportunity to request accommodations based on health or ability circumstances.

In addition to the drop-in center services, Hospitality House has two strong and widely recognized Arts and Community Empowerment programs that go hand-in-hand with the basic service provision. Many participants take advantage of the full programming, service provision and training opportunities.

*Table 3. Comparable Initiatives, Infrastructure, Programs & Events, and Services at Hospitality House.*

Hospitality House		
Infrastructure	Programs & Events	Free Services

<ul style="list-style-type: none"> <li>- Bathrooms</li> <li>- Microwaves</li> <li>- Charging stations</li> <li>- Phones, computer lab and wi-fi.</li> <li>- Water fountains</li> </ul>	<ul style="list-style-type: none"> <li>- Movie screenings</li> <li>- Arts Program</li> <li>- Art Auction Benefit</li> <li>- Community Building Program &amp; Advocacy</li> </ul>	<ul style="list-style-type: none"> <li>- Employment counseling</li> <li>- Food distribution</li> <li>- Hygiene kits distribution</li> <li>- Food distribution</li> <li>- Care-through-touch free massage</li> <li>- Counseling on site</li> </ul>
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**No Wrong Door Program**

The No Wrong Door Program is a non-centralized initiative launched by the Mayor’s Office and the Personnel Department that has a two-prong educational and community engagement approach. Considering that houseless individuals seek respite at public agencies from the street environment and weather conditions, the No Wrong Door Program supports agencies, staff and other community users of those agencies in establishing compassionate interactions or relationships with the unhoused community (L.A City). By placing the program’s logo at the entrance of multiple public service facilities and agencies, unhoused community members are made aware that they are welcomed and treated with respect and dignity in this space. In addition, the program has an educational multi-lingual guide that provides eight different ways that people can support someone who is experiencing homelessness. The guide includes suggestions such as: greeting someone respectfully, asking if they need a service or supply, inviting them to an ongoing activity. This approach is a first step to support compassionate relationships between unhoused and housed community members.

**Climate Vulnerability in Unhoused Communities**

As exemplified by Mayor Garcetti’s resiliency definition, resiliency and adaptation strategies typically revolve around the protection of centers of capital and private property. Hence, the unhoused and property-less, are not given priority in these plans, or the location of resiliency projects is not specifically chosen to benefit this population. This situation is further aggravated when housed residents also express discontent and disapprove of the presence of unhoused communities in common public spaces such as parks, libraries and bus stations.

On the other hand, there is evidence of the impact of heavy rains, extreme heat, and fire smoke in the last few years on the houseless population in California. There are estimates that there were over 150,000 homeless people in the state as of 2019, and official counts have a moderate to high margin of error, so the numbers could be higher (Nagourney, 2017; Wong & Gee, 2017) In addition, there are other compounded risks such as violence, illness, economic instability and other factors that exacerbate these conditions.

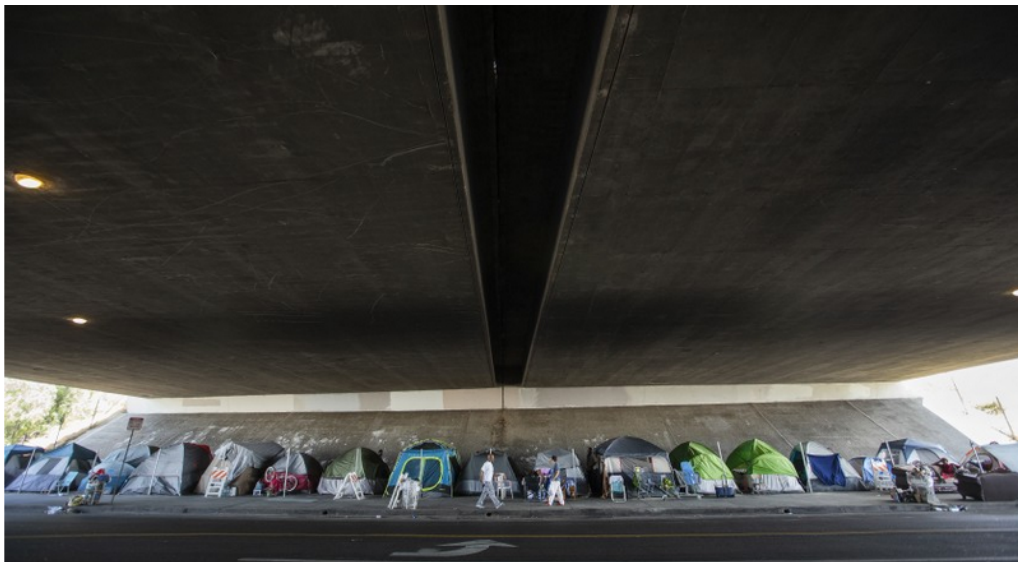
With the pandemic and recent wild fires, more deliberate efforts and creative solutions to provide emergency shelters and refuge for the homeless population emerged. This opens a window of opportunity

to continue planning and repurposing public and private spaces to address the housing crisis given more frequent climate disasters and changes in weather patterns.

## Homelessness in Pacoima

Pacoima has also been affected by the housing crisis in the Los Angeles; which has displaced many residents, particularly long-term Black residents, who lost their homes. Some of the unhoused residents are the children of long-time residents of the neighborhood as reported by a 2019 article by the Los Angeles times titled: *Locked out of L.A.'s white neighborhoods, they built a black suburb. Now they're homeless.*<sup>ii</sup> In this scenario, public spaces such as parks, sidewalks and alleyways have become the only places where unhoused community members can be.

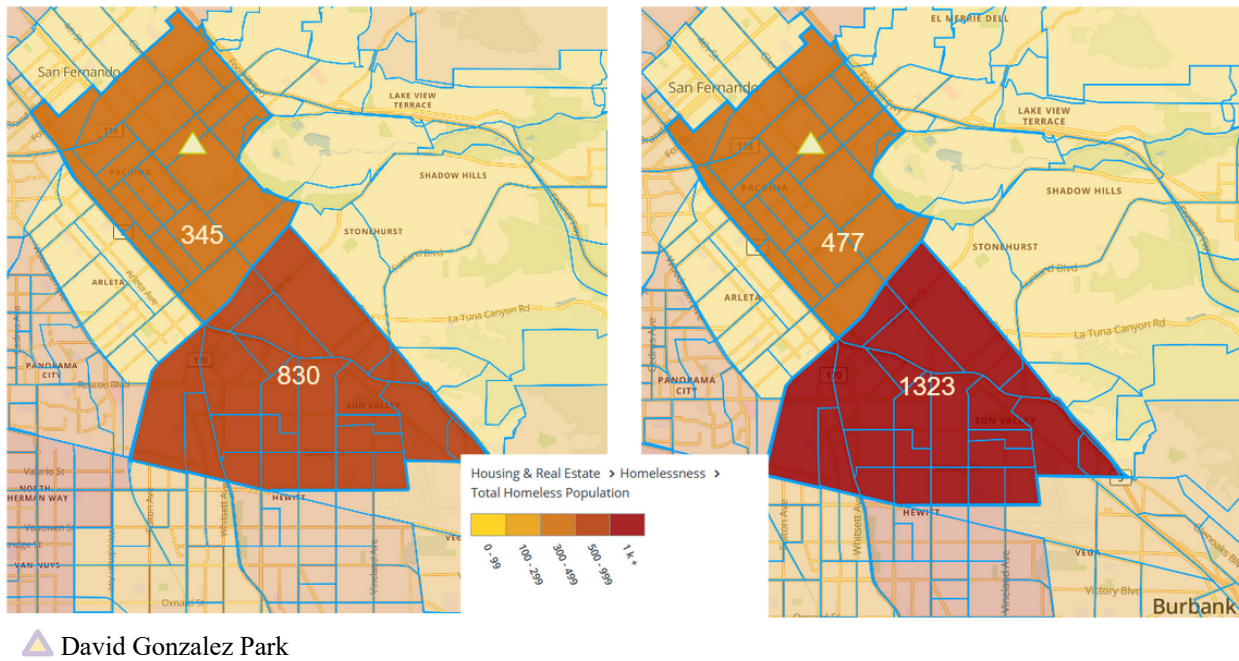
*Figure 4. Homeless encampment in Pacoima (Los Angeles Times, 2019)*



**The homeless encampment under the 118 Freeway in Pacoima. Caltrans has sought to move the camp but faces legal challenges. (Mel Melcon / Los Angeles Times)**

According to the 2017 and the 2020 homeless count conducted by the Los Angeles Homeless Services Authority, the number of unhoused individuals in Pacoima and Sun Valley, where the TCC planning area is located, has been increasing tremendously. The greatest majority of the unhoused community in these neighborhoods is unsheltered. Among this population about 20% are youth individuals and the numbers continue to rise (LAHSA)<sup>iii</sup>

Figure 5. Pacoima and Sun Valley Homeless Count Map 2017 & 2020 (USC Neighborhood Data Portal)



These statistics show the dimension of the issue in Pacoima and the importance of taking serious steps to alleviate vulnerability, but also of engaging in meaningful efforts to involve the houseless population in decision making processes about climate change, given that they are the most affected group.

## Recommendations & Opportunities

Community resiliency is constantly changing as the environmental conditions around us change. Resiliency strategies would yield a greater common benefit when those most affected are prioritized and taken care of. A critical component of the TCC implementation plan in Pacoima is the Displacement Avoidance plan. There is yet to be a strategy for how to prevent further marginalization of the growing unhoused population in Pacoima in this plan. As such, I recommend the following:

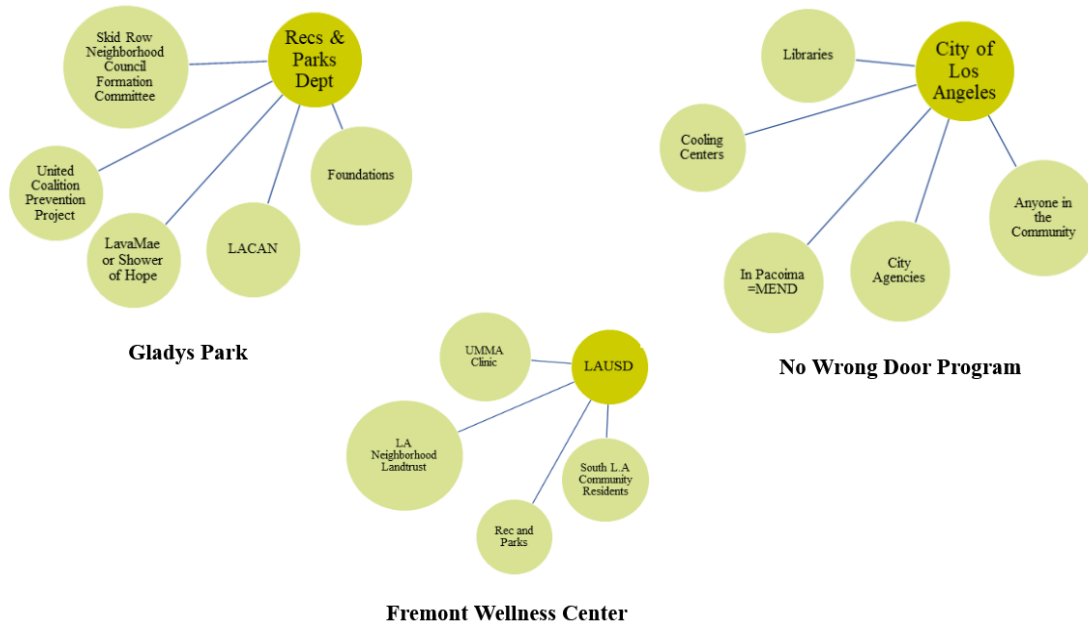
1. As the only environmental justice organization in Pacoima, Pacoima Beautiful can lead reconciliation strategies to support the community in understanding the different notions of resiliency in a shared community space such as David Gonzalez park. As described in Dooley, 2020, unhoused and housed community members have different notions of the use of parks, green spaces and even resiliency centers. It would be beneficial to bridge these notions by serving the climate resiliency needs of all Pacoima residents through educationally, recreationally and culturally, relevant initiatives. The following diagram (Figure 6) shows all of these intersections and positionalities.

*Figure 6 Conceptual diagram of reconciliation of the notions of Parks, Green Space and Resiliency Center and the role of Pacoima Beautiful.*



2. Create multi-agency collaborations to implement and intersectional climate resiliency benefits. As shown on the multi-agency collaboration diagram below (Figure 6), all of the initiatives described in this paper were developed and operated through multi-sector partnerships. One of the multi-service agencies in Pacoima that adopted the No Wrong Door program in Pacoima is Meet Each Need with Dignity -MEND. Pacoima could collaborate with them to learn more about the needs of the unhoused community in the neighborhood.

Figure 7 Conceptual diagrams of multi-agency collaboration and partnership for resiliency strategies



3. Engage the unhoused community in planning and decision-making activities in order to gain further understanding of their climate change or resiliency related needs.
4. Create opportunities for dialogue between unhoused and housed residents in order to humanize and encourage empathy among community members. As demonstrated by most of the described initiatives, culture and arts can serve as avenues for trust-building and compassion between the unhoused and housed communities.
5. Create mutual learning materials that can support community understanding of resiliency measures and of how addressing the vulnerable conditions of the unhoused residents of Pacoima can increase resiliency and adaptability for all. The No Wrong Door Program offers an educational guide template that can be adapted to the lived experiences of Pacoima residents.
6. Integrate a multi-benefit approach at the resiliency center that combines basic need services for the houseless population, such as sanitation, water, heat and food, in addition to the already planned community recreational and cultural activities.



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# **Latinx Urbanism in My Backyard: Assessing the Potential of Yard and Driveway Configurations in Pacoima**

**21 February 2021**

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## **Abstract**

Once a humble bedroom community and manufacturing hub in the City of Los Angeles' Northeast San Fernando Valley, the neighborhood of Pacoima has densified and deindustrialized since the mid-twentieth century. These conditions have threatened the largely Latinx resident population with gentrification and displacement, thereby leading as many as half of the community's single-family homeowners to build Accessory Dwelling Units (ADUs) on their land, either permitted or unpermitted. While ADUs have undergone extensive research in recent years, there has been little exploration of how yard and driveway configurations respond to ADU construction. New yard and driveway configurations are informally designed to both accommodate greater population density, particularly pertaining to parking, and hold space for community and family, especially as they are perceived within the context of Latinx Urbanism. Due to their informality, their impact on adverse environmental impacts, such as water runoff and urban heat islands, are not directly captured. This paper supplements previous research on ADU typologies and social landscapes by further assessing yard and driveway configurations of properties in Pacoima, especially those with ADUs. First, I introduce key understandings of residential spatial use within the context of Latinx Urbanism. Afterward, I illustrate typologies of yard and driveway configurations in Pacoima based on observations from satellite imagery and field surveying. Finally, I make preliminary policy recommendations and identify research gaps for further urban design and landscape architecture potential of yards and driveways in Pacoima, pertinent to Latinx Urbanism and green infrastructure.

## **Keywords**

*Accessory Dwelling Units, Green Infrastructure, Latino/a/x Urbanism, Pacoima, Social Landscape, Yards and Driveways*

## **Introduction: The Social Landscapes of ADUs in Pacoima**

Applications for property owners to construct Accessory Dwelling Units (ADUs) in the City of Los Angeles have skyrocketed in recent years since state legislation (Assembly Bill 2299 and State Bill 1069) went into effect in January 2017. These policy measures removed barriers to ADU construction and instituted a ministerial, rather than discretionary, process to their construction; this grants homeowners a simpler pathway to an additional source of income while also providing renters needed housing as prices rise in the city's housing crunch. A study from Carlson, Dryjanski, and Peterson (2019), as part of the previous comprehensive project collaboration between Pacoima Beautiful and the UCLA Urban + Regional Planning program, notes that many of these ADUs are unpermitted, and that there is at least one unit on an estimated 48% of single-family lots in Pacoima. This study extensively explored Pacoima's ADUs, the social landscapes that they cultivate, and the typologies of their built form. However, this study only briefly mentions the subsequent impacts on yard and driveway configurations in response to the construction of these ADUs.

This paper initiates a qualitative assessment of yards and driveways on properties in Pacoima, with particular consideration of those with ADUs. The informal population growth in the area due to ADUs has led to untracked increases in parking demand, thereby forcing property owners to pave over most, and in some cases all, of their land to accommodate an influx of cars. This is particularly troublesome from a sustainable development perspective, as impervious pavement may be contributing to urban heat island effects and stormwater runoff impacts. Typically, homeowners would in response turn to xeriscaping, especially as in recent years state and local governments have instituted policy incentives for sustainable landscaping. However, such movements and policy incentives center grass lawn removal as the primary effort in greening residential property. While there are many lots in Pacoima with grass lawns, these policy incentives center a more affluent suburban experience and neglect more low-income communities like Pacoima that have already removed lawns but have not replaced them with more sustainable design.

Other green infrastructure efforts in similar neighborhoods should serve as case studies, but none center green infrastructure at the residential scale, especially single-family housing, which is frequently

deemed the most environmentally unsustainable of housing typologies. Pacoima Beautiful's Urban Greening Plan (2016) includes several design guidelines for green infrastructure projects, but these only address public realm improvements such as streets, parks, intersections, and alleys. While many of these design considerations may be applicable in residential neighborhoods, they do not apply to the individual single-family private properties. An announcement from the Los Angeles Mayor's Office (2018) mentions several public infrastructure projects earmarked under grants from California's Transformative Climate Communities (TCC) program, such as battery-electric DASH buses and the planting of 2000 street trees. However, the only environmental sustainability project named at the residential scale is the installation of solar panels on 175 single-family homes. Recent efforts fail to acknowledge or consider the potential of residential green infrastructure in Pacoima, despite single-family residential lots comprising a vast majority of Pacoima's zonable land. The potential of greening residential spaces is therefore invaluable.

However, simply removing pavement and replacing it with more sustainable green infrastructure does not consider the social implications of yard and driveway configuration, especially in the context of Latinx Urbanism, a culturally specific set of spatial forms and practices created by people of Hispanic origin (Sandoval-Strausz 2018). It especially neglects how residents of communities like Pacoima have informally replaced their yards with paved parking spaces. Latinx communities, the Mexican household especially, highly regard spaces for family and community, and private spaces like the home and the attached yards often become semi-public spaces for community interaction. However, literature on yards and driveways in conjunction with ADUs is limited. James Rojas (1991) offers some insight on Mexican home typologies in East Los Angeles, or what he dubs the "East Los Angeles Vernacular":

*Driveways in East Los Angeles "housescape" are an important feather that allows for many ephemeral uses from parking cars, children playing to barbecuing or partying. The props vary to the appropriate use. On most lots in East Los Angeles the driveway runs the full length of the lot on one side. The garage is placed in backyard, rather than the front yard. Most homes have easy access to the driveway from the side of the house. The importance of the driveway increases as houses are added to the lot, as in the case of East Los Angeles which has developed over a long period of time. The driveway serves as an "outside" hallway as residents walk to and from their home to the street.*

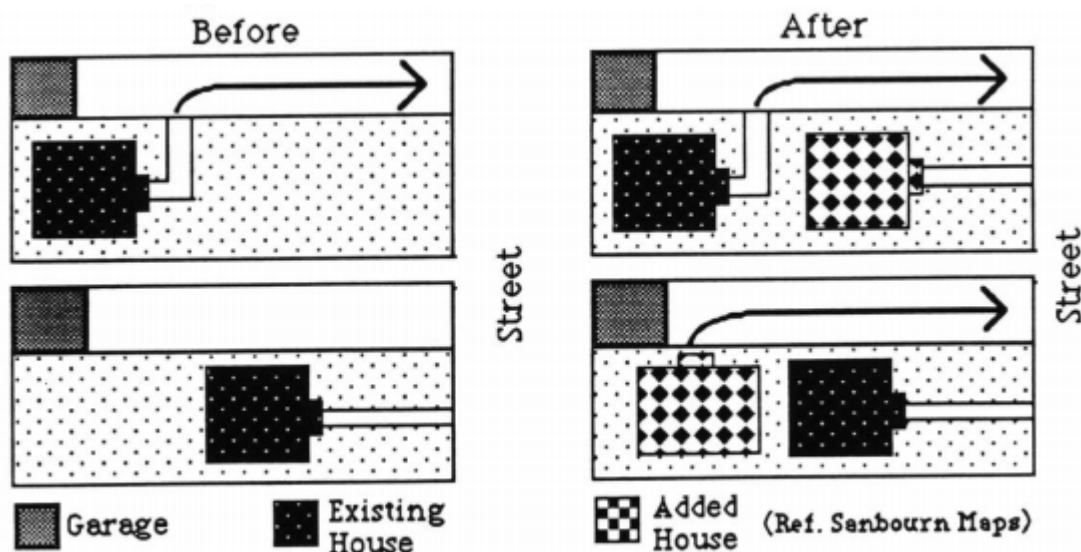


Figure 1: Driveways and ADUs of the East Los Angeles Vernacular (Rojas 1991)

While a different community, similar property dimensions and the Latinx context render East Los Angeles a comparable case study to Pacoima today. Rojas not only speaks to an example of how now-called ADUs fit into the context of the East Los Angeles Vernacular, but he also notes the importance of spaces like driveways acting as flexible, multi-purpose ones. Coupled with his illustration above, his narrative demonstrates that the yard and driveway, not just the ADU, deeply impact the social landscape of Latinx households. Similarly in Pacoima, yards and driveways, as both parking and community space, are an invaluable component of the built form.

This then begs the question: how can yards and driveways be made more environmentally sustainable without being disruptive of local culture and social landscape? This paper aims to supplement existing literature on yard and driveway configurations and assess its application in Pacoima. Using satellite imagery and site surveying, I will summarize common yard and driveway configurations in Pacoima in a

shortlist of typologies. Finally, I will compare these typologies with the existing literature to identify research gaps and assess design potential on Pacoima single-family properties with ADUs, especially in the context of green infrastructure and Latinx Urbanism.

### **Typologizing Yard and Driveway Configurations in Pacoima**

In this section, I summarize and observe some common typologies of yard and driveway configurations on single-family lots with ADUS in Pacoima. Note that these are not exhaustive of all observed configurations and that there may be some variation between them. These typologies also focus primarily on the distribution of pavement and the perceived use of space, but do not account for other key built form characteristics, such as fences as subdivisions, vegetation, swimming pools, and porches. While these elements are also critical for understanding residential green infrastructure and Latinx Urbanism, the framework of this initial study will establish pavement and perceived use as foundational knowledge before delving further into specific elements of the built environment.

Like in East Los Angeles, single-family residential lots are virtually all long and narrow, making further recommendations on yard and driveway configurations implementable nearly universally in Pacoima; typologies observed from such lots will be showcased on the next page. There are few lot exceptions that will not be included in this study to maintain uniformity, such as large square residential lots, gated communities, traditional multifamily housing, and lots with unique street connections, such as those attached to cul-de-sacs.

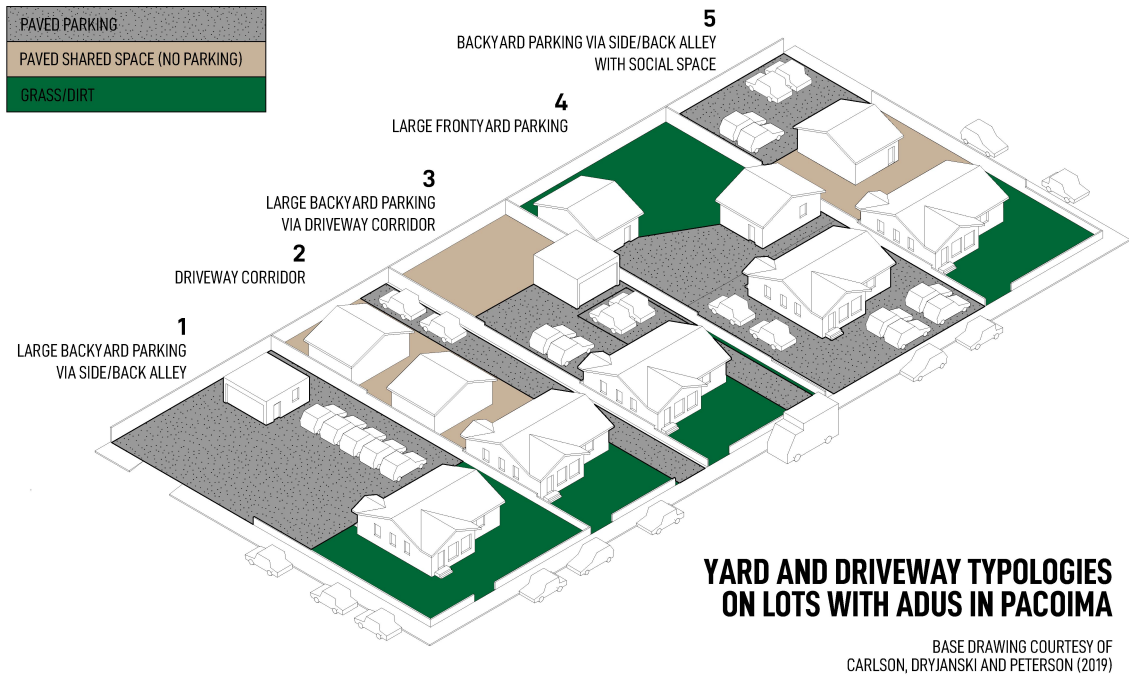


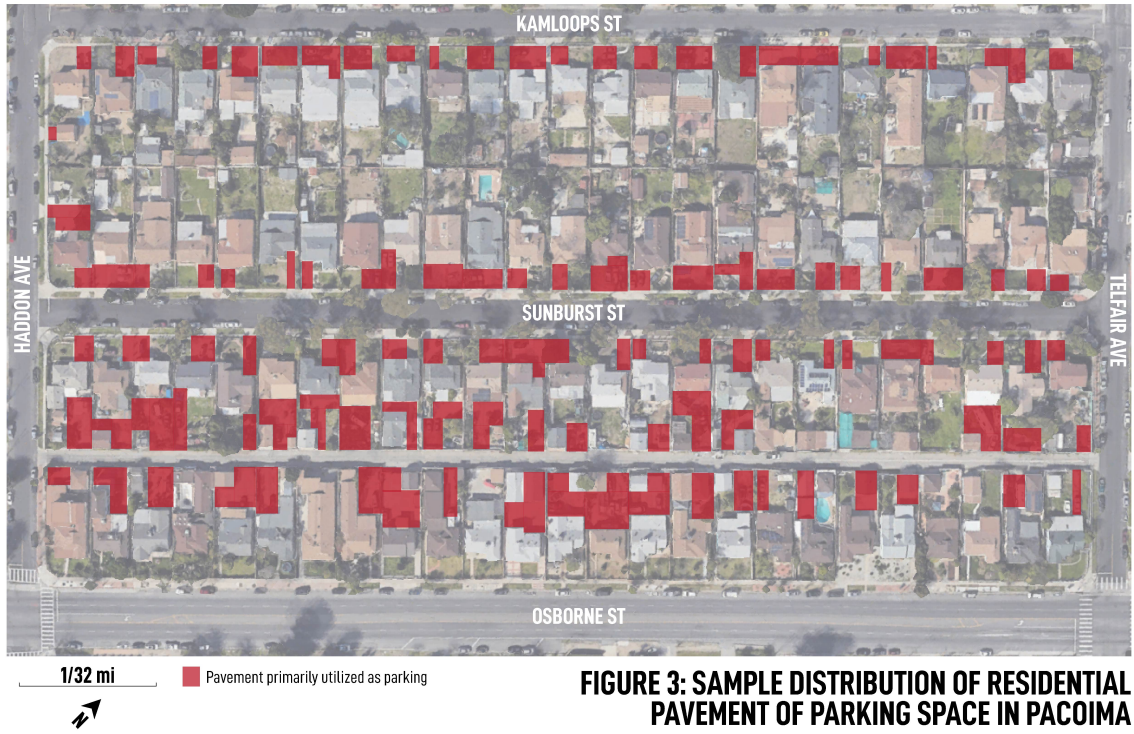
Figure 2

As illustrated in Figure 2 on the previous page, the ground mainly takes on one of three forms: paved parking, paved social space (no parking), and grass/dirt. Even here, however, there is some ambiguity in uses; paved parking areas often have flexible uses and become social spaces depending on the time or day, while some lots have parked cars on grass or dirt. Backyards in particular show many signs of serving as active social spaces. Furniture, such as tables and chairs; children-focused features, such as toys and playground equipment; and recreational items, such as exercise equipment and basketball hoops, demonstrate that these paved spaces often serve as both the social landscape for Pacoima residents as well as residential parking, usually with little or no demarcation between them. Less frequently, there are also visible workspaces, mostly evidenced by workbenches and stacks of construction materials like wood beams. These elements were identified via satellite imagery.

Lots with ADUs tend to be split into thirds: front, middle, and back, as illustrated in Appendix A. The proportion that each third occupies varies across properties. The front and the middle are demarcated by the main housing structure, which is always near the front of the property. The boundary between the middle and the back is more ambiguous and varies immensely, if the boundary exists at all. In most cases on properties with an ADU, the ADU marks the boundary. Otherwise, there are also many cases wherein the back two-thirds of the property encompasses only one paving form, such as being entirely paved, entirely grass, or entirely dirt. From initial qualitative observation, it seems that about half of properties have pavement that encompasses at least half of the lot; typically, most of the rest of the top-down surface area would belong to the housing structures, namely the roofs.

Of the typologies in Figure 2, the most common is the fourth, or large front yard parking areas. These lots are characterized by having mostly pavement with little or no dirt or grass areas in the front, with the pavement primarily used for parking. In some cases, these front yards possess elements of social space, such as seating, but nearly all of these front yard parking areas seem predominantly for parking only. This is evidenced by cars taking up the whole front yard, which is subsequently also demonstrated by tire marks or oil spillages if a car was not directly observed. Figure 3 on the next page demonstrates the prevalence of this typology.





**FIGURE 3: SAMPLE DISTRIBUTION OF RESIDENTIAL PAVEMENT OF PARKING SPACE IN PACOIMA**

*Figure 3*

It should be noted that front yard parking areas seem to be the most prevalent typology simply because most single-family lots in Pacoima are only accessible via a residential street at the front of the property. As shown in Figure 3<sup>1</sup>, corner lots and lots with access to a back alley almost always have paved backyard areas for parking and other uses, which are also represented by typologies 1 and 5 in Figure 2. Parcels facing a major thoroughfare like Osborne Street in Figure 3 forego the front driveway for paved backyard parking areas that are accessible instead via a back alley. Parcels with access both to a residential street and to a back alley, although rare, do not have only a front or only a backyard parking area; instead they typically have both. Thus, the most common yard and driveway configurations may actually be proxies that simply document the kind of connections each property has to the surrounding road network.

These observations are also applicable regardless of whether a parcel contains an ADU. The prevalence of pavement in these yard and driveway configurations and the immense amount that is dedicated to parking may also be indicative of other social and economic factors in Pacoima. For instance, as shown in Figure 4 on the next page, there are many pick-up trucks, which are typically larger than other passenger vehicles; this may represent the dependence on more parking space to accommodate transportation that is necessary for perhaps contract work in fields like construction. Generally, the amount of parking can also simply denote overcrowding in some lots, which may act as an alternative to constructing an ADU despite the streamlining of permitting in recent years. ADUs may also simply be more difficult to observe, especially if they are simply extensions or second-story additions to the original housing structure.

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<sup>1</sup> Google Earth. (2021).



*Figure 4: Pick-up trucks dominate the parking landscape in many of Pacoima's front yards<sup>2</sup>*

### **Design Potential + Further Research: Greening Pacoima's Yards + Driveways**

My observations reveal that contrary to Rojas' assessment of front yards and driveways in his research, Pacoima deviates from East Los Angeles in that its front yards have instead become parking areas, with social spaces relegated to the backyard, thereby rendering them private and isolated from the community. This holds true regardless of the presence of an ADU. Aside from Rojas and others' research on this topic, outdoor residential spaces are evidently left out of the discussion of Latinx Urbanism. While the home, its interior, and the public realm are covered in existing literature extensively, there is a need to address environmental justice concerns in the semi-public spaces of front and backyards, especially in Pacoima. Mendez (2003) posits that "Latino's cultural preferences for social interaction, their adaptive reuses, and lifestyle choices have conceivably created a de facto Latinized version of New Urbanism and smart growth communities" and that these lifestyles can be capitalized upon "for compact and new urbanist lifestyles." While compactness is arguably demonstrated through the prevalence of ADUs, transportation has not reflected this compactness; 93% of Pacoima residents depend on a private vehicle to commute, according to 2019 American Community Survey Data, and this is reflected in the residential landscape. Thus, simply replacing much of Pacoima's residential pavement with more sustainable landscaping neglects the inherent transportation needs of the neighborhood.

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<sup>2</sup> Google. (2019).

Residential space, while comprising a vast majority of Pacoima's land, lacks any sort of truly comparable case study to reflect its unique status as a Latinx suburb and the needs associated with it. Pacoima residents are evidently dependent on their private cars, and the housing crunch has subsequently led to a crunch for parking space as well. Text on Latinx Urbanism fails to fully capture this crunch, and so further research is needed to develop methods of greening yards and driveways in socially conscious ways, while not impeding upon the need for parking. Recent local efforts in green infrastructure emphasize the public realm but do not provide any substantial foundation for greening single-family residential properties. Considering all of these research gaps, there are several areas of further research that have been identified for Pacoima:

#### *Non-Intrusive Surface Enhancements*

Several single-family lots contain carports and other shade structures. These structures shield pavement from sunlight, mitigating urban heat island effects. These structures, in addition to the roofs of the actual homes and ADUs, can become green and solar roofs. Green roofs can help mitigate heat inside the home as well; this passive cooling can also help minimize the cost of air conditioning and subsequently assist with utility burdens in Pacoima. If pavement remains uncovered, there are also many ways that they can be made more environmentally sustainable; white and other light-colored paint can be applied to driveways and other paved surfaces to reflect sunlight, keeping surfaces cool. Pavement can also be replaced with pervious materials that are still driveable, such as gravel, or paved in a way that allows for dirt or grass to be exposed, as in Figure 5 on the next page. Dirt and grass absorb less heat and can also help filter stormwater, thereby mitigating both heat island effects and runoff pollution. These design interventions are deemed non-intrusive in that they still allow paved surfaces in Pacoima to retain their functions as both parking and social spaces while enhancing the local ecology.



Figure 5: A pervious green driveway<sup>3</sup>



Figure 6: A residential bioswale<sup>4</sup>

### *Bioswales: Enhancing Connections to Green Infrastructure in the Public Realm*

Pertinent to pervious pavements, there can also be a more intentional approach to connecting residential land to green infrastructure improvements in the public realm. Bioswales, channels with vegetation that filter stormwater as shown in Figure 6, can run alongside or underneath driveways to connect to the greater water network. Such residential green water infrastructure enhancements can also funnel into green alleys and other public realm projects that are being considered in Pacoima. The National Association of City Transportation Officials (n.d.) notes that bioswales have flexible siting requirements, and therefore they can be minimally intrusive as their typically linear form can be fit into any yard and driveway configuration. They can also help retain and recycle stormwater, helping sustain vegetation on a property.

<sup>3</sup> Dalley, Jen. (2014). “Home Improvement Project: Install a Permeable Driveway.” *Houzz*.

<sup>4</sup> National Association of City Transportation Officials. (n.d.) “Bioswales.”



### *Residential Food Production and Vegetation*

As part of the preliminary literature review for this paper, the only confluence of environmental sustainability and cultural consciousness in Pacoima was in residential gardens. Shamasunder (2015) wrote a study of a 2013 project with Meet Each Need with Dignity (MEND), another Pacoima-based nonprofit organization. In this project, an initial cohort of 36 families in Pacoima, which were almost all Latinx, were given gardening classes, garden boxes, and plants to begin at-home food production. As of time of writing in 2015, 127 total gardens were built. Spatially, this is the most intrusive project on existing paved spaces. However, according to the study, 55% families maintained contact with families that they met through the program, and 57% of families noted that they worked on their gardens together. Thus, these gardens may actually be social spaces themselves, and while they interrupt the existing built form of paved social spaces, they do not interrupt critical connections among household members. They offer an alternative to paved social spaces while also helping combat local food insecurity.

This is also pertinent to Latinx Urbanism, and residential gardens may be an untapped element of the built environment within this context. All of the 127 families noted that their gardens allowed them to show their culture to younger generations by incorporating skills they learned from their elders in gardening and cooking. Many interviewees also expressed that they preferred to cultivate produce needed in traditional meals. These gardens then provide a culturally conscious way of greening Pacoima at the residential scale. A similar project can be expanded, and a possible partnership with MEND can be explored.

All of the mentioned design interventions, each providing substantial social and environmental benefits, require further exploration. There is a need to delving further into aspects of their feasibility, such as pertinent policies, design capability, and competitiveness in acquiring TCC funding. However, with single-family zoning dominating Pacoima's landscape, the excessive paving in Pacoima must be addressed but in a way that still accommodates sociocultural transportation needs. Quantifying the benefits of these projects is especially critical. This includes exploring how such projects can mitigate (or exacerbate) gentrification and displacement; how they can more seamlessly connect with the planning, design, and

construction of public realm green infrastructure improvements like green alleys; and estimating their effects on stormwater pollution, urban heat island effects, and other environmental conditions. These must all be considered while developing a method to survey and incorporate resident input to prevent a prescriptive approach to tackling green infrastructure in the context of Latinx Urbanism. Central to further research is the constant acknowledgement of the needs and wants of the community as they directly communicate them.

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Pacoima Alley Network

Could Pacoima's Alley Network Become a Green Alley Network?

by

Sarah Diekroeger

## **Abstract:**

*In 2020, an underutilized alley behind a commercial strip in the Pacoima neighborhood of Los Angeles was converted into the Bradley Avenue Plaza and Green Alley, a vibrant community space and walkable path with vegetation and seating. The purpose of green alleys is to take an alleyway and use permeable pavement, vegetation, and stormwater management to replenish groundwater, increase active transportation, provide a safe space for community gathering, reduce greenhouse gas emissions, and reduce the urban heat. In this research paper, I examine the existing alley network in Pacoima and explore how these alleyways could be converted into green alleys that benefit the local community. I begin with a literature review of green alley best practices, including relevant City of Los Angeles context. Then, I present my own research methods and findings related to Pacoima's existing alley network and its potential to become a green alley network connected to the Bradley Avenue Plaza and Green Alley.*

Keywords: Alley, Pacoima, Urban Greening, Green Infrastructure, Green Alley, Bradley Plaza, Stormwater Management, Urban Heat

## **Literature Review**

### **Background and Local Context**

Green alleys are an innovative and increasingly popular form of infill development that takes underutilized or vacant alleys and converts them to safe, functional spaces using green infrastructure. Common improvements include permeable pavement, vegetation, and general clean up (Attarian, 2010). The resulting green alleys become community assets and resources for environmental, economic and social benefit.

Pacoima is a culturally rich neighborhood located in the San Fernando Valley of Los Angeles that would greatly benefit from the resources that green alleys provide. Pacoima is a historically disadvantaged neighborhood that experienced lack of investment. With little green space and a high percentage of impervious surfaces, Pacoima is at risk of flash floods and extreme temperatures due to climate change combined with the urban heat island effect. Focusing on environmental, social, and economic benefits, I explore best practices for green alleys and learn from existing greening projects in Los Angeles and other cities implementing green alleys.

The City of Los Angeles has a special need for parks and green space. As one of the most park poor cities in the United States, Los Angeles has a mere 7.8% of the City's area dedicated to parks and open space (Cassidy, Newell, & Wolch, 2008). Notably, the distribution of those parks is highly inequitable and clearly influenced by historic racism as well as persisting systemic racism. Los Angeles City also has 12,309 alley segments equaling approximately 900 linear miles of alleys. Combined, these linear miles amount to about three-square miles of alleys (Newell, Seymour, Yee, Renteria, Longcore, Wolch, & Shishkovsky, 2012). Green alleys provide a multi-faceted solution with the potential to convert a portion of those 900-linear miles of alleys into

usable space that includes parklets and natural features. Within the City of Los Angeles, the San Fernando Valley, where Pacoima is located, accounts for 26.7% of all alley segments in Los Angeles (Cassidy, Newell, & Wolch, 2008). The Pacoima neighborhood also has a mere 54.3 acres of park space to serve the entire community indicating that Pacoima could be an ideal location for a green alley network (Pacoima).

The insertion of green alleys in Pacoima is not a novel idea. Pacoima has already benefited from the Bradley Avenue Plaza and Green Alley Project which was completed in 2020. A local non-profit, Pacoima Beautiful, worked closely with the community to create usable space that meets resident's needs and integrates green infrastructure. The new infrastructure has a 2 million gallons annual rainwater capture capacity, is ADA accessible, and holds 1,346 trees and plants (Transforming). This project was multi-faceted with a focus on environmental and social benefits. Building off of the Bradley Plaza and Green Alley Project's success, there could be potential to create a connected network of paths that further supports the existing community's needs.

### **Best Practices**

Green alleys deliver environmental, social, and economic benefits. Some designs focus on one main benefit while others are multifaceted. The following will explain the ways in which green alleys can provide environmental, social, and economic benefits and give examples of green alley projects that target each.

#### Environmental

Green alleys, as implied by their name, have natural elements at the root of their design. Using innovative technologies and recycled materials, green alleys have the potential to provide a wide range of sustainable features. For one, green alleys have the potential to lower

temperatures in the surrounding area using high-albedo pavement and paint. Light colored, high-albedo pavements reflect sunlight and therefore retain less heat than commonly used asphalt. Green alleys can also recharge groundwater using permeable pavement, and redirect stormwater using native planting bioswales to avoid flash floods. Permeable pavement and bioswales allow stormwater to percolate through and recharge groundwater below. The inclusion of bioswales (vegetated channels with slightly sloped sides) provides space for native vegetation, wildlife and pollinator habitat, and stormwater management. Other environmentally friendly features often seen in green alleys are recycled materials used for seating and artwork and energy efficient lighting for safety (Attarian, 2010).

The City of Chicago provides a great example of utilizing green alleys for environmental benefit. Chicago was facing flooding issues due to a lack of proper stormwater management within its extensive impermeable alley network. The City of Chicago decided to convert their existing alley network into a green alley network with specific emphasis on stormwater infiltration and flooding abatement (Lindt, Callahan, DeShazo, & Bieber, 2015). It is important to note that Chicago maintained existing uses of ingress and egress and access for service providers such as waste collectors while converting asphalt to permeable pavers and incorporating storm water management. The conversion to green alleys was an affordable option for the City of Chicago that has provided endless benefits.

### Social

Another motivation for building green alleys is the social benefit. Green alley can be designed to create community gathering space with access to seating, shade, and safe recreational paths. Green alley design can transform unusable alleyways into functional space by prioritizing people over vehicles. When the local community is included in the planning process,

redesigning existing alleys provides a source of placemaking for the community to build the places they desire to have. Green alleys designed with a social focus allow residents additional space to make connections with each other through outdoor recreation and meeting areas. With trees planted along the path providing shade and, in some cases, prohibiting vehicle access on the path, green alleys provide a safe space to play, create, and explore with physical and mental benefits for the whole community.

The Boyle Height's Alley Reclamation Project is an alley conversion project with social benefit at the core of the design. Members of the Boyle Heights neighborhood recognized the lack of open space for children to play and the large amounts of underutilized alleyways nearby. By repaving the alleys, installing planters and beautifying the space, local residents were able to create a community gathering space for children and adults alike (Lindt, Callahan, DeShazo, & Bieber, 2015).

### Economic

Finally, when designed in strategic locations near commercial strips, green alleys can generate economic activity. Cleaning up unattractive alleys to make them pedestrian friendly can link previously disconnected businesses. Green alleys also have the ability to revitalize struggling commercial districts by increasing a business' usable space. Especially during 2020 and the time of COVID-19, restaurants and vendors being able to provide outdoor entertainment space in previously underutilized alleyways promotes economic vitality.

The East Cahuenga Cosmo Pedestrian Alley project is a great example of a green alley with major economic benefits (Newell, Seymour, Yee, Renteria, Longcore, Wolch, & Shishkovsky, 2012). The project, located near Hollywood Boulevard, utilized an alley's proximity to restaurants and stores to create a pedestrian-friendly path and seating area. The new

design allows for outdoor dining that has boosted local business and drawn in additional customers.

## **Methodology**

My main research question was what does the existing alley network in Pacoima look like? I considered features such as location, size and typology in order to determine where alleys are located (residential vs. commercial), how many linear miles of alleys exist in Pacoima, and what alleyways are being used for. I also considered the potential to make the existing network of alleys into a green alley network and the potential to make connections to Bradley Avenue Plaza and Green Alley. By providing a map of Pacoima's alley network, I was able to identify the extent of Pacoima's existing alley network and make some initial recommendations for potential areas ideal for greening.

I identified alleys using satellite images on Google Earth. I marked anything that looked like a narrow passageway between properties or buildings using both overhead view and street view. In some cases, there were private paths that looked like alleys; however, I did not include anything with a gate blocking public access or a sidewalk on either side.

## **Findings**

Pacoima has 79 alley segments equaling approximately 7.4 linear miles of alleys. Each alley is 16.4 feet wide, amounting to a total of 588,825-square feet of alleys. The alleys are, for the most part, randomly located throughout the city boundaries, except for a concentrated area of residential alleys near Bradley Avenue Plaza and Green Alley (See **Error! Reference source not found.** & **Error! Reference source not found.**). Approximately 3.35 miles of the total 7.4 linear miles of alleyway exist within  $\frac{1}{3}$  of a mile from Bradley Plaza. I found that approximately 80% of alleys are within residential areas, meaning

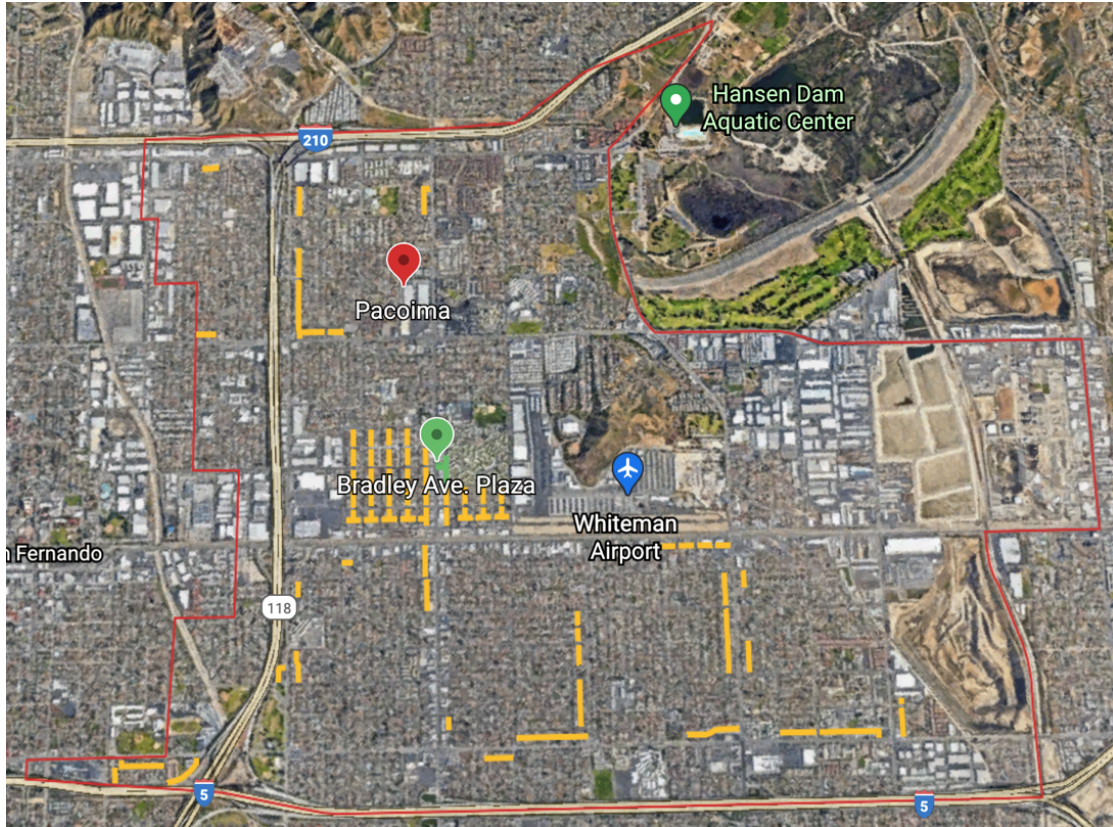


Figure 1: Pacoima Alley Network Map.  
 Alleys are shown in yellow. Pacoima Boundary is shown in red.

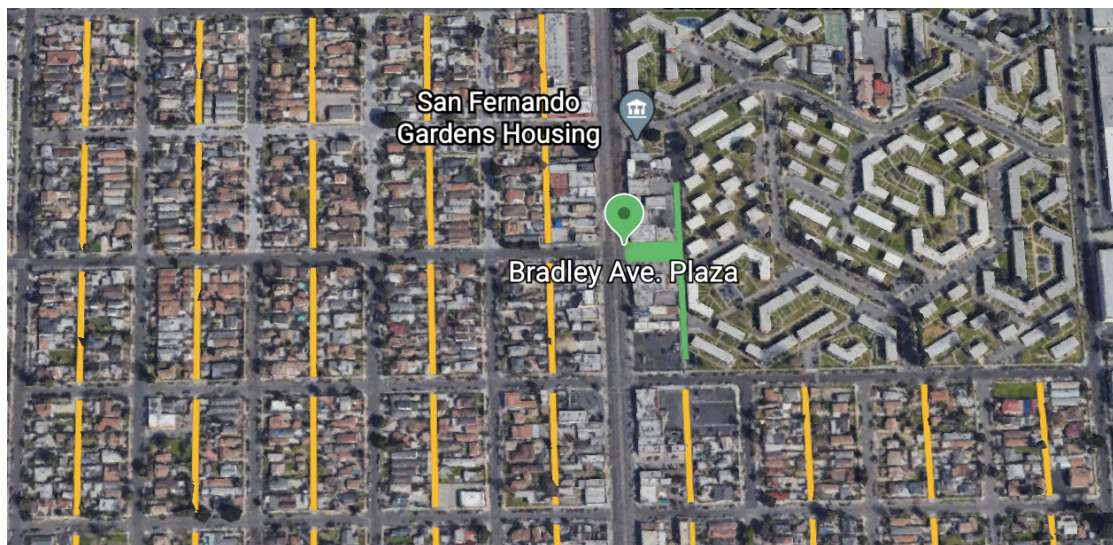


Figure 1: Concentrated Alley Network near Bradley Avenue Plaza and Green Alley. Alleys are shown in yellow.



there are homes or apartment buildings on either side. I found that 19% of alleys had homes on one side and commercial businesses on the other side. Lastly, I found 1% of alleys to be located in solely commercial areas, having commercial buildings or business parking on either side.

All the alleys appear to be covered with asphalt, most having a small drainage line in the middle (see Figure 2). In terms of use, it appears that alleys in Pacoima are mainly used to access back parking of residential properties, for additional parking or for trash collection. Some alleys are well kept with trees and vegetation while others are scattered with litter, weeds, and old furniture.



*Figure 2: Street View of Pacoima Alley.*

With this amount of alley surface area, I wanted to determine the annual rainwater capture capacity Pacoima's alleys would have if they were permeable. According to Plum Creek Conservation District, 550 gallons of rainwater can be collected for every 1000 square feet of collection surface per inch of rain (Rainwater). To estimate amount collected in one year, I took the square footage of Pacoima's alley network (588,825 square feet), divided by 1000, multiplied by 550 and then multiply by the average annual rainfall for Pacoima (1.78 inches). The total

surface area of alleys in Pacoima, if converted to permeable pavers, allows for 576,460 gallons annual rainwater capture capacity.

It is essential for cities and neighborhoods to start designing for adaptation, Pacoima being no exception. With a better understanding of Pacoima's existing alley infrastructure, I believe converting alleyways into green alleys, focusing on environmental benefits specifically, is the most promising implementation. Green alleys are an innovative tool that Pacoima can use to combat its vulnerability to climate change. With increasing susceptibility to heat and drought, the community of Pacoima can benefit from the cooling effects and permeable pavement that green alleys provide.

### **Limitations**

I do want to acknowledge the limitations to my methodology. Due to human error when one person uses a satellite image to identify any built environment characteristic, I could have missed some alleys or misrepresented an alleyway. I also want to note that the satellite imagery is outdated. For example, the street view of Bradley Avenue Plaza and Green Alley shows an undeveloped alleyway with asphalt, not the welcoming, eco-friendly community space that exists today. Furthermore, it is difficult to assess areas that would be best suited for greening without visiting the site or speaking with the community.

### **Recommendations and Future Research**

I originally hoped to develop a green alley network plan that prioritized people over vehicles. However, the way in which Pacoima's alleys are currently functioning shows a need to maintain vehicle access on these pathways in order to maintain access to residential properties and access for service providers such as waste collectors. Future green alley plans in Pacoima

should target the alleys near Bradley Plaza and focus on environmental features such as converting asphalt to light-colored, impervious pavers for cooling effect, flood abatement and replenishing groundwater. The green alleys I propose won't have the multipurpose use that the Bradley Ave Green Alley and Plaza has, however we can learn from Bradley Avenue's example as a green alley that successfully and safely allows both pedestrians and vehicles.

Going forward, it will be important to understand community perception of alleyways in order to design alleys that focus on safety and walkability. Are they perceived to be relatively safe and walkable or do people avoid them? There is also additional research needed to fully understand how the alleys are currently being used. From satellite images, we can see the alleys are used for trash collection, garage/property access, and parking. Do young residents use this space to play sports like soccer? With community input and sustainable design features, the concentrated alley network near Bradley Plaza has great potential to become a green alley network.

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## Appendix

Link to Interactive Google Earth Pacoima Alley Network Map:

<https://earth.google.com/earth/d/1Bo7igHWRM7LhyfsRdDx9kzBcgC5vZM1P?usp=sharing>

UNIVERSITY OF CALIFORNIA

Los Angeles

Unpermitted ADUs in Pacoima:  
Recommendation of Legislation and Permitting Processes

A White Paper submitted in partial satisfaction of the  
requirements for the degree Master of Urban and Regional Planning

By

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2021

## **Introduction**

The neighborhood of Pacoima continues to battle a housing dilemma that results in the construction of unpermitted housing units. Accessory Dwelling Units (ADUs) have made it possible for these unpermitted structures to become legal as they are subject to similar Planning standards. In reality, attempts to legalize existing unpermitted ADUs ultimately result in the demolition of the unit and the displacement of the tenants as they do not meet the restrictive Planning and Building codes. Thus, this paper analyses the existing legislation surrounding unpermitted ADUs. Through the use of case studies and academic journal articles, I examine amnesty and legalization programs local cities and counties in CA have used to address the unpermitted ADU dilemma. In critiquing these programs, I look to answer what type of amendments or changes to the existing legislation need to be adopted in order to ensure these structures are permitted without little to no risk of demolition or displacement? Finally, I provide specific policy recommendations that the city of Los Angeles needs to adopt in order to assist Pacoima residents in legalizing their structures without fear of displacement.

## **Background**

The Pacoima neighborhood is located within the San Fernando Valley region in the city of Los Angeles. The neighborhood is characterized as a dense suburban community with a population predominantly of minority backgrounds. Pacoima Beautiful, a grassroots non-profit organization that focuses on community development within the region, received the Transformative Climate Communities (TCC) grant that is geared to fund green infrastructure projects. In 2019, Pacoima Beautiful partnered with UCLA's Urban and Regional Planning program to perform extensive research on the region in order to understand the ongoing issues Pacoima residents face as well as to inform policies and programs best used for the TCC grant.

The final report, “A Casita Community: Fighting Displacement in Pacoima with ADUs and CLTs” discusses the existing precarious housing situation within the Pacoima community and how green infrastructure improvements can potentially result in the displacement of residents. Ultimately, this study will go hand in hand with the 2019 Comprehensive Research Report in analyzing Pacoima’s unpermitted ADUs and anti-displacement measures.

### **Research Methods**

This analysis relies predominantly on secondary data and literature. The 2019 “A Casita Community” serves as the foundation for this report; the data analysis used in the initial report will be further reviewed for insight to Pacoima’s housing situation. Academic journal articles will be used to further understand the development and use of unpermitted ADUs. Furthermore, the following cities were used as case studies to examine possible legalization and amnesty programs: Los Angeles, San Jose, San Mateo County, Santa Cruz and West Hollywood. Finally, I will use my professional experience as a city planner for the City of Gardena to draw further insights related to reviewing unpermitted ADUs.

### **Unpermitted ADUs**

ADUs have always existed throughout urban history and in various forms. From granny flats and guest houses to converted garages, these structures exemplified a need for additional residential space (Mukhija and Loukaitou-Sideris, 2014). Traditional Euclidean zoning limited the construction and use of these structures as Single-Family residential zones simply did not allow them; and if they did, they were very limited in terms of size, amenities and rental capacity (Liebig et al, 2006).

Unpermitted housing units and additions to the existing residential home came as a result of such strict zoning (Nick-Kearney, 2019). In addition to the financial burdens associated with



home additions and permits, homeowners simply needed the additional space, but either weren't allowed to build or the cost to build was too high (Salvador, 2020). It is because ADU's were being built illegally that the concern for tenant safety fueled legislators to put forth legislation that will allow constituents to build them by-right and correctly (Ramsey-Musolf, 2018).

In 2016, the state of CA enacted various laws that mandated all cities and counties to adopt ordinances allowing ADUs. Initially, a single ADU was allowed on properties zoned for residential and where there was only one existing unit on the site (Garcia, 2017). Several amendments to the bills have since been made in which ADU's are practically allowed on any site zoned for residential regardless of the number of units on a property. An ADU and a Junior ADU can also be built without having to provide any additional off-street parking if located within a ½ mile of a transit stop. Since these laws came into effect, California has seen a major increase in permits for ADUs as they tend to be low cost and "naturally affordable".

While ADUs can be a viable method to providing additional housing, the primary issue is that unpermitted ADUs already exists. Many of these structures do not meet the necessary development standards set forth by the Planning department or the state mandated building codes (Brown et. al., 2020). These rigorous codes serve as barriers that prohibit such structures from being permitted. Property owners and tenants must either make vast improvements to the structures to bring them into compliance or they must demolish the structures overall (Palmeri, 2014). In low-income neighborhoods like Pacoima, many owners and tenants do not have the financial capability to bring these structures into compliance and must then demolish them anyway (Chapple et. Al., 2017). This results in the displacement of the tenants, a loss of essential residential space as well as the loss of additional income for property owners, if such units were being rent out.

## **Amnesty and Legalization**

There are cities and counties that understand the need for these unpermitted ADU's despite the dilemma in bringing them into compliance. Specifically, in the state of California, the city of Los Angeles, San Jose, San Mateo county, Santa Cruz county and West Hollywood, have all adopted measures to potentially permit these structures while acknowledging limits in Planning and Building code.

### Public Benefits Projects – Los Angeles

The city of Los Angeles provides a form of amnesty to existing non-permitted dwelling units; however, this only applies to units within multi-family buildings, in zones that allow multi-family uses (City of Los Angeles, 2017). Thus, unpermitted ADUs located in single family zones would not be eligible for amnesty; instead, they will need to abide to the ADU conversion standards. Units that are eligible must also meet the following standards: must have been rented out/occupied any time between December 11, 2010 and December 10, 2015; there is at least one additional restricted affordable unit on site; the number of dwelling units shall not exceed 35% increase of the maximum allowed; parking is provided on the basis of recalculating all units in the project or by half a space per unit if located within a major transit stop.

### ADU Amnesty Program – San Jose

The city of San Jose allows amnesty for eligible units up until January 2022 (City of San Jose, 2020). In order to qualify, the unpermitted ADU must have been built prior to 2019, is currently occupied and there is no existing building permit to legalize it. Benefits include waiving illegal construction penalty fees, plan check and inspection fee waivers as well as business tax exemptions for owners. Once an initial inspection is conducted, owners are required to complete the legalization process. Per CA Bill AB 68 and AB 881, there is a five-year period in which the owner is not subject to any enforcement in bringing the unit into compliance.

*ADU Amnesty: Health & Safety Certification Program – Santa Mateo County*

This program was made available for a three-year period between October 2018 to October 2021 (County of San Mateo, 2019). In order for residents to be eligible for consideration, they need to meet the following: the unpermitted ADU was built prior to 2017; must be currently or had previously been occupied by a resident (proof needed); the property needs to be zoned residential and outside of the County's Coastal zone. Applicants are required to complete a self-assessment and pre-intake consultation prior to health inspections and application submittal. Applicants can withdraw from the program even after a health inspection; however, if the inspection highlights clear health and safety hazards then the property is subject to compliance. Benefits for participating in the program include: waiver of fees and penalties for unpermitted construction; reduction or waiver of planning, building and other fees; as well as alternative feasible standards.

*Safe Structures Program – Santa Cruz County*

Santa Cruz County offers a limited amnesty program in which unpermitted ADUs can become health certified and be deemed as a low priority for Code Enforcement officials (Santa Cruz County, 2018). This means that properties with a certified unpermitted ADU is subject to future inspections and re-certifications and must continue to prove acceptable conditions of living. To be eligible for this program the structure must have had been built prior to January 2014 and it has been determined that it cannot fully meet current building code standards. Benefits for residents if they pursue this program include limited immunity certification in which Code Enforcement will classify such structures and associated complaints as low priority; landlords that rent out such units are not subject to the three-month tenant relocation assistance penalty; waiver of Code Enforcement penalty fees as well as certain permit and impact fees.

Applicants can also choose to withdraw their application at any point in which Code Enforcement will not follow up unless there is clear and evident health hazards.

#### *Legalization of Illegal Units – West Hollywood*

The city of West Hollywood has adopted zone amendments that continuously allow “illegal” units to pursue legalization (City of West Hollywood, 2019). To qualify for legalization, the unpermitted ADU must have been built and used as a separate dwelling unit prior to January 2000. Any unit that was required to convert to its original use after January 2000 as part of Code Enforcement requirements is also eligible to apply. The structures must also meet the following Planning and Building requirements: the existing unit can be located within the required setback, however, no further expansion is allowed; only one unpermitted ADU is allowed on properties zoned R1 and R2; and, on properties with five and more units, the structures must not interfere or remove any parking area as required. This review follows the typical permitting process in which the Building department will determine if the unit is physically feasible to meet code. Fees are also based on the scope of work.

#### *Recommendation of ADU Amnesty in Pacoima*

The case studies above highlight municipal governments understanding of the importance unpermitted ADUs have for residents as well as the overall housing supply. While the intent and goals of these programs are to provide a possible solution for homeowners, there are still many barriers that limit the full capability and opportunity these programs can provide. In order to maximize the potential assistance these programs can provide while minimizing any risks, below are the direct policy amendments I recommend.

#### *Eligibility: If it Exists, its Eligible*

As discussed in the case studies above, there were specific guidelines that enabled some unpermitted ADU’s to qualify than others. The units either had to have been built before a certain date or rented out between a certain period. I recommend that if the unit is a habitable

structure and it currently exists, then it is eligible for amnesty. Furthermore, there is no deadline in which the amnesty program is available for; it is a continuous process. This ensures that any property with an unpermitted ADU is eligible for amnesty at any given time. This will benefit Pacoima residents as there is no pressure in deciding if they do or do not want to participate, they'll always have the option to do so.

#### *Building Feasibility Supersedes Planning Standards*

Planning standards are designed to maintain aesthetic quality throughout the various zones. The ongoing construction of unpermitted ADUs emphasizes the need for housing rather than the importance of where buildings are located or how many off-street parking spaces are provided. Thus, I recommend that there shall not be any setback or parking requirements when reviewing unpermitted ADUs. Density requirements are still needed as there shouldn't be an overwhelming number of units on a lot as it must be consistent with the scope of the neighborhood. More so, unpermitted ADUs shall be reviewed solely on building feasibility at the most basic health and safety standards. The City of Santa Cruz focuses on a structure's foundation, lateral loads as well as roof and rafters (City of Santa Cruz, 2019). Further inspection of building code and discussions with Building and Safety departments are needed in order to determine what exact codes are applicable; nonetheless, we know that they can be reduced to a minimum and in turn, this would further reduce the risk demolishing the units.

#### *Fee Waivers and Financial Support*

The waiving of fees were common in the San Mateo, San Jose and Santa Cruz programs. From penalties to permit costs and inspections, these municipalities understand that the permitting process is costly and that individuals do not have the financial means to pay for them. Thus, I recommend that Los Angeles adopt a similar process that waives any and all fees. I also recommend that the City sets aside a budget for low-income applicants to apply for and

receive low interest loans or grants. This will assist Pacoima residents who are predominantly low-income and do not have the financial support to bring their structures into compliance.

*No Penalty for Withdrawals*

One of the major issues any amnesty program will continuously face is simply convincing residents to apply. For residents to come out and say that they have an unpermitted ADU is difficult due to the risks associated with it. Fear of fines and penalties as well as fear of having to demolish and displace any residents is what ultimately prevents individuals from taking advantage of such programs. The aforementioned recommendations are set to persuade individuals that this is a very affordable project and that there is very a little chance the unit will not be approved. In any event, similar to San Mateo county and Santa Cruz county, I recommend that a withdrawal option be available for residents. If residents, at some point, choose to not proceed with the program then they are not required to do so nor will any of the information collected be withheld, unless there is a very clear and prominent life threatening situation that must be addressed as soon as possible.

**Final Recommendations and Further Research**

In order for an amnesty program to be successful, there needs to be clear communication between local officials and residents. Cities and counties need to be proactive in informing residents of this program rather than assume they know how to find such information. Constituents are not familiar with reading and interpreting legislative ordinances and zoning codes. In addition, not every constituent is a developer. Thus, a public-constituent relationship needs to be adopted when residents apply for amnesty programs. Assisting residents in finding a licensed architect and contractor as well as understanding building codes and construction plans etc. can ensure applicants are also proactive in this process.

Further research is needed to determine how effective these programs actually are. Are residents applying for amnesty and what was their experience like? Furthermore, a neighborhood level parking study for Pacoima is needed in order to determine if residents are using off-street parking or if they are already parking on the public street. Finally, what are other measures cities and counties have used to reduce the need for unpermitted construction. ADUs are considered a method in reducing the creation of unpermitted units; however, they too are considered difficult and costly to do.

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**UNIVERSITY OF CALIFORNIA**

**Los Angeles**

**Alternative Homeownership Strategies in Pacoima:**

**Exploring The Separate Sale of ADUs with Tenants in Common (TIC)**

A white paper submitted in partial satisfaction  
of the requirements for the degree Master of Urban and Regional Planning

By

Alejandro Gonzalez

2021

## **ABSTRACT**

### **Alternative Homeownership Strategies in Pacoima:**

#### **Exploring The Separate Sale of ADUs**

#### **with Tenants in Common (TIC)**

Effective January 1, 2020, Assembly Bill 587 (Stats. 2019, ch. 657) added section 65852.26 to the Government Code to allow a local agency to enact an ordinance that would allow an accessory dwelling unit (ADU) to be sold or conveyed separately from the primary residence to a qualified buyer under certain circumstances. This Assembly Bill requires the ADU to be built or developed by a qualified nonprofit corporation that has received a welfare exemption for properties intended to be sold to low-income families who participate in a special no-interest loan program and requires the property to be held pursuant to a recorded tenancy in common (TIC) agreement. Given the opportunities to create a new homeownership model with ADUs and TICs because of this Assembly Bill, this white paper will explore how to increase the

capacity for the anti-displacement strategies being pursued by Pacoima Beautiful and the broader Transformative Climate Communities (TCC) project team to increase the community control of land in Pacoima. This white paper outlines the role that TICs play as a housing strategy in the State of California and the City of Los Angeles and present the current status of TICs as an ownership and financing model to create homeownership opportunities. TICs have a negative history in Los Angeles, as they have been linked to the direct displacement of tenants from rent-stabilized units in the City. This paper questions if this negative connection between TICs and displacement can be reversed with the introduction of Assembly Bill 587. Given that AB 587 is very recent, further research is needed to explore what nonprofits are currently eligible in Los Angeles to meet the requirements of this bill to develop ADUs and sell units affordably. Future opportunities can explore how Habitat for Humanity of Los Angeles can work in partnership with Pacoima Beautiful and the project team to create an ADU development program to sell income-qualified units in the Pacoima community via TIC agreements. Initially, to finance TICs, buyers had to get a group loan together and if one person defaulted, then everyone else did as well; and if one person wanted to sell, they needed permission to sell their loan<sup>1</sup>. Now it is possible to finance through fractional loans, which allow each owner to get a loan individually, to get a fractional loan, and have each individual loan holder liable for foreclosure on an independent basis. TICs are still new in Los Angeles and originate from common practice in San Francisco, however TICs have been popular recently in quickly gentrifying communities like Echo Park and Rampart Village, as seen on the Rental Girl TIC listings website that promotes

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<sup>1</sup> <https://labusinessjournal.com/news/2020/jul/27/tic-deals-affordable-alternative-condos-popular/>

these regularly.<sup>2</sup> Although the Rental Girl agency utilizes TICs in a different way than the project team intends to, the project team can learn from its developed infrastructure.

### **Keywords**

*Tenants In Common (TICS), Assembly Bill 587, Accessory Dwelling Units (ADUs), fractional loans*

### **Introduction**

Pacoima is a neighborhood in the San Fernando Valley within the City of Los Angeles that is composed primarily of single-family zoned housing. Pacoima is also uniquely positioned as one of the few neighborhoods that is both working class and a majority homeowner neighborhood. Due to the City of Los Angeles' history of housing discrimination and redlining, Pacoima became one of the few neighborhoods in the City for those who were unable to live and purchase property elsewhere in the City. Pacoima was specifically targeted to those who were discriminated against elsewhere and had a history of promoting homeownership opportunities. In particular, land developers lured African Americans to this neighborhood by naming a housing tract after world heavyweight boxer Joe Louis, creating a Black middle-class community unlike elsewhere in the country (Pacoima Historical Society). Pacoima is therefore a product of redlining, whereby banks refused home loans and mortgages within specific geographic areas that has now resulted in segregation where communities are composed primarily of people of

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<sup>2</sup> <https://therentalgirl.com/tic-for-sale>

color, and other communities being primarily white (Climates of Inequality, Environmental Injustice in Pacoima).

The effects of this housing segregation have resulted in Pacoima becoming a neighborhood that is composed primarily of single-family housing and that is also owned by low-income and working-class families. Pacoima represents a community with a history of resilience and this continues today as community members continue to maintain community control over the neighborhood through property ownership. Furthermore, the neighborhood has created housing opportunities – both formally and informally – to find creative methods for its community members to remain in the area. Property ownership retention has remained the primary method by which community members in Pacoima have been able to avoid displacement from the neighborhood. In order to ensure that community members are able to continue to remain in their neighborhood as a result of incoming investment, they must continue to increase their control of land as a displacement avoidance measure (LA Metro, East San Fernando Light Rail Transit Project). One method that has not been explored as an anti-displacement tool is tenants in common, or tenancy in common (TIC), whereby two or more people hold the title to a property, typically a multi-unit building, a home that's been subdivided, or a bungalow court (Sirkin Law, Tenancy In Common (TIC) — An Introduction).

### **Accessory Dwelling Units and Tenants in Common**

Given Pacoima's land use and zoning designation as primarily single-family, an opportunity exists to increase housing capacity in a way that can benefit property owners to maximize their land value and increase opportunities to homeownership for others while still maintaining the character and scale of the single-family neighborhood as outlined in the current

community plan, last updated in 1996 (Los Angeles City Planning Department, *Arleta-Pacoima Community Plan*). Although some existing properties in the Pacoima neighborhood already contain accessory dwelling units (ADUs) that have been built without permits (Becky Nicolaides, *From Resourceful to Illegal*), this paper will only focus on opportunities for future ADU development, given the recent modifications to ADU laws in the State of California that allow up to three units on a single lot and that and permit the sale of an ADU under specific conditions via Assembly Bill 587 (California Legislative). The recent passing of this bill presents an opportunity for a nonprofit organization to develop ADUs in Pacoima and sell them affordably to create homeownership opportunities in the community.

This white paper identifies Tenants in Common, tenancy in common, or “TICs” as a method that can be used by Pacoima Beautiful and the larger collaborative Transformative Climate Communities (TCC) project team to support its anti-displacement plan. The goal with exploring the use of TICs is to increase the project team’s capacity and set forth a framework to inform and possibly increase community control of land in the Pacoima neighborhood as an anti-displacement measure through newly created homeownership opportunities as a viable and legal method. Through the ownership and financing method known as TIC, prospective property owners are able to purchase a building together in the community and retain partial ownership. TICs can be a possible property ownership pathway to support the purchase of single-family homes and multifamily properties in the community to support the project team’s mission to mitigate displacement. A recent legislative update with ADU bills in California that came into effect in January 2020 and January 2021 has the potential to provide the project team with the authority to create more housing opportunities in Pacoima utilizing TICs.



### Tenants in Common (TICs)

This paper will explore a financing and ownership mechanism known as Tenants in Common, tenancy in common, or “TICs,” that are primarily used to purchase property through a collective process. A TIC is a shared form of ownership with one or more co-tenants whereby co-tenants share one piece of property and are jointly liable for all property-related liabilities, such as property taxes, and typically a shared mortgage (Grove 2019). In a TIC arrangement, two or more people share ownership rights in a property or parcel of land that can be either commercial or residential. The TIC ownership model was developed in the 1980s by attorney Andy Sirkin, who wrote the first TIC agreement in San Francisco to purchase a four-unit Victorian together with his friends that allowed each to live in one separate unit. This purchase was financed via a group loan, but other financing products have developed since, though options continue to be limited (The Rental Girl 2019). This ownership model has since grown in popularity in the San Francisco Bay Area with the support of Andy Sirkin, and TICs have recently begun to be utilized in Los Angeles and spearheaded by the Rental Girl, a real estate brokerage firm, that has led various sales and the creation of various TIC communities throughout the City. Housing advocates have criticized the introduction of TICs to the real estate market in Los Angeles since all the TICs that have sold or are for sale in Los Angeles have been converted from older rent-controlled apartment buildings and bungalow courts, making it very likely that the Ellis Act was used to evict tenants from their units by providing them with cash payments. The Los Angeles Tenants’ Union, a tenants’ rights advocacy group, has protested outside The Rental Girl’s office on York Boulevard and built a website to document stories of renters who have been evicted or are facing eviction because of tenancy in common (Chandler 2019).

### Types of TICs

With TIC arrangements, two or more people own a fraction of the whole property and have their names on the deed to a parcel of real estate without giving each other “right of survivorship” (Sirkin Law). Having no right of survivorship means that in these arrangements, co-owners can own unequal percentages and can choose who will inherit their shares upon death, as opposed to ownership being automatically granted to the existing owners. TIC living arrangements are legally governed and enforced with a TIC agreement that acts as the contract used in lieu of an individual property deed to protect the owners of the property. In TIC arrangements, the interest of each co-owner is distinct and can be separately sold (Rental Girl 2019). The TIC agreement also outlines arrangements including how the property is divided, who has the right to use certain areas of the property, maintenance, monthly payment determinations, financial obligations, and other items including how to handle a death or a bankruptcy (Sterling Bank). According to Andy Sirkin’s firm, Sirkin Law, there are various types of TIC models that exist, including space-assignment co-ownerships (or SACOs), time-assignment co-ownerships (or TACOs), and equity sharing (Sirkin Law). SACOs are the most common type of TIC ownership, which mimic a condominium model by assigning particular houses, apartments, or rooms to each owner. TACOs mimic timeshares and are also referred to as fractional ownership arrangements, which assign usage times or intervals to each owner. With equity sharing, one or more owners get usage rights, and one or more other owners are purely investors. SACO TICs are most commonly formed for multi-unit residential properties such as apartment buildings, townhouses, and detached single-family residences located on the same lot.

### TICs and Condominiums

TICs are most like condominiums, or condos, but in a condo the portions of the property inside the apartment walls are owned by the individuals and the common areas are owned by the group. In contrast, with TICs, the entire property is owned by the group, and a written agreement outlines each TIC owner's rights and responsibilities. TIC and condo ownership rights are very similar with the operations and difficult to differentiate by looking at the building itself. In both ownership types, decisions are made with the owners, and both collect HOA dues to ensure maintenance and repairs for the common areas (Grove 2019). Using a four-unit building as an example, under a TIC agreement there would only be one deed for the property that outlines all of the co-owners, and each co-owner would own a percentage of the whole property but only have exclusive rights and use of one unit that is outlined in the agreement. In contrast to this TIC example, with a four-unit condo property, an owner would own everything within its unit walls and own 25% of the common areas outside of the individual units. Finally, the major difference between condos and TICs is the availability of financing that exists. Most home lenders will finance a condo and several options exist; however, there are a very limited number of financing options for TICs.

### TIC Financing

TICs have become more popular and practical in Los Angeles due to the recent existence of financing available in the region; options, however, still remain limited. The two primary ways to finance a TIC are through a fractional TIC loan or a group loan. As the name suggests, a group loan is a group effort where each co-owner makes a payment to the group and the group collectively pays the lender. If one co-owner fails to pay, then the entire group is at risk of

foreclosure. In contrast, fractional loans allow each owner within a TIC building to have their own loan that does not affect other co-owners, therefore allowing each co-owner to choose a different type of loan or a different lender than the other tenants. If one of the owners defaults on their fractional loan, the lender will only foreclose on their specific unit without impacting the other co-owners (Friedman 2021). National Cooperative Bank (NCB) and Sterling Bank and Trust are the two primary banks that offer fractional lending for TICs in Los Angeles.

Since there are very few lenders for TIC loans, underwriting guidelines are strict, and pricing has remained high for these products. Compared with condo buyers, TIC buyers pay roughly .75-1% higher interest, need at least 5% more down payment, and are also unable to get a 30-year fixed interest rate since there is no secondary market for TIC loans. These guidelines also make it harder for borrowers to qualify for a fractional loan, and marginally qualified TIC borrowers often cannot get a loan at all. (Sirkin Law) NCB offers a 3/1, 5/5, and 7/1 Adjustable-Rate Mortgage (ARM), with a minimum down payment of 20% (NCB TIC FAQ). Sterling Bank and Trust offers a 3/1, 5/1, 5/5, and 7/1 ARM, with a minimum down payment of 20% (Sterling Bank). TIC fractional loans are still offered as 30-year loans, but they are not fixed during the entire 30-year period as they are with traditional mortgage loans. For example, a TIC with a purchase price of \$899,000 and a down payment of 20% could have an initial rate of 3.5%, which after an initial fixed period would increase to 3.5% plus index (Madans 2020). For the Hayworth TIC community in West Hollywood, NCBs has the following financing guidelines: requirement of a 25% down payment, restricted to an owner-occupied applicant, and lending is not available to a potential borrower seeking to get a loan for a TIC as a second home or investment property (The Hayworth TIC). NCB also does not allow any co-signers or non-occupant co-borrowers to apply for financing.

Assembly Bill 587

The recent passing of AB 587 at the beginning of 2020 has made it possible to allow a tenancy in common sale to occur with accessory dwelling units under very strict conditions of affordability. This bill is not intended as a method for low-income community members to purchase single family housing as various homebuyer programs already exist, but instead to incentivize nonprofit developers like Habitat for Humanity to build more units as a means for homeownership opportunities via TICs. Existing law prohibits local ADU ordinances from allowing ADUs to be sold separately from the primary residence, therefore prohibiting shared ownership models that occur in California, including TICs. AB 587 creates an exemption to this existing prohibition and legalizes TIC sales when a nonprofit with a mission of selling units to low-income families builds the primary house and ADU, sells both the primary house and the ADU to low-income families, and requires that any subsequent sales also be made to low-income families. This bill intends to enable affordable housing organizations, such as Habitat for Humanity, to create ownership units for low-income families (California Legislative Information).

Given the land use and zoning in Pacoima, this bill presents an opportunity to develop more affordable homeownership opportunities to increase the community control of land in the neighborhood. A recorded TIC agreement will allocate to each qualified buyer “an undivided, unequal interest in the property based on the size of the dwelling each qualified buyer occupies,” will outline a repurchase option that requires the qualified buyer to first offer the qualified nonprofit corporation to buy the property if the buyer desires to sell the property, enforce an owner-occupancy requirement, have affordability restrictions on the sale of the property to

ensure the property will be preserved for low-income housing for 45 years for owner-occupied housing units, and will be sold or resold to a qualified buyer. To establish the units as separate single dwellings, ADUs will have a separate water, sewer, and electrical connection to utilities. The intent with exploring TICs is to further increase the capacity of the project team with strategies to increase community control through property ownership in Pacoima as an anti-displacement method by introducing a financing and ownership tool that will develop more neighborhood-scale development while also introducing a legal structure that creates a path to homeownership.

### **Further Research**

*This research is intended to be coupled with further research that will explore mechanisms to finance ADU construction and strategies to legalize unpermitted dwelling units. Given the updated ADU policies and financing tools introduced in January 2021, it will be necessary to provide an analysis of those updates and their accessibility to Pacoima property owners. TICs are a complicated ownership structure, so outreach and engagement will be crucial for community members to understand the complexities of this ownership model. Establishing a partnership with an affordable nonprofit homebuilder like Habitat for Humanity of Greater Los Angeles will be crucial, as they championed this assembly bill. This partnership will help inform the financing options available for interested TIC buyers to participate. Due to the limitations in TIC financing, further financing partnerships should be explored that fit the needs of low-income communities in Los Angeles. Genesis LA Economic Growth Corporation has a track record for investing in small-scale housing projects and can be a possible financing partner to expand TIC lending specific to low-income communities. A further analysis is also*

*needed to understand the possible integration with existing first-time homeownership programs, like those that currently exist for condo purchase that are offered by the Housing and Community Investment Department in Los Angeles (HCIDLA).*

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UNIVERSITY OF CALIFORNIA

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Social Housing and Its Potential in Pacoima

A white paper submitted in partial satisfaction  
of the requirements for the degree of  
Master of Urban and Regional Planning

by

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## **Introduction**

The United States is facing an affordable housing crisis. While this problem is more acute in regions like Los Angeles and New York City than others, it affects large swaths of the American public. Nationally, the production of new housing has been disproportionately focused on catering to a high-income market and rents have been increasing despite stagnating wages, forcing 47% of renters to spend more than one third of their income on housing (Gowan & Cooper, 2018, p. 6).

Pacoima is one of the many US communities acutely experiencing this crisis. In the 16 census tracts receiving a Transformative Climate Communities (TCC) grant, 62% of renters and 50% of homeowners with a mortgage are paying over one-third of their annual income on housing costs.

**Table 1. Households burdened by housing costs in Pacoima**

Census Tract	Percentage of renter households spending >30% of income on rent	Percentage of owner households with a mortgage spending >30% of income on owner costs
060371212.22	64%	58%
060374047.03	64%	58%
060371043.10	73%	47%
060371044.01	67%	40%
060371043.20	66%	32%
060371048.22	63%	35%
060371210.10	61%	51%
060372121.01	61%	47%
060371048.10	69%	67%
060371044.04	58%	57%
060374047.01	52%	77%
060371048.21	51%	46%
060371046.10	74%	53%
060371044.03	52%	48%
060371046.20	56%	44%
060371045.00	69%	47%
<b>Pacoima average:</b>	<b>62%</b>	<b>50%</b>

Source: US Census (2019)

With considerable investment expected to arrive in Pacoima in the coming years with the TCC grant and the subsequent threat of displacement it brings, it is more important than ever to consider a variety of policies to ensure ongoing housing affordability. One proposed solution to this crisis gaining extensive attention is social housing.

Social housing has been promoted by prominent national leaders, such as Representative Alexandria Ocasio-Cortez and campaigns like the National Homes Guarantee. In November 2019, Rep. Ocasio-Cortez introduced H.R. 5185, the “Green New Deal for Public Housing Act,” (Text - H.R.5185 - 116th Congress (2019-2020), 2019) which would establish housing as a human right, require resident

councils in most public housing projects, and set the foundation for the future construction of new public housing.

The national movement for social housing has also manifested within the Los Angeles political landscape. Los Angeles City Councilmember Mike Bonin adopted the Los Angeles iteration of the Homes Guarantee platform in Los Angeles. Bonin introduced a package of motions in February 2020 to address the affordable housing crisis (*Bonin Pushes “Homes Guarantee LA,”* 2020), including a motion to research other social housing models and explore potential funding sources. This motion was adopted in November 2020 (*20-0197 (CFMS)*, n.d.). It was further supported by a subsequent motion introduced during the COVID-19 crisis that would compel Mayor Garcetti to establish a publicly owned social housing program funded by federal funds (*20-0491 (CFMS)*, n.d.).

Given these conditions, this white paper attempts to explore two research questions: “what is social housing?” and “what could social housing look like in Pacoima?”

## **Defining social housing**

Despite incredible recent enthusiasm for social housing, it has lacked a consistent definition. In order to envision social housing and weigh its potential benefits for Pacoima, we need to understand what it offers. To do this, we must first explore “social housing” in the context from which the conversation in the United States frequently references — the European model. Even in Europe, however, the term social housing encompasses a variety of affordable housing models with different management structures, ownership, and goals.

According to a recent review and synthesis of the many descriptions and definitions of social housing in the European context (Granath Hansson & Lundgren, 2019, p. 156), social housing describes several dimensions of housing policy — the target group, tenure, provider/owner, subsidies, and public intervention. A summary of the major features and descriptions of these dimensions are listed in Table 2. This summary shows that social housing, even in practice, often has overlapping and conflicting definitions.

**Table 2. Dimensions of social housing in Europe**

Social Housing in Europe	
Target group	<ul style="list-style-type: none"> <li>● Most identify vulnerable households as their target, including:               <ul style="list-style-type: none"> <li>○ Low-income households</li> <li>○ Households that face difficulties finding housing on the private market</li> <li>○ Homeless or those vulnerable to homelessness</li> </ul> </li> <li>● Several definitions and countries instead adopt the position that it is “mass housing” — housing for anyone and everyone</li> </ul>
Tenure	<ul style="list-style-type: none"> <li>● Rental</li> <li>● Shared ownership/cooperative</li> <li>● “Accession” to ownership — tenant eventually given option to buy</li> </ul>
Provider/owner	<ul style="list-style-type: none"> <li>● Central government</li> <li>● Municipal government</li> <li>● Nonprofit organization</li> <li>● Private for-profit company (i.e. tenant association)</li> </ul>
Subsidies	<ul style="list-style-type: none"> <li>● Most definitions describe affordable or below-market rents funded through:               <ul style="list-style-type: none"> <li>○ Public subsidy</li> <li>○ Private funding (i.e. debt financing from banks)</li> <li>○ Zoning and/or tax incentives</li> </ul> </li> </ul>
Public Intervention	<ul style="list-style-type: none"> <li>● Most definitions include some degree of public intervention through:               <ul style="list-style-type: none"> <li>○ Regulation</li> <li>○ Subsidies</li> <li>○ Provision through public entities</li> </ul> </li> </ul>

Depending on the location, social housing in Europe can refer to municipally owned or privately owned housing, offer rents that are at or below market rent, or target middle-income households or vulnerable households. Given these varied and conflicting descriptions, it is useful to look at a handful of case studies of social housing models in practice in greater detail. Below, we will look at three models that may be most relevant to housing low-income households vulnerable to displacement in Pacoima: Vienna, Finland, and England.

### **Vienna**

In Vienna, Austria, 48% of housing stock is considered social housing and 26% of overall housing stock is publicly owned (Reinprecht, 2014, pp. 35–36). These are among the highest rates in

Europe. Vienna adopts a “mass housing” philosophy — social housing is meant to serve any and all residents rather than just those who are low-income. While there are income eligibility requirements for municipal- and private-owned social housing, they are high enough to encompass 80-90% of the population. As a result, 19% of Austrian citizens and 21% of non-citizens reside in some form of social housing (Reinprecht, 2014, pp. 39–40). Additionally, while there is not necessarily a priority for low-income households, extremely vulnerable households like those facing imminent homelessness are granted emergency dwellings from the municipal stock.

Social housing in Vienna, and Austria overall, is funded through multiple government subsidies. The largest subsidies are construction and maintenance subsidies, which make up 70% of the value of subsidies. The rest of the subsidies are comprised of individual tax subsidies for low-income households and tax incentives (Reinprecht, 2014, pp. 37–38). Rents at social housing projects are determined based on the cost of construction and maintenance, not profit. As such, rents are able to be offered at lower cost. Low-income households may also be eligible for welfare benefits, including rent benefits, to help them pay for rent and household necessities. The sum effect of these policies means that while the social housing system in Vienna does not specifically target low-income households, various government subsidies and benefits make it accessible to nearly all residents.

## **Finland**

Finland does not have a notably large social housing program compared to other European countries. However, they have focused many of their housing efforts around homelessness-reduction by adopting the “Housing First” approach. In this model, the most vulnerable households, represented as unhoused households, are supported primarily through access to their own unconditional, permanent housing (Pleace, 2016). This has allowed Finland to become the only European country to successfully reduce their unhoused population in recent years (*A Home of Your Own*, 2017, pp. 10–11).

This form of social housing is primarily supported through construction loans and subsidies granted by the Housing and Finance Development Centre of Finland (ARA). In addition, properties are typically built on municipal-owned land and leased to a developer at subsidized rates (Gowan & Cooper,

2018, pp. 19–20). While rents are calculated based on cost, not profit, households that cannot afford the rent can apply for social benefits. Finland’s social housing model, then, can be looked at as a model for how to target and support the most vulnerable of households.

## **England**

At its height in 1979, social housing in England housed 31% of the population. By 2005, that share had fallen to 18% (Whitehead, 2014, p. 54). While originally intended more as “mass housing” for any and all of the public, social housing operates today as “residual housing” targeted towards the most vulnerable households. This means that many of the resident households are senior, unemployed, and/or low-income.

Many of these dwelling units, at one point municipally owned, have since transferred ownership to private, nonprofit housing associations. Of those units not transferred to housing associations, many were instead offered to existing tenants for purchase. Moreover, rents are set locally, based on a percentage of the median local wage, and are primarily paid for through debt financing from private banks. Government subsidies cover the remaining amount between debt financing and expected rent income, though a shift to more fiscally conservative policy in recent decades has made competition for subsidies high and the subsidies themselves smaller.

## **Social housing in the United States**

Discussion up to this point has only considered what social housing has looked like and meant in the European context. When translated across the Atlantic and applied to the US context, we must note how it is used differently and how it overlaps with existing US affordable housing models, such as community land trusts and public housing. Within the US, social housing is frequently described as,

*“rental housing provided below market rates...Social housing is permanently off the private market: in some cases, it can be owned and operated by municipal governments or nonprofit housing providers. In other cases, as with limited-equity cooperatives, land trusts or mutual*



*housing associations, residents may own a stake in their homes at subsidized rates, and they cannot sell them for exorbitant profit.” (Cohen et al., 2019)*

In contrast to some European models, the US-specific social housing model typically stresses its public or nonprofit ownership. More often than not, it is also frequently described as “mass housing,” accessible for large portions of the population and involving some degree of federal and state subsidy. These subsidies may take the form of outright public ownership and provision, individual rent subsidies paid to the housing provider, or subsidies awarded through favorable interest rates or below-market leased public land. Beyond these ownership and affordability guidelines, social housing in the US is also often imagined to be a highly participatory housing model that facilitates resident-led decision-making. A frequent feature of social housing proposals are resident councils or other forms of democratic resident participation. These councils can be given the responsibility of making impactful decisions for residents, such as establishing rent rates and deciding on improvements for the project.

Proponents of social housing also distinguish it from existing affordable housing models in the US. Unlike public housing, social housing is not necessarily publicly owned and provided, though it is frequently described as such. Moreover, public housing in practice today is only made available to the poorest of families in the US because of its limited availability and means-tested eligibility requirements. In contrast, the original European context of social housing is not exclusively limited to extremely low-income households. In countries such as Denmark, Finland, Sweden, and England, social housing has historically been described as housing meant to house any and all residents regardless of income. There is nothing inherently undesirable about public housing as implemented in the US that only houses low-income households and we should be wary of critiques of public housing that are based on the notion of “deconcentrating poverty,” as these critiques often encourage the demolition or privatization of public housing instead of reinvestment. However, public housing has become politically poisoned because of its past perceived failures. Public housing projects like Pruitt Igoe and Cabrini Green, panned for their high crime rates credited to a concentration of poverty (rather than disrepair and neglect resulting from insufficient federal funding), became the faces of the public housing model in the US (Bristol, 1991).

Social housing is also distinct from community land trust-managed affordable housing, although there are many areas of overlap. In some cases, CLT affordable housing could be described as a form of social housing. Like social housing, CLTs can also provide affordable housing on publicly or cooperatively owned land. However, not all CLTs are dedicated to providing affordable housing, as some also manage commercial, institutional, or agricultural land. Moreover, CLT management is distinguished by its multiple community stakeholder structure, a feature that is unique to the CLT structure. Additionally, instead of being posed as contrasts to social housing proposals, CLTs are often viewed as complements. Many proponents suggest that potential social housing projects could be owned and maintained by CLTs for their ability to maintain long-term affordability and community control.

For further analysis, a summary and comparison of US affordable housing models, including social housing, are listed in Table 3.

**Table 3. Comparison of US Affordable Housing Rental Models**

Type	Providers	Financing	Target population	Other features
Social housing	Federal/state gov., nonprofit developers, CLTs, private tenant associations	Publicly owned, state subsidy	Varies, all households or most vulnerable households (i.e. low-income, senior, etc.)	Often includes extensive tenant participation
Public housing	Federal/state gov., nonprofit property management	Publicly owned, state subsidy	Low-income households	Have historically negative associations, and have been repeatedly underfunded
CLT	Community- or cooperative-owned	Private funding (i.e. debt financing, donations), state subsidy	Varies, but often low-income households or other vulnerable households	Include more than just residential properties; Requires extensive resident and community participation
LIHTC, inclusionary zoning	Nonprofit, private landlord	Private funding, state subsidy	Income-eligible low-income households, other vulnerable households	Are generally not permanently affordable as their affordability requirements eventually expire
Section 8	Private landlord, nonprofit	State subsidy	Low-income households	Representative of modern push for public-private housing solutions

### **Is social housing right for Pacoima?**

Social housing, likely in part due to its recent introduction and lack of history, has a much more expansive definition than other housing models in the US. This is both a challenge and opportunity. Because it lacks a commonly understood definition, it is subject to a variety of interpretations from listening audiences or unfavorable manipulation by those who may oppose it. However, this lack of specificity also offers an opportunity to define what social housing could look like and take advantage of the national interest and momentum.

Pacoima has the opportunity to set the target income range and population of their project because precedent has not been set in the US. Like other European countries, Pacoima could serve different target populations by putting forth a proposal containing several different sites or projects that serve different populations. For example, Pacoima residents could advocate for a social housing portfolio in their community that packages a number of proposed and existing affordable housing projects together, including public or CLT acquisition of mobile home parks land, public- or CLT-owned ADU structures, and a reinvestment in the public housing project, the San Fernando Gardens. This proposal does not necessarily change the existing structure or proposals of these projects to keep these housing units affordable for current residents, but gives Pacoima residents a way to join these separate organizing efforts under one banner. This varied social housing portfolio proposal would thus include low-income homeowners, current public housing residents, and other vulnerable households under its purview. This could address criticisms of the US's public housing model and align with enthusiasm for "mixed-income housing" without actually inviting middle- or high-income households to displace current residents. This could also offer the opportunity to introduce other features of social housing that are desirable to Pacoima residents, such as resident councils or permanent affordability through CLT or public ownership, to each of these affordable housing projects.

This opportunity does not come without risks and considerations as well. Social housing's lack of explicit definition or history also makes any proposals put under its banner subject to unfavorable framing by opponents or co-optation by other parties that have different ideas for social housing. As such, a movement organized underneath the banner of social housing will have to be explicit in its local definition of social housing and anticipate possible detractors. Despite this, social housing may prove to be an exciting opportunity to unite different efforts for affordable housing in Pacoima.

### **Legal obstacles to constructing public housing in Los Angeles**

Despite renewed enthusiasm and opportunity for social housing, laws restricting the expansion of public housing provide hurdles for its contemporary adoption. These restrictions are pervasive at all levels

of government — national, state, and local — and would apply to any social housing proposals that require the public ownership of housing.

At the national level, the federal stock of affordable housing is limited to 1996 levels due to the Faircloth Amendment. This Clinton-era bill was part of a national reduction of federal funding to public housing, reflecting attitudes of the time that believe public housing was blighted and an inadequate provider of affordable housing (Andrews, 2020). In its place, the Clinton administration promoted public-private partnerships through tax credits and housing-choice vouchers to address housing need.

The most recent attempt to repeal the Faircloth Amendment, and thus permit the increase of public housing stock, was included in the Green New Deal for Public Housing Act in 2019 (Text - H.R.5185 - 116th Congress (2019-2020), 2019). That bill died on the House floor that same year.

At the state level, public housing is restricted by California Constitution, Article 34, which mandates that all new low-rent housing must be approved by local voters before construction is permitted. In 2019, the California State Assembly introduced a bill to include a repeal of Article 34 as a ballot measure (ACA-1 Local Government Financing: Affordable Housing and Public Infrastructure: Voter Approval., 2018), but it died on the Assembly floor and never reached the ballot.

In the city of Los Angeles, a series of propositions passed between 1973 and 1980 limits the number of public housing units to just 3,500 per council district, a total 52,500 citywide (Miller, 2008). As a result, any new publicly-owned social housing projects would only be developed in council districts that had not yet met the 3,500 maximum. Acknowledging this limitation, part of Bonin's Homes Guarantee motions explicitly requests that the city take stock of its existing public housing in order to determine where future projects can be located.

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Mitigating the Urban Heat Island Effect in Pacoima

A white paper submitted in partial satisfaction of the requirements  
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by

Eleanor Hunts

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# Mitigating the Urban Heat Island Effect in Pacoima

## Introduction

Cities and urbanized areas can experience temperatures several degrees warmer than surrounding areas due to the built environment and the concentration of human activity (Cambridge Systematics, Inc., 2005). Buildings, roads, and other modified surfaces absorb solar radiation more than natural landscapes do, and lead to a phenomenon that is known as the Urban Heat Island (UHI) effect. These higher relative temperatures have detrimental impacts on both human and environmental health. They can intensify the impact of heatwaves and poor air quality, put sensitive populations at risk, and lead to intensified use of air-conditioning, burdening residents with higher bills while creating more energy-related emissions. Climate change will threaten different geographies in different ways, exacerbating already present stressors and challenging communities to adapt to a new and uncertain normal. With most metropolitan areas already experiencing a warming trend over the last century (Akbari et al., 1990), the impacts of UHIs will likely grow.

My research has two purposes designed with Pacoima Beautiful's environmental justice goals in mind. First, I review the current literature on the UHI effect as it relates to Los Angeles and the San Fernando Valley, focusing on causes, costs, and mitigation strategies. Building on this foundation, I then assess the Pacoima Transformative Climate Community (TCC) study area's potential for interventions, to alleviate heat impacts with an emphasis on cool roofing. I find that Pacoima's climate and land uses have created a particularly hazardous environment in need of countermeasures. I identify cool roofing as a strategy that could deliver almost half a million dollars in savings for energy customers within the TCC study area, and an atmospheric heat reduction equivalent to removing 35,000 cars from the road. With dedicated government

and stakeholder support, Pacoima has the capacity to address many of its UHI-related hazards and improve the health and quality of life of its residents and business owners.

## **Literature Review**

### **A Differential Heating Phenomenon**

Asphalt and concrete pavement have distinctive thermal and absorptive properties, causing them to reflect, emit, and absorb the sun's energy differently than natural soil surfaces (Qin and Hiller, 2014). Humans have replaced natural vegetation with these manufactured materials that have low solar reflectance—known as albedo—and high thermal capacity. This change in land cover reduces shade and moisture, which normally help keep urban areas cool. Densely urbanized areas also evaporate less water, which contributes to elevated, surface and air temperatures (U.S. EPA, 2008). In addition to diminishing natural surfaces and their evapotranspiration-cooling potentials, man-made materials absorb and store solar radiation more than natural surfaces do, reducing latent heat in favor of sensible heat flux (Taleghani and Berardi, 2018). This contributes to the Urban Heat Island (UHI) effect, which can be defined as the surface and air temperature differences between a city and its rural surroundings (Taleghani and Berardi, 2018). A UHI may refer to a large-scale temperature differential such as a neighborhood or city and its surroundings, or a site-specific, localized hotspot such as a parking lot, airport, or individual building (Li, 2012). Research has primarily been conducted at the larger scale, specifically, the city level where annual mean air temperatures can range between 1.8 and 5.4 degrees Fahrenheit warmer than its surroundings (Li, 2012).

### **Associated Costs**

With rising temperatures come increasing reliance on mechanical cooling systems, and high demand for electricity during peak hours. Cooling-related electricity-demand models estimate that for every one degree (Fahrenheit) increase in air temperature, demand increases by 1.5 to 2 percent, suggesting that five to ten percent of community-wide electricity demand is used in response to the UHI (Li, 2012). A report from 1990 translated this demand into monetary costs, estimating that the combined cost of UHIs across the United States was greater than one million dollars per hour (Akbari et al., 1990). Three decades of climate warming later, that cost has more than likely increased.

In addition to monetary costs, there are environmental risks associated with UHIs. Electric grids are typically powered, at least partially, by fossil-fuel plants. These plants emit greenhouse gases such as carbon dioxide, as well as pollutants that are harmful to human health and local air quality such as sulfur dioxide, nitrogen oxides, particulate matter, and carbon monoxide (Li, 2012). As electricity demand increases, so do these associated emissions. Ground-level ozone, also known as smog, is a particularly concerning UHI-related hazard. Smog is formed when nitrogen oxides and volatile organic compounds react in the presence of sunlight (Li 2012). As Southern California becomes hotter, more smog will form damaging vegetation and ecosystems, and triggering health effects for vulnerable populations.

Yet another effect of UHIs is their potential to compromise human health and comfort. Increased air pollution levels—particularly smog—associated with high temperatures have been linked to respiratory difficulties, heat exhaustion, and heat stroke (Li, 2012). The Northeast San Fernando Valley is one of the most vulnerable areas to climate change in the city of Los Angeles, with the number of extreme heat days expected to rise in the coming decades. By a UCLA Department of Atmospheric and Oceanic Sciences estimate, San Fernando Valley neighborhoods

could see a nearly 100 percent jump in average days per year exceeding 95 degrees Fahrenheit (Los Angeles County Department of Public Health, 2021). UHIs may intensify the impact of severe climate changes such as heat events. Sensitive populations, including the elderly and those with existing health conditions, are particularly at risk of these events (Gilbert et al., 2016).

### **Mitigation Interventions**

Heat mitigation strategies can reduce excess heat in urban environments by altering their land cover and changing the surface energy balance (Taleghani and Berardi, 2018). The literature generally identifies trees, cool pavement, and cool roofing as the most prevalent, effective, and viable strategies. These interventions reduce the absorption of sunlight at the surface and subsequent transfer to the urban atmosphere, benefitting air quality, lowering energy demand, and enhancing human health and comfort. In 2012, the California Legislature passed AB 296, which amended the Health and Safety Code as well as the Public Resources Code, to recognize the UHI effect as a looming concern. It also called upon the California Environmental Protection Agency (CalEPA) to develop a standard definition and collaborate with the California Climate Action Team to pursue cool pavement technologies with the California Department of Transportation (CalTrans) (AB 296, 2012). This legislation, along with recent empirical research on heat vulnerability and heat reduction strategies, is indicative of the support for developing a coordinated response to the threat of UHIs. The City of Los Angeles, especially, has embraced the response. Various city departments have been exploring and adopting cool community programs (Gilbert et al., 2016), and nonprofit organizations such as Pacoima Beautiful have embarked on ambitious urban greening and tree planting campaigns (LA2050, 2019).

### Trees

Trees have direct and indirect effects on urban heat. They provide shade that can reduce solar heat gain through windows, walls, and roofs, as well as reduce heat gain from surroundings (Akbari et al., 1990). Indirectly, trees can decrease the rate of outside air infiltration by increasing surface roughness and reduce building-heat gain by lowering ambient-sensible heat through evapotranspiration (Taleghani and Berardi, 2018). Adding shading around buildings is extremely cost-effective and can be implemented at micro and macro scales. Trees alone can reduce summer-cooling energy use in buildings to about one percent of the capital cost of power plants and air-conditioning equipment, and have the additional benefit of avoiding, and even offsetting, carbon emissions associated with mechanical cooling (Akbari et al., 1990).

### Cool Pavement

Man-made pavement has distinctive thermal and absorptive properties, causing it to be generally warmer than naturally vegetated areas. Cool-paving materials provide mitigation and adaptation to climate change because they reflect “more solar energy, enhance water evaporation, or have been otherwise modified to remain cooler than conventional pavements” (Cambridge Systematics, Inc., 2005). Pavement with high reflectivity discharges less instantaneous heat back to the atmosphere, decreasing net radiation. In addition to reducing the heat that is transmitted back to the atmosphere, it can also reduce the downward ground heat flux during the day and upward ground heat flux at night (Taleghani and Berardi, 2018). While cool pavement provides several other benefits unrelated to heat including reduced stormwater runoff, lower tire noise, and enhanced safety, it is most effective when adopted across large, spatial, extent (Cambridge Systematics, Inc., 2005). Since concrete pavement and asphalt make up 20 to

40 percent of a typical urban fabric, cool-pavement has significant potential (Qin and Hiller, 2014).

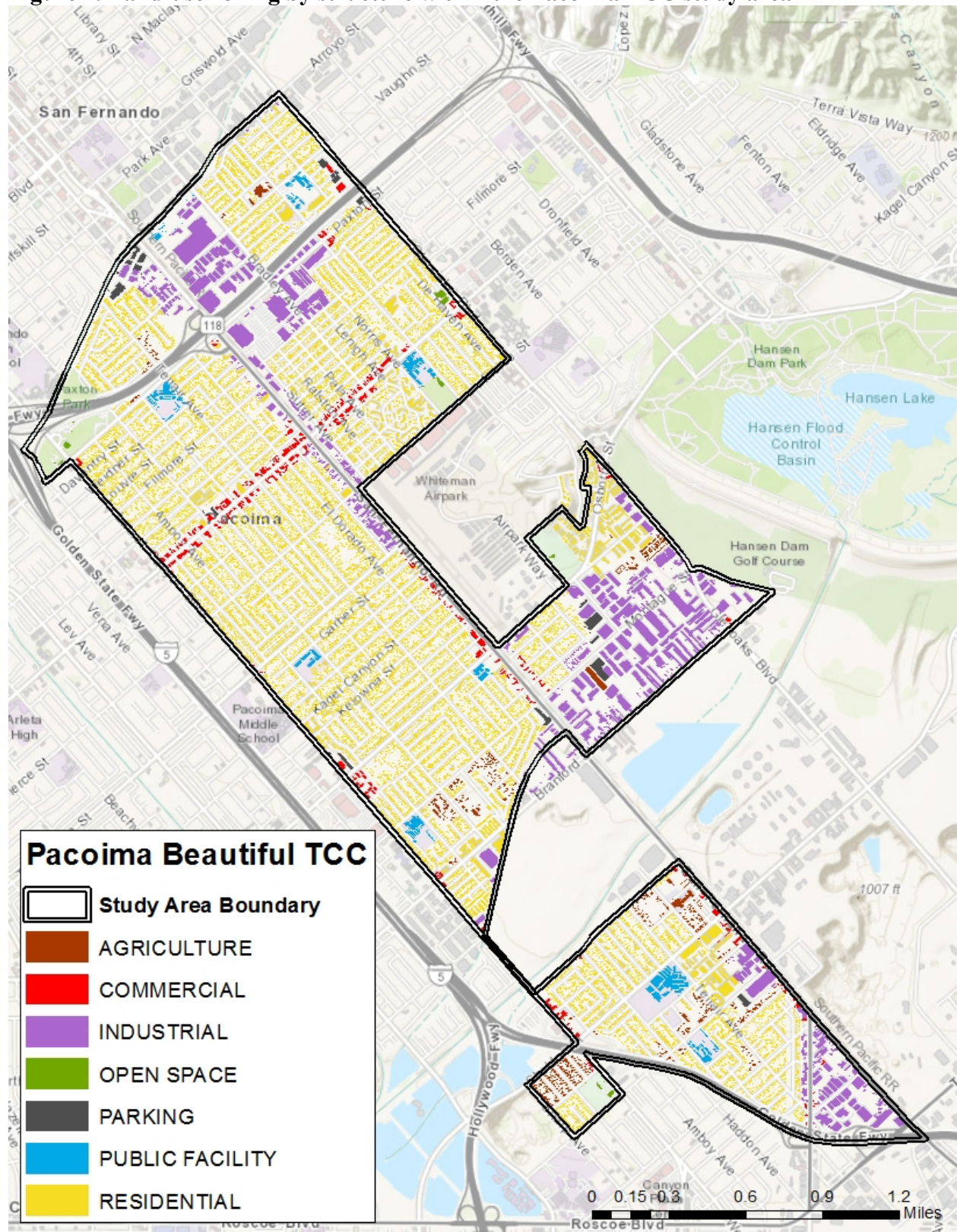
### Cool Roofs

The third common UHI response is cool roofs. The theory is similar to that behind cool pavement: replacing dark roofs with high albedo cool roofs increases reflected sunlight, decreasing net radiation. “Cool roofs” is the general term to describe roofing with higher solar reflectance and can include reflective paint, a sheet covering, or reflective tiles or shingles (Cool Roof Rating Council, 2021). High thermal emittance and solar reflectance properties can help this kind of material stay up to 60 degrees Fahrenheit cooler than conventional materials (Konopacki et al., 1998). A cooler roof transfers less heat into the building below, so the building stays cooler and requires less energy for air-conditioning. A 2011 report estimated that if Los Angeles residents phased in cool roofs on all its buildings, they could save \$30 million each year from energy-saving costs alone (Horowitz, 2011). Cities have shown special interest in cool roofs because of their effectiveness and co-benefits. Mitigating heat at the roof level decreases the downward heat flux into a building and also reduces heat that is emitted by air-conditioning systems (Taleghani and Berardi, 2018). Cool roof paint-coating can also extend the life of an existing roof while at the same time delivering energy cost savings to the consumer (Gilbert et al., 2016). Like with cool pavement, achieving a large reduction in surface air temperature with cool roofing requires large-scale adoption and coordination across public street services and commercial, industrial, and residential building owners.

## **Options for Pacoima**

The Pacoima Transformative Climate Communities study area's climate and land use patterns create an environment with great potential for UHI-targeted mitigation. The study area contains parts of the Pacoima and Sun Valley neighborhoods of Los Angeles, where temperatures are expected to soar in the coming decades. It is densely urban and features extensive concrete and asphalt pavement, abundant dark roofing, and sparse shading. The literature revealed that tree shade, cool pavement, and cool roofing are the three most common and effective strategies to combat urban heat. Pacoima Beautiful and other organizations such as Million Trees LA have already embarked on tree planting campaigns, and the City of Los Angeles is working on cool pavement pilot projects. While shading and cool pavement remain important measures that should be continuously implemented, cool roofing has been relatively unexplored in the region and is, therefore, the focus of this research.

**Figure 1. Land-use zoning by structure within the Pacoima TCC study area**





## **Residential Cool Roofing**

The Pacoima Beautiful TCC study area contains about 10,000 households spread across just over two square miles of land zoned for residential purposes (see Figure 1). In 2014, the Los Angeles Department of Water and Power (LADWP) worked with the Los Angeles-based nonprofit Climate Resolve and the Los Angeles Department of Building and Safety to develop an update to its Municipal Building Code (Gilbert et al., 2016). The Cool Roof Ordinance, which passed through City Council unanimously, mandates all new and refurbished buildings to have a cool roof. There are a few exceptions: cool roofs are not required for roof repairs, roof replacement when the roof area is equal to or less than 50 percent of the total roof area, or on projects where building-integrated photovoltaics are being installed (LADBS, 2015). The city's code is one of the strictest in the state and requires that new asphalt roofs must have a solar reflective index of at least 75 for low slope roofs and 16 for those with slopes equal to or greater than 2.12 (LADBS, 2015). Individual households can realize modest personal electricity savings by switching to cool roofing, but community cooling benefits and subsequent utility savings will be highest with widespread adoption. Unfortunately, a residential shift to cooler materials in Pacoima is likely to be slow. Only new construction or major roof replacements are subject to the Cool Roof Ordinance, and homeowners do not regularly redo their roofs. Strong city investment, broad stakeholder support, and access to local technical assistance are therefore essential to accelerating the switch.

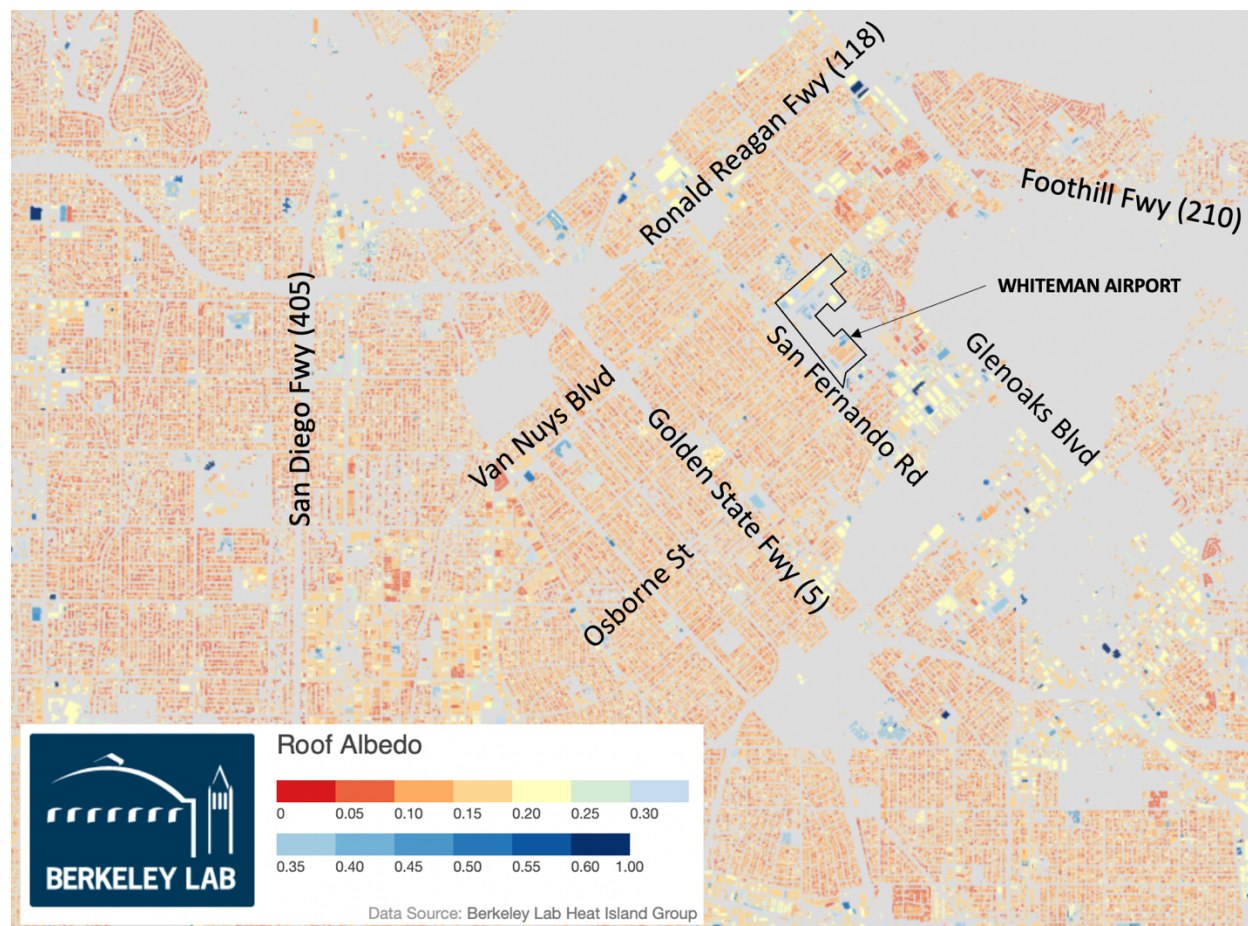
Cool-roofing costs depend on location and material. A reflective coating can cost as little as 75 cents per square foot, while single-ply cool roof membranes range up to \$3 per square foot (U.S. EPA, 2008). LADWP issues rebates to eligible single-family and multi-family residential customers to offset the cost of cool roof products. This rebate can be up to 30 cents per square

foot of roofing and the Cool Roofs Rating Council and Climate Resolve both have resources to guide customers through the process (LADBS, 2015). Since the Cool Roof Ordinance does not apply to roofs with solar panels, it should not impact the work of GRID Alternatives. However, pairing the two technologies can have a substantial effect on temperature and energy demand.

### **Industrial and Commercial Cool Roofing**

Pacoima's commercial and industrial land uses, which generally feature low-sloped roofs with high surface area, have strong potential for cool roofing. The TCC study area contains just under a square mile of land zoned for commercial or industrial purposes (see Figure 1). While these land uses are proportionately smaller than residential land use, they are concentrated in specific areas, or islands, that can be treated with mitigative measures to have a large environmental impact. Commercial uses are located in two main areas: along Van Nuys Blvd between Interstate 5 and Glenoaks Blvd, and San Fernando Road near the Whiteman Airport. Industrial uses are clustered near the airport and near the intersection of State Route 118 and San Fernando Road. Figure 2 is a portion of a digital map that shows data from a study that used 2009 aerial imagery to characterize building-scale roof reflectance in California (Berkeley Lab Heat Island Group, 2009). This dataset suggests that roof albedo is low for most of the Pacoima TCC study area, especially in residential areas. The clusters of industrial buildings identified previously have moderate albedo, while the reflectance of the commercial strips along Van Nuys Blvd and San Fernando Road is mostly low. The Cool Roof Ordinance applies to commercial and industrial buildings just as it does to residences, but the City only offers incentives for residential customers. Small businesses may therefore rely on community stakeholders for financial support.

**Figure 2. Roof albedo in the San Fernando Valley overlaid with relevant place labels. Map credit: Berkeley Lab Heat Island Group, 2009**



### Quantifying the Benefits of Cool Roofs in Pacoima

Using LARIAC building-footprint data (City of Los Angeles, 2017), electricity cost savings, and CO2 emissions savings, I modeled the benefits of retrofitting Pacoima buildings with cool roofing materials. My model is adapted from a 2011 report that modeled cool roofing in Los Angeles (Horowitz, 2011). Assumptions for this modeling scenario:

- 75 percent of the total roof area is retrofitted with cool roofing material that increases albedo by 0.25
- 75 percent of the total roof area in Pacoima covers air-conditioned space

- Annual direct electricity savings of 3 kWh per square meter of converted rooftop over air-conditioned space
- Annual indirect electricity savings of 15 percent of direct electricity savings
- 13 cents/kWh average annual retail rate for electricity
- An offset of 61kg emitted CO<sub>2</sub>/m<sup>2</sup> of cool roof

Per the Horowitz model upon which I based my model, direct electricity savings refer to “decreases in AC load due to a cool roof’s lowering of individual building temperatures” and indirect electricity savings refer to “decreases in AC load due to the overall reduction in ambient urban temperatures.” To be able to differentiate my results by land-use type, I used city zoning data to append land uses to the building footprints to categorize building structures into large land-use bins. Approximate savings by land use are shown below in Table 1.

**Table 1. Approximate savings associated with retrofitting 75 percent of buildings in the TCC study area with cool roofing, organized by land-use type**

	Total Roof Area (m <sup>2</sup> )	Roof Area Converted to Cool Roof (m <sup>2</sup> )	Converted Roof Area with AC (m <sup>2</sup> )	Direct Electricity Savings (kWh/m <sup>2</sup> )	Indirect Electricity Savings (kWh/m <sup>2</sup> )	Total Electricity Savings (kWh/m <sup>2</sup> )	Cost Savings (\$/year)	Equivalent emitted CO <sub>2</sub> (metric tons)
<b>Commercial</b>	132,749	99,562	49,781	149,343	22,401	171,744	22,327	8,098
<b>Industrial</b>	873,525	655,143	327,572	982,715	147,407	1,130,122	146,916	53,285
<b>Residential</b>	1,755,683	1,316,762	658,381	1,975,143	296,271	2,271,414	295,284	107,097

Based on these estimates, adopting cool roofs on 75 percent of buildings in the Pacoima TCC study area could generate 3.57 GWh in annual electricity savings or around \$450,000 in energy costs. The study area could reduce atmospheric heat by an amount equivalent to the heat generated by over 160,000 metric tons of emitted CO<sub>2</sub>. This is the equivalent of removing about 35,000 cars from the road.

These estimates are meant to provide a rough estimate of benefits and have some limitations. First, I did not account for effective cool roofing already in place on buildings, or for solar paneling on buildings that may already be providing high solar reflectance. Referring back

to the 2009 snapshot of Pacoima building albedo (Figure 2), it does not appear that any Pacoima roofs have maximized their cool-roofing potential, but current conditions may differ from 2009. Second, the actual energy savings of a structure depends on a multitude of factors, including nearby shading, building design, insulation, number of stories, and location. The values I used for my calculations above are conservative and may underestimate the true savings that could be achieved with widespread cool roofing in Pacoima.

## **Looking Ahead**

The timeline for this research did not allow for a complete analysis of Pacoima's UHI. To better complete this picture, future research should estimate the temperature reduction potential of various intervention strategies. This kind of analysis will require collecting site data on current tree canopy, pavement, and roof conditions. Further research should account for risk and vulnerability factors present in the community to better identify and prioritize specific areas for interventions. Another topic of future research might focus on identifying individual lots for prioritization. In Pacoima, residential front and side yard vegetation has been replaced by concrete pavement, likely to create additional off-street parking. Future research might look into the pace and extent to which natural materials have been replaced by urban ones. Quantifying the heat effects of this switch would provide a more detailed picture of residential vulnerability.

A warming climate will have detrimental impacts on human and environmental health and well-being. This paper reviewed the causes, costs, and mitigation opportunities for Pacoima, and quantified how a widespread shift to cool roofing might reduce energy use and greenhouse gas emissions. It is essential that Pacoima continue its multimodal response to warming temperatures

not just through cool roofing but also through increasing urban vegetation around buildings and adopting cool pavement.

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Health Conditions in Pacoima, California

A review of public health databases

A white paper submitted in partial satisfaction  
of the requirements for the degree Master of  
Urban and Regional Planning

by

Sasha Ragland

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## **Abstract**

The neighborhood of Pacoima has been devastated by the COVID-19 pandemic due in part to the preexisting health conditions experienced by residents. In this white paper, I use online public health databases to create a health profile for Pacoima. I then go on to assess the usefulness of these online databases. As public health data becomes more readily available, it is important to determine how recent and accurate data is so that it can be used to improve health conditions. I assess the databases CalEnviroScreen, AskCHIS, and Healthy Places Index to identify what may be missing and may be preventing a holistic picture of health conditions in Pacoima.

*Keywords:* Pacoima, COVID-19, public health, preexisting environmental factors

## **Introduction**

As we pass the one-year mark of the COVID-19 pandemic, one thing is clear: this pandemic hits hardest those who are already vulnerable. This may be a medical vulnerability, but more than that we see the pandemic decimate low-income and working-class neighborhoods where residents cannot afford to stay home and where social distancing may not be an option. It is not a coincidence that these disparities run along socio-economic and racial lines. The communities already suffering neglect at the hands of our medical institutions and government continue to suffer. One such community is Pacoima, where one in three residents contracted COVID-19 as of January 2021 (New York Times). Once the pandemic subsides in intensity, the lasting effects are going to leave permanent marks on communities, and the huge population of individuals who contracted COVID-19 and recovered will experience long-lasting health effects. In this year when we are ingesting more public health data than ever before, it is important to ask, who does this data serve, and how does it help? The aim of this whitepaper is twofold: to

capture the health profile of Pacoima, and to interrogate and assess the usefulness and ease of use of the public health databases that inform this profile.

### **Pacoima Demographics**

To gather demographic data, I pulled data from the Los Angeles Times and AskCHIS databases, starting with the Los Angeles Times. In 2008, the population of Pacoima was 81,318 residents. The median household income for Pacoima was \$49,066, which was average for the city of Los Angeles but low for the county. While income was on par with surrounding areas, education in Pacoima was low for the city and county, with only 4.2% of residents 25 and older holding a bachelor's degree. The average household size in Pacoima was 4.3 people, which is high for the city and county, and has serious implications for COVID-19 rates, as it may make social distancing hard or impossible.

The data from AskCHIS is from 2018. As of 2018, Pacoima was 89% Hispanic or Latino, 4% Non-Hispanic Black, 4% Non-Hispanic White, and 3% Non-Hispanic Asian. The largest age group was 40-64 years old, followed by 25-39 years old, with a fairly even split between women and men. No other genders were reported. Having this demographic profile in mind, I took a look at health and environmental conditions in Pacoima using the publicly available online databases CalEnviroScreen, AskCHIS, and Healthy Places Index. In order to make assessments across the databases, I developed a framework which considered health condition score, data years, available demographic information, data specificity, health condition measurement, and resources provided to database users. This framework is visualized in Tables 2 and 4.

### **Health Conditions from CalEnviroScreen**

Using CalEnviroScreen (CES), I looked at rates of asthma, cardiovascular rate, and low birth rate. Rates of asthma in Pacoima are in the 77th percentile, meaning rates of asthma for this

census tract are higher than 77 percent of the census tracts in California. This high rate of asthma suggests high levels of environmental pollutants. Cardiovascular rates are in the 40th percentile, and low birth weight is in the 30th percentile. These scores vary slightly within the census tracts in Pacoima, but they are fairly consistent. We now have a partial picture of some of the health challenges in Pacoima, but the usefulness of this data depends on how comprehensive the public health data is from CalEnviroScreen and how user-friendly it is.

### **CalEnviroScreen Assessment**

To navigate CalEnviroScreen, users can look up an address or place and select individual census tracts in that area. Unfortunately, there is no option to select and group multiple census tracts to analyze. Looking at our first condition of asthma, CalEnviroScreen provides information on what asthma is, why it is included in CalEnviroScreen, explains how it is measured, and provides links to more information about asthma. Asthma is measured by emergency department visits. The data currently reflected on the site is from the years 2011 to 2013. This information is likely not capturing an accurate count of people experiencing asthma since not everyone with the condition makes an emergency room visit, and the data is almost 10 years old. Despite those issues, the percentile number makes it clear that the community of Pacoima has a lot of residents suffering from asthma. And according to the site, “African Americans and people with low incomes visit hospitals for asthma more often than other groups.” The site does not go on to provide any more information to clarify or explain this statement, which is problematic. More context is needed that discusses the concentration of pollutants in low-income areas and how African Americans experience higher rates of comorbid conditions that can lead to or exacerbate asthma. The site provides links for users that go to the CDC, Tracking California, and California Breathing. Unfortunately neither link for Tracking California or California Breathing work.

Continuing with CalEnviroScreen, I looked into rates of cardiovascular disease. Pacoima ranks in the 40th percentile for cardiovascular disease. Similarly to rates of asthma, cardiovascular disease is measured by census tract and considers the number of heart attack emergency department visits per 10,000 people. This measurement process is likely heavily underreporting the real prevalence of cardiovascular disease in the community, and the website even notes this shortcoming: “due to a lack of data on the prevalence of cardiovascular disease, emergency department visits for heart attacks was selected as a good indicator of cardiovascular disease” (CalEnviroScreen). I wanted to see how this site discussed those at risk for cardiovascular disease. “Short-term exposure to outdoor air pollution following a heart attack has been shown to increase the risk of death. Long-term exposure to air pollution may also result in premature death for people with a previous heart attack” (CalEnviroScreen). Here we are seeing environmental factors taken into consideration, but the site stops short of making any direct connection between environmental pollutants and heart disease, and makes no mention of race and the increased presence of environmental pollutants in minority neighborhoods. Lastly, I reviewed the resources made available to users. A CDC link takes the user to a page on heart disease, and another link takes the user to the American Heart Association website. The last link from Tracking California (Heart Attacks Homepage: California Environmental Health Tracking Program) does not work.

The final health condition I looked at using CalEnviroScreen was low birth weight. The census tract I looked at in Pacoima received a percentile rating of 30. This percentile represents the percentage low birth weight (less than 5.5 pounds) rates averaged over a seven-year period. This data is even further out of date as it pulls from 2006 to 2012. CalEnviroScreen explains that living in areas with more poverty and violence, pollution, lack of access to healthcare and healthy food can increase the chance of low birth weight. Low birth weight has lifelong

implications and can increase the risk of asthma and other chronic diseases. Unfortunately, there is no discussion of how race or environmental racism relates to this health condition. The links provided go to the CDC and an article about maternal and infant help on the site Tracking California. The next database I looked at provided more detailed information about health conditions, but it also had shortcomings.

### **Health Conditions from AskCHIS**

The database AskCHIS is free to use but does require creation of an account. The user has to select their organization from the options of government, legislative, educational, student, or other. While volunteer is an option under “other,” anyone who wants to use this site needs to have an email address and has to take the extra step of creating an account.

Using AskCHIS, I looked at the following health conditions: asthma, diabetes, obesity, fair or poor health, oral health, low-income food insecurity, currently uninsured, and delay in receiving care. Unlike CalEnviroScreen, I was able to group multiple census tracts and pull data from the grouped tracts, likely getting a more complete picture of conditions in Pacoima. This data is from 2018, making it more recent than CalEnviroScreen, but still three years out of date. Unlike CalEnviroScreen, this database provides no links to articles or other websites that expand on and explain the health conditions presented. Residents in Pacoima experience higher rates of all the conditions I selected than residents in Los Angeles or California as a whole. While I have charted the comparisons for all the conditions in Table 1, I will provide details about the three conditions that have the highest disparity in rates between Pacoima, Los Angeles, and California.

The health condition with the largest disparity between Pacoima, Los Angeles, and California is obesity. In 2018, 38.9% of adults 18 years and older had a BMI above 30. These numbers are self-reported so they may not be capturing everyone who experiences obesity. We also know that BMI calculations are based off of male European standards and are not

appropriate for use in all populations. In Los Angeles, this percentage is 27.7% and in the state it is 26.8%, so the disparity between Pacoima and Los Angeles is 11.2%, and between Pacoima and the state it is 12.1%, which is pretty significant. Similarly to CalEnviroScreen, AskCHIS provides demographic data by census tract but not for individual health conditions. It is important to know obesity rates since experiencing obesity puts individuals at risk for a host of other health conditions like asthma, high blood pressure, and diabetes, and makes them more vulnerable to certain illnesses. Obesity rates can also indicate a lack of food resources and food education in the area.

The next health condition with the largest disparity between Pacoima, Los Angeles and California is currently uninsured. This health condition was determined using questionnaires for adults aged 18 to 64 and represents the number of adults who were uninsured at the time of the interview. In Pacoima, 18.3% of adults are uninsured. In Los Angeles, this rate is 13.4%, and in California, the rate is 10.8%. Insurance status can indicate the overall level of care residents are receiving and provide insight into socioeconomic status, since health insurance in the U.S. is often prohibitively expensive. As we continue to deal with the COVID-19 pandemic, a trip or stay in a hospital for someone without insurance can leave them deeply in debt.

Oral health is the next category where residents in Pacoima experience fair or poor oral health at higher rates than Los Angeles or California. In Pacoima, 35.9% of residents 18 years and older have teeth in fair or poor condition. This rate is 29.3% in Los Angeles, and 24.9% in California. Oral health can indicate socioeconomic status as well as reflect diet and overall health status.



Health Condition	Pacoima	Los Angeles	California
Asthma	17%	13.90%	14.50%
Diabetes	12.8%	11.10%	10.60%
Obesity	38.9%	27.70%	26.80%
Fair or poor health	28.3%	23.60%	20.10%
Oral health	35.9%	29.30%	24.90%
Low income food insecurity	13.5%	6.70%	6.40%
Currently uninsured	18.30%	13.40%	10.80%
Delay in receiving care	20.40%	20.40%	19.60%
AskCHIS allows the user to select desired census tracts. I selected the tracts that best matched the boundaries for Pacoima but had to omit certain tracts which overlapped heavily with surrounding areas. The tracts I used for my analysis were: 1047.03, 1048.10, 1048.21, 1048.22, 1212.10, 1047.04, 1046.10, 1046.20, 1045, 1044.33, 1044.01, 1044.04, 1047.01, 1043.20, 1042.03, 1041.05, 1041.08, 1042.01, 1043.10, 1095			

*Table 1 Health Conditions in Pacoima, Los Angeles, and California*

### AskCHIS Assessment

This database allows the user to choose a health condition from the years 2012, 2014, 2016, and 2018. Users can choose the location for the data from a state, county, city, or census tract level. Unlike CalEnviroScreen, multiple census tracts can be selected and merged into one, giving a more complete and accurate data output. Each health condition provides demographic data on age, sex, race/ ethnicity, and federal poverty level. Health conditions are scored using the percentage of the population with the condition and can be compared to other census tracts, counties, or geographic locations, which gives the data useful context. However, there are no

resources for users, which makes this data useful for analysis, but does not offer information to elaborate on the health conditions or provide information about care.

Dataset	Health condition	Score	Data years	Demographics	Data specificity	Measurement	Resources for user
CES	Asthma	77 percentile	2011-2013	Race and age by census tract not for condition	Census tract	Emergency department visits per 10,000 people	CDC, Tracking CA, California Breathing
CES	Cardiovascular Rate	40 percentile	2011-2013	Race and age by census tract not for condition	Census tract	Number of heart attack emergency department visits per 10,000 people	CDC, Tracking CA, American Heart Association
CES	Low Birth Rate	30 percentile	2006-2012	Race and age by census tract not for condition	Census tract	Percentage of low weight births (less than 5.5 pounds), averaged over a seven-year period (2006-2012)	CDC, Tracking CA
AskCHIS	Asthma (1-17)	17%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Ever diagnosed with asthma (1-17)	None
AskCHIS	Diabetes	12.8%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Adults ages 18+ who were ever diagnosed with diabetes by a doctor.	None
AskCHIS	Obesity	38.9%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Adults ages 18+ who had a body mass index (BMI) of 30.0 or above. BMI was calculated using	None

						respondent's self-reported weight and height.	
AskCHIS	Fair or poor health	28.3%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Adults ages 18-64 with fair or poor health.	None
AskCHIS	Oral health	35.9%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Adults ages 18+ who have teeth in fair or poor condition.	None
AskCHIS	Low-income food insecurity	13.5%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Adults ages 18+ who are low-income food insecure.	None
AskCHIS	Currently uninsured	18.30%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Constructed using various health insurance questions for adults ages 18-64. Currently uninsured at time of interview.	None
AskCHIS	Delay in receiving care	20.40%	2012, 2014, 2016, <b>2018 (selected)</b>	Sex, Age, Race/ Ethnicity, Federal Poverty Level	Census tracts	Adults ages 18+ delayed or not getting needed prescription drugs or medical services past 12 months.	None

Notes: The neighborhood of Pacoima encompasses a number of census tracts. When I had to choose a census tract to pull data from, I used the most populous tract: Census Tract 6037104105

AskCHIS allows the user to select desired census tracts. I selected the tracts that best matched the boundaries for Pacoima but had to omit certain tracts which overlapped heavily with surrounding areas. The tracts I used for my analysis were: 1047.03, 1048.10, 1048.21, 1048.22, 1212.10, 1047.04, 1046.10, 1046.20, 1045, 1044.33, 1044.01,

1044.04, 1047.01, 1043.20, 1042.03, 1041.05, 1041.08, 1042.01, 1043.10, 1095

*Table 2 CalEnviroScreen and AskCHIS Database Assessment*

**Environmental Contaminants from Healthy Places Index**

The link between health conditions and environmental factors is clearer than ever, so I took the time to review existing data on environmental pollutants that directly impact health. Using Healthy Places Index, I reviewed rates for safe drinking water contaminants, clean air - ozone, clean air - PM 2.5, and clean air - diesel PM. These indicators are all reported by percentile. The detailed percentiles are reflected in Table 3, and I will discuss safe drinking water contaminants specifically. These four indicators make up a larger category called clean environment. I looked at the most populous census tract in Pacoima. This tract had healthier clean environment conditions than just 21% of other California census tracts.

Looking at safe drinking water contaminants specifically, the database explains that the index score is created by combining information about 13 types of contaminants and two water quality violations. The database provides the raw index score that can be compared to other census tract scores. And perhaps, most useful, there is a section entitled, “What is the connection to health?” which states the following for safe drinking water: “Everyone should have access to safe and affordable drinking water. Water is essential for life. While most drinking water in California meets health and safety standards, some drinking water is contaminated by bacteria and chemicals. Contaminated drinking water disproportionately impacts communities of color, low-income communities and rural areas in the state” (Healthy Places Index). This information makes the clear connection between the rate of environmental contaminants and low-income communities of color. If interested, the user can read more about the connection to health. Here the database discusses specific health impacts like cancer and premature birth, which can be caused from water contaminated with arsenic or lead. More information is provided about water

disparities and race, stating that Hispanic and Black households experience unsafe drinking water at a higher rate, and that even when water does meet safety standards, the taste and smell may not meet aesthetic standards, creating a basis of distrust in these communities, and resulting in the purchase of more bottled water. Purchasing bottled water has an economic impact on these families, and unsafe drinking water may increase the levels of sugar-sweetened beverages consumed, which has implications for obesity and type 2 diabetes.

Clean Environment	
Indicator	Percentile
Safe Drinking Water - Contaminants	30.1
Clear Air - Ozone	21.8
Clear Air - PM 2.5	39.2
Clean Air - Diesel PM	38.1
This census tract pool has healthier clean environment conditions than just 24.2% of other California census tracts	
Note: HPI allows the user to select desired census tracts. I selected the tracts that best matched the boundaries for Pacoima but had to omit certain tracts which overlapped heavily with surrounding areas. The census tract FIPS I used for my analysis were: 06037104105, 06037104108, 06037104201, 06037104203, 06037104310, 06037104320, 06037104401, 06037104403, 06037104404, 06037104500, 06037104610, 06037104620, 06037104701, 06037104703, 06037104704, 06037104810, 06037104821, 06037104822, 06037109500, 06037121210	

*Table 3 Healthy Places Index Clean Environment Percentile*

### Healthy Places Index Assessment

The Healthy Places Index database was informed by CalEnviroScreen and users will see the similarity between the two databases. Using the database users can navigate a map of California or select a county, city, or district using a search bar. Similarly to CalEnviroScreen, the data from Healthy Places Index is by census tract, and the user can select multiple census tracts to group and gather one overall score. Healthy Places Index creates percentile ratings for the overall score stating how healthy the location is compared to other California census tracts.

The data used to create these percentile scores is from 2017. In terms of demographics, the database provides percentages only for race and ethnicity. Looking at individual indicators under “clean environment”, Healthy Places Index provides more robust information than the other databases.

Healthy Places Index provides links to policy items that address the indicator, such as reducing water contamination from infrastructure. The user is able to read through the policies, and there is a feature to “find the policies that are right for you,” which explains how infrastructure can be improved on a community-wide level. There are links to local health departments where users can report unsafe conditions, get education about mitigation measures, and champion equitable water safety. The fact that Healthy Places Index couples detailed measures with contextual and policy information makes for the most useful and robust database, in my opinion. We saw with both the CalEnviroScreen and AskCHIS that contextual information was spotty and sometimes non-existent. It is not enough to say that low-income communities of color experience a health condition or pollution at a higher rate; there needs to be information as to why this may be, and tools for mitigation. Poor health is not a sign of personal shortcomings or something that some communities are destined to suffer from; it is the product of environmental, political, and economic forces. Hopefully, with better data collection and reporting, the correct care and resources can be provided for communities like Pacoima suffering from both preexisting conditions and COVID-19.

<b>Environmental Condition</b>	<b>Score (percentile)</b>	<b>Years</b>	<b>Demographic info</b>	<b>Data specificity</b>	<b>Measurement</b>	<b>Resources</b>
Safe Drinking Water - Contaminants	30.1	2017	Race/ethnicity	Census tract	Index score combining information about 13 contaminants and 2 types of water quality violations	Policies, local health agencies
Clear Air - Ozone	21.8	2017	Race/ethnicity	Census tract	Average of daily maximum 8-hour ozone concentration during the summer months (May-October) over three years (2012 to 2014).	Policies, local health agencies
Clear Air - PM 2.5	39.2	2017	Race/ethnicity	Census tract	Yearly average of fine particulate matter concentration (very small particles from vehicle tailpipes, tires and brakes, power plants, factories, burning wood, construction dust, and many other sources).	Policies, local health agencies
Clean Air - Diesel PM	38.1	2017	Race/ethnicity	Census tract	Average daily amount of particulate pollution (very small particles) from diesel sources (for July)	Policies, local health agencies

*Table 4 Healthy Places Index Database Assessment*

## **Conclusion and future research**

To gather a health profile for Pacoima is a labor-intensive process that involves the use of multiple online databases. This is by no means an exhaustive profile, and future research could consider more health conditions and mine databases for more up-to-date numbers. Future research could also look into health and climate change to determine rates of hospitalizations from overheating. Clearly residents in Pacoima are struggling with a number of health conditions, which are due in part to environmental pollutants. In order to combat these health conditions, people need to be empowered with information that can help them better understand medical conditions and advocate for themselves. While public health data does exist, there are shortcomings and gaps in information on the databases I reviewed. A more holistic picture of health conditions in Pacoima is required if the inequities are to ever be mitigated.



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UNIVERSITY OF CALIFORNIA

Los Angeles

Mending the Cultural Gap:

Identifying Cultural Barriers to Accessory Dwelling Unit

Financing and Legalization

An individual white paper submitted in partial satisfaction

of the requirements for the degree Master of

Urban and Regional Planning

by

Cindy Reyes

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## **ABSTRACT OF THE WHITE PAPER**

Since Los Angeles Planning and Zoning code allowed Single Family Residences to permit Accessory Dwelling Units (ADUs) on their lots by-right, ADUs have become a dominant solution to the ongoing housing shortage in Los Angeles. With that, arose compliance concerns, where a large number of existing ADUs are deemed a type of informal or illegal housing based on their noncompliance with municipal code. The Pacoima neighborhood in Los Angeles has a considerable amount of ADUs that are deemed informal or illegal, they take various shapes and forms, from garage conversions to new structures, either detached or attached. In Pacoima, the inability to legalize ADUs and bring them up to code, arises from barriers to ADU financing. Bringing ADUs up to code is a cost burden to many households especially lower-income households who have high debt and low equity. Analysis of state or municipal funding programs and private funding programs identify financial barriers due to typical financial calculations such as loan-to-value and debt-to-income ratios. There is little research analyzing further barriers in place. This paper goes beyond standard financial barriers to ADU legalization and financing by identifying cultural barriers that exist. As differences between cultures often hinders understandings of values and behaviors, such as housing and finance practices; this paper analyzes existing demographic data, survey data and transnational housing and financing practices to provide culturally relative policy and program recommendations to increase access ADU financing and therefore legalization.

*Keywords: Accessory dwelling units, financial barriers, cultural barriers, displacement avoidance*

## **Introduction**

In December of 2018, the Pacoima neighborhood of Los Angeles was awarded a \$23 million Transformative Climate Communities (TCC) grant by the California Strategic Growth Council. The grant will fund community-led development and infrastructure projects that provide environmental, health and economic benefits. Pacoima Beautiful is one of the community partners whose coordinated efforts, led to the creation of a unique plan for a green, socially inclusive, and climate resilient neighborhood. The proposal integrates projects that will improve air quality and reduce greenhouse gas emissions in addition to strategies to promote equity through job training and displacement avoidance policies and programs (California Strategic Growth Council, 2019).

Investment in a low-income neighborhood attracts developers and other industries, ultimately leading to higher housing costs. Often, neighborhood residents cannot manage the burden of increased rents and are left no other option than to move, feeding the cycle of gentrification. The displacement avoidance plan (DAP) outlines strategies to mitigate the negative effects of community investment. In Pacoima, the DAP outlines the development of an ADU action plan that includes recommendations for next steps on how to integrate ADU legalization and production. (Green Together Coalition, 2018).

This paper analyzes existing demographic data, survey data, housing and financing practices to first, identify cultural barriers to ADU financing and legalization and second, provide culturally relative policy and program recommendations to increase access to ADU financing and legalization, per the outlined goals of the DAP's ADU action plan.

## **Ongoing housing shortage**

There is an ongoing housing shortage both at the city and state level. According to the California Legislative Analyst's Office, the magnitude on necessary housing units needed to address the shortage is "enormous" (2019). There exists a dangerous cycle where high housing costs result in a housing shortage and a housing shortage result in high housing costs. A home in the California coastal community is 2.5x higher than the national average with rents 50% higher than the national rent average (CLAO 2019).

Compared to national housing production, the state is falling short. Those who pay at least half of their income toward housing are at greatest risk. In California, this applies to 1.5 million low-income households. For this population, job loss or an unexpected expense could result in homelessness (CLAO 2019). It is no wonder people have literally taken matters into their own hands and constructed ADUs to fulfill housing needs.

## **Previous ADU Audit**

Informal housing flourishes in an environment where housing production is low and housing costs are high. By these standards, California is a petri dish for informal housing. In Pacoima, such informal housing manifests through Accessory Dwelling Units (ADUs). As defined by Wegmann and Mawhorter, informal housing for this paper, is understood as housing built without proper building permits or land use approvals and one of the few ways of producing new housing to address needs of low-income families (2017).

Initial interest in such housing practices came from *colonias*, or informal housing settlements at the periphery of metropolitan areas near the Mexican border (Wegmann & Mawhorter). There is a considerable Latino/Hispanic population in Pacoima, even further to that broad categorization, ACS demographic data reveals that nearly three-fourths of the overall

residents are of Mexican descent (L.A. Times). Often times homeowners, themselves, build housing through “self-help” or self-built housing production. Self-help housing production is most prevalent in Mexico and Central American countries like El Salvador (Ward, 2014). With nearly half of Pacoima residents being foreign born, ADU prevalence in Pacoima could be addressed through cultural and transnational housing practices.

Informal housing takes different shapes and forms, the previous 2019 Comprehensive Research Project cohort carried out an ADU audit and identified different ADU typologies found in Pacoima See Figure 1. Actual reports state that nearly half of the properties in the TCC implementation area have an ADU (A Casita Community, 2019). Often to avoid detection from code enforcement these dwelling units are often hidden from public view by an existing hidden structure, so actual numbers are expected to be higher than the reported 48.5% (Wegmann, 2014).

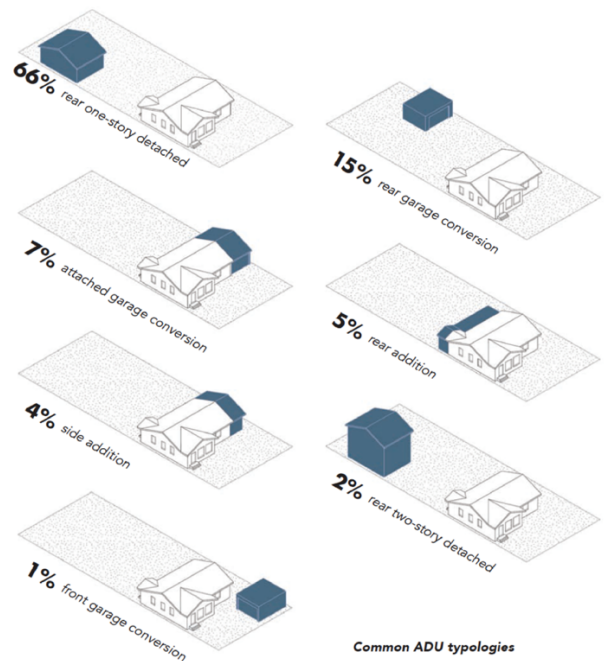


Figure 1: Common ADU Typologies (A Casita Community, 2019).

### **Inability to bring up to code**

Effective January 1, 2018, all City of Los Angeles' Single-family homes were permitted to one ADU per lot by right, with owner occupancy of the property no longer required to build an ADU (Hagar et al., 2019). By-right permitted ADUs only applies to new ADUs that are up to code, many existing ADUs in Pacoima are not up to code. If the Los Angeles Department of Building and Safety (LADBS) finds the ADU is not up to code, ADU homeowners are forced to pay the permit fees and make upgrades or remove the ADU. Based on previous survey data, the permitting process was described as a hurdle for someone who does not have familiarity with bureaucratic processes (Armenta, Ros & Sandoval, 2019). However, for those that could substantiate the permits to their ADU, respondents stated that the permitting process was painstaking and confusing. Bringing an ADU up to code is described not only a frustrating but costly process as well.

### **Traditional debt/equity in Latinx/Hispanic Households in LA**

Difficulty navigating the bureaucratic process of permits was one of the most significant barriers, residents stated, to legalizing their ADUs. Traditionally, financing barriers are more prominent for Latinx/Hispanic households, such is the case in LA and in Pacoima as there is a dense population of Latinx/Hispanics. Lenders will use income, monthly expenses, and debt like credit cards and personal loans, to determine the homeowner's ability to afford and make repayments. Gardea and Salazar (2019) note, even in the absence of private financing, Pacoima-Sun Valley homeowners have continued to construct and maintain accessory dwelling units through personal savings. ADU underwriting criteria and loan terms have high qualification thresholds and high pre-construction costs that are deemed in accessible to interested Pacoima homeowners (Gardea & Salazar, 2019). Through interview methods, it is discovered that



Homeowners, have high debt-to-income ratio, bad credit, and/or low-home equity preventing them from accessing bank products for ADU construction or permitting.

## **Research Findings**

This paper built upon existing research carried out to address barriers to ADU legalization and financing, ADUs are being built but not with traditional financing programs or required permits. Previous research addressed such financial barriers from a traditional standpoint, recommending more equitable programs and policies that can incorporate high debt/low equity households. This paper identifies cultural barriers that are also in place and hinder access to financing and legalization of existing ADUs through a literature review of existing research on immigrant homeownership experiences, informal housing production, accessory dwelling unit financing and legalization from a city and neighborhood context. Los Angeles was the broader context for existing research on immigrant homeownership experiences and informal housing production, the latter themes were informed from the 2018-2019 cohort's research report *A Casita Community: Fighting displacement in Pacoima with ADUs and CLTs*.

Based on Pacoima's demographic data, it was pertinent to explore immigrant homeownership experience. Although there was no study area in Pacoima, the broader Los Angeles context does have similarities in terms of demographics like place of birth and language that meaningful assumptions could be concluded.

Given the high concentration of foreign-born residents in Pacoima, it behooves equitable research to assess immigrant households. Both Pfeiffer et al. *Ethnically bounded homeownership* and McConnell's *Restricted movement* focuses on co-ethnic resiliency strategies, like ADUs, to preserve homeownership amidst the '08 recession. Co-ethnics, the term used to describe those with common languages cultural norms and expectations, social networks and barriers, function

within their own social and spatial boundaries, and rely on each other for resiliency strategies like safety nets, shelter and poverty avoidance (Pfeiffer et al., 2017). There are disparate patterns of crowding among Latinxs on the basis of legal status, where unauthorized immigrants have much higher unexplained overcrowding relative to other co-ethnics. Undocumented Mexican and Central American immigrants are more crowded, citizenship status is another layer that impacts the prevalence of overcrowding (McConnell, 2015). Overcrowding is measured by the ratio of number of people in a household to number of rooms in the housing unit. Standard priorities based off American traditional values identify overcrowding as more than one person per room (PPR). This PPR measure is objective yet crowding standards are subjective when national context, social class, cultural norms are other factors that play into conceptualizations of overcrowding (McConnell, 2015). The importance of identifying cultural barriers that may hinder ADU financing and legalization in Pacoima is of great relevance and serves to recommend culturally relevant program and policy for Pacoima Beautiful's Displacement Avoidance Plan.

### **Recommendation #1: Harboring a safe space for vulnerability**

In traditional Latinx/Hispanic households, men are the head of the households and cultural practices and ideologies like Machismo become barriers to accessing financing programs. The feeling of shame that arises when having financial difficulties leads to individuals being less likely to seek help (Pfeiffer et al., 2017). Machismo can be understood as a social behavior pattern in which the Latino male exhibits an overbearing attitude to anyone in a position he perceives as inferior to his and as the protector of the extended family, where emotional insensitivity can also be exhibited as well. (Mendoza, 2009). Machismo culture's tough-guy attitudes account for aversion to seek help. The upholding of such values does not

allow for financial vulnerability to be exercised or exhibited. Harboring a safe space for men to express vulnerability and find support through financial difficulties could encourage seeking financial aid and advising. Men tend to dominate conversations, like focus groups, workshops and other daily interactions (Octigan & Niederman, 1979). Harboring a safe space for women to share their own financial fears or uncertainties too has benefit in understanding financial practices and how to best meet their needs.

### **Recommendation #2: Advocate for language access legislation**

The purpose of providing translated marketing materials only goes so far when legal loan documents are English only. In California, state law requires loan modification documents to be translated into Spanish, Chinese, Tagalog, Vietnamese and Korean yet fines for noncompliance are very low and do not serve as a disincentive to increase language access to such documents and processes (Pfeiffer et al., 2017). Reliance on co-ethnic real estate and lending professionals made immigrants more susceptible to scams and misinformation leading into high incidents of foreclosures. Resulting from interviews and a walking survey's language barriers hinder navigating through the bureaucratic ADU permitting and funding process. Like traditional home financing marketing materials, ADU marketing materials are readily available in multiple languages yet legal loan documents are not. It would benefit many Pacoima residents interested in financing and legalizing an ADU to have wider accessibility to such legal documents in their native languages.

### **Recommendation #3: Continue community strengthening efforts via sharing of knowledge**

Community Land Trusts (CLTs) are another strategy that the Displacement Avoidance Plan (DAP) outlines; in order to have a successful CLT there must be a strong sense of

community. Communal ownership of land is an important strategy to preserve housing for the existing population and prevent against displacement that will arise due to investment in the area. Sharing knowledge about CLTs and how they benefit the overall community is necessary, as sharing knowledge about navigating the bureaucratic ADU process (Armenta et al., 2019).

## **Conclusion**

Following the economic downturn of the '08 recession ADU prevalence rose, as did multigenerational living arrangements. Existing research on cultural housing and finance practices in Hispanic/Latino households in Los Angeles is often analyzed through the lens of overcrowding and adequacy – post the Great Recession. It costs to bring an existing ADU up to compliance, this is why many of the ADUs in the Pacoima neighborhood are considered illegal as they are not up to code. Data on equity and debt in Pacoima, highlight the prevalence of ADUs, and difficulty navigating financing and legalization of such housing structures. After assessing existing research on barriers to financing and legalizing ADUs there was a lack of cultural barriers addressed.

This paper approaches mitigating efforts for Pacoima and other like jurisdictions with high foreign-born, immigrant, and financially burdened communities. Through culturally relative implementations, an equitable and inclusive Displacement Avoidance Plan can be carried out. Relying on secondary data as the main methodological approach, did pose the risk for overgeneralizing recommendations for this paper. Future and ongoing ADU navigation studies would benefit from on the ground community engagement and applied research methods to prevent overgeneralization of what recommendations may best be suited for the DAP area. With the onset of the Covid-19 pandemic, in person community engagement has been stifled and the economic downturn has been compared to the '08 recession, where an ADU boom was seen, it

would also be worthwhile to compare ADU prevalence in Pacoima both pre and post both these two economic depressions and asses for displacement and loss of homeownership.

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UNIVERSITY OF CALIFORNIA

Los Angeles

Green Infrastructure and Gentrification  
Understanding How Environmental Improvements  
Impact Displacement

A white paper submitted in partial satisfaction  
of the requirements for the degree Master of  
Urban and Regional Planning

by

Tayler Ward

2021

## **Introduction**

The neighborhood of Pacoima has faced a variety of pollution and environmental concerns that have had and continue to have devastating consequences for mental, physical, and social health in the neighborhood. Issues including the Valley Generating Station gas leak, the Whiteman Airport crashes, and extreme heat events, highlight the decades of abuse residents have faced due to environmental problems. With the slow shutdown of the Valley Generating Station and the planned reframing of Whiteman airport, Pacoima is seeing increasing moves to develop green infrastructure in the community that can potentially improve the quality of life of residents. Already, green alleys and efforts to curb overheating have been able to provide solace in the form of outdoor spaces for residents. However, other communities in LA like Frogtown and Watts have seen how increasing healthy environmental infrastructure may lead to higher levels of gentrification due to realities like increased property value. This paper will explore how increasing green infrastructure may impact gentrification in Pacoima by looking at precedence in other Los Angeles neighborhoods, comparing Zillow data to observe changes in housing prices, and exploring demographic shifts. By understanding the lessons learned from these experiences, this paper will analyze ways to prevent similar events from happening in Pacoima.

## **Background**

### Green Infrastructure

The U.S. Clean Water Act describes green infrastructure as a variety of methods used to curb environmental problems (EPA, 2015). This can include the implementation of permeable surfaces, rainwater repurposing, bioswales, or even the planting of native plants. Green infrastructure includes the establishment of new methods of care to curb the impacts of city development. These projects can be implemented in small and large ways and provide residents

the opportunity to address many of the negative environmental impacts from current housing and city structures. For example, the use of concrete for driveways, roads, and sidewalks has made it so that rain can only flow into drains, flood streets, and even spread toxins. Green infrastructure can provide an opportunity to improve community interaction with the environment like collecting and reusing the water to increase urban water supply. Green infrastructure has also been used to address climate change by providing opportunities for adaptation.

### Gentrification

Gentrification involves the displacement of communities, businesses, and livelihoods. Typically, the process involves rising costs of living pushing out current residents in favor of newcomers. Not only does displacement disrupt housing, but it also disturbs community connections and ways of being, leading to complete restructuring and banishment of communities (Elliott-Cooper et al., 2019). For this paper, I will analyze the ways gentrification has changed the landscape of communities in LA and what notes of caution there may be for residents of Pacoima. Green infrastructure has been one way that gentrification has been spurred due to the variety of improvements to the quality of life that greening projects can offer. These projects may lead to housing becoming less affordable or renting building space unattainable for small businesses. There are many causes of gentrification, however, data sources like Zillow can provide information on the shifting costs of living in a neighborhood, which can then be compared to the installation of green infrastructure and its rebounding effects.

### Relevance to Pacoima

In Pacoima, issues of displacement and opportunities for affordable housing are important concerns of residents. Pacoima Beautiful has outlined the ways in which displacement and housing shape the landscape of their work in the TCC proposal. Through the formalization

of ADUs in the neighborhood and the potential development of Community Land Trusts, the organization is currently considering ways to manage housing access and quality for residents. At the same time, Pacoima is also finding ways to improve quality of life and reckon with environmental pollutants in the area through the creation of green infrastructure. From the implementation of green alleys to the conversations around what to do with the slow shut down of the Whiteman Airport, green infrastructure touches the lives and experiences of many residents in the community. However, previous instances of green infrastructure in LA communities with similar demographics may have led to increased levels of gentrification.

## **Methodology**

In order to conduct this research, I compared two Los Angeles neighborhoods, Frogtown and Watts, to understand how green infrastructure projects have impacted residents. Both neighborhoods have had varying experiences with the type of green infrastructure installed, community reaction to them, and experiences with gentrification. I used U.S. Census and American Community Survey data to measure shifts in race and ethnicity, income levels, and rental prices after green infrastructure projects were installed in the two case sites. I used data from Zillow to measure the shifting costs of housing in the two sites as well as the County as a whole. Lastly, I conducted a literature review that included research papers, news articles, and reports to understand several different perspectives on the relationship between green infrastructure and gentrification and the lived experiences of residents in these communities.

## **Research Findings**

### **Case Studies**

Gentrification across Los Angeles has been occurring for decades, highlighting a pressing need for housing reform and renter protections that provide LA residents with the safety

necessary to maintain their communities. In a few LA neighborhoods, gentrification has been tied to green infrastructure and the improvement of green spaces in these communities. We will analyze two Los Angeles neighborhoods, Frogtown and Watts to better understand the relationship between green infrastructure and displacement.

### Frogtown (Elysian Valley)

Frogtown is an East LA neighborhood that experienced the effects of gentrification during the mid-2010s. The neighborhood was partially vulnerable due to its low-income, mostly immigrant population (Strauss, 2015). Additionally, the neighborhood lies on the LA River, a site of many greening projects and infrastructure plans. The LA River Revitalization project involves several different actors including the City of LA, LADWP, Department of City Planning, Department of Transportation. In Frogtown, organizations like LA MAS and the Elysian Valley Arts Collective have worked directly with community members to address the issues that green infrastructures create. The LA River Revitalization project included the construction of a walking and bike path that would stretch from Frogtown to Downtown LA to connect several LA neighborhoods (LA Metro, 2021). Improvements also included a biking bridge to connect Frogtown to Cyprus Park and to the housing along the river which planned limited low-income occupancy (Barragan, 2018). This green infrastructure renovation opened the doors for high levels of investment into the community with little initial input from current community members (Strauss, 2015).

The LA River propelled rising housing prices as developers and cities saw the benefits of improved infrastructure at the river, similar to what occurred in other parts of LA (Strauss, 2015). In 2015, the neighborhood saw an influx of developers and new businesses resulting in higher costs of living (Strauss, 2015)). There has been a 55% increase in median home value,

compared to a 44% increase in LA county overall during the same time (Zillow, 2021). Renter costs increased 10% in the two-year time period and 21% in total over the last five years (LA Almanac, 2021). When community members were consulted over the changing of the LA River space, many sighted a desire for there to be no change at all and for there to definitely not be an increase in housing availability (Strauss, 2015). However, this resulted in current housing stock increasing in price and lower-income residents being pushed out or homeowners being bought out (Weiner, 2019).

### Watts

Watts is a South LA neighborhood, home to low-income, mainly Black residents (Leap, 2016). South LA, including Watts, has been dealing with issues of gentrification for several years which has only been exacerbated by the plans for Destination Crenshaw, SoFi Stadium, and the extension of the LA Metro line. In Watts, the Jordan Downs housing project, originally built as low-income housing, has seen increasing rates of rental prices, relating to the overall increased cost of living in the neighborhood (Leap, 2016).

In 2018, there were several solar programs in Watts that provided residents with free or reduced-priced solar installation on their properties in an effort to reduce utility costs and create green jobs (GRID Alternatives, 2018). These include projects lead by Watts Rising, GRID Alternatives, RN-LA, Habitat LA, and private agencies like Pick My Solar, and government agencies like the Housing Authority of the City of Los Angeles. Since the implementation of these residential projects, there have been low levels of change to neighborhood makeup (Statistical Atlas, 2021). Housing prices in Watts have been on a steady increase however, the rate of growth seems to be in line with all of Los Angeles and has not had a particularly sharp increase (Zillow, 2021). In the last two years, average rental prices in Watts stayed relatively the

same (LA Almanac, 2021). Based on this, it can be inferred that the green infrastructure projects had little influence on the gentrification that was happening in the neighborhood. During this time period, Watts also saw an increase in the development and refurbishing of the Jordan Downs housing project. This could relate to feelings of gentrification that are highlighted by some members of the community as found in my literature review (Leap, 2016).

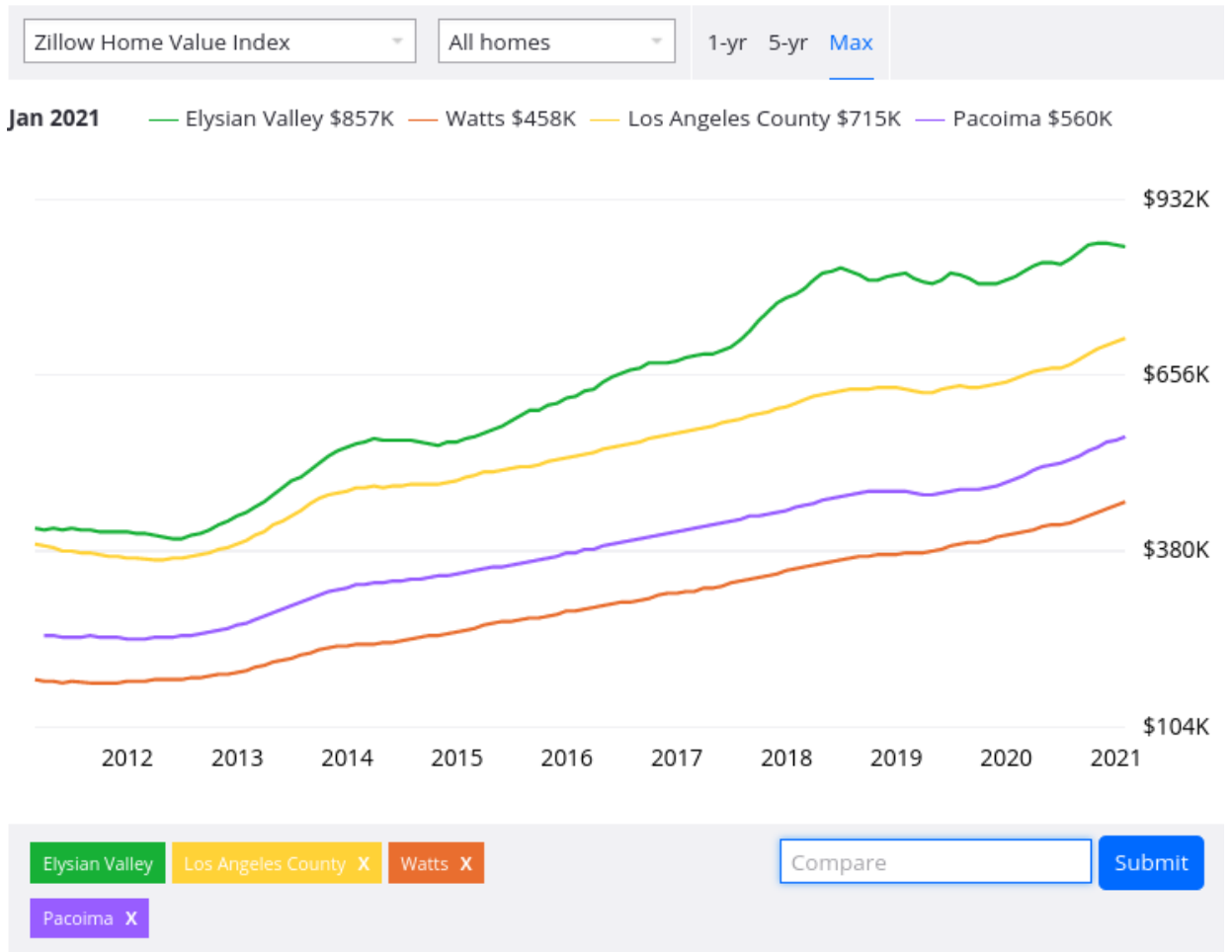


Figure 1. Home Value Index (Zillow, 2021)

## Considerations

### Transportation

One green infrastructure project that presents issues for communities like Watts, Frogtown, and Pacoima is transportation. LA metro’s expansion to San Fernando Valley

highlights a heightened sense of caution for the changes the transportation system will bring (Sotero, 2020). In Frogtown, the LA River Revitalization provided an opportunity for transportation to be more accessible to residents who could now use the path to bike or walk to metro stations (LA Metro, 2021). It also meant that living in these areas became more lucrative, which may have been a factor in the rapid changes in Frogtown. The light rail expansion into San Fernando Valley presents an additional challenge for Pacoima residents as they contend with how it will influence displacement in the neighborhood. Therefore, it is important to implement protections for current residents. This may include honoring the specific context of the neighborhood, ensuring new development projects center equity, and creating opportunities to adjust community protection plans as new circumstances arise (Cranor et al., 2015). Figures 2-4 showcase transportation infrastructure in Frogtown, Watts, and Pacoima.



Figure 2. LA Metro & LA River improvements



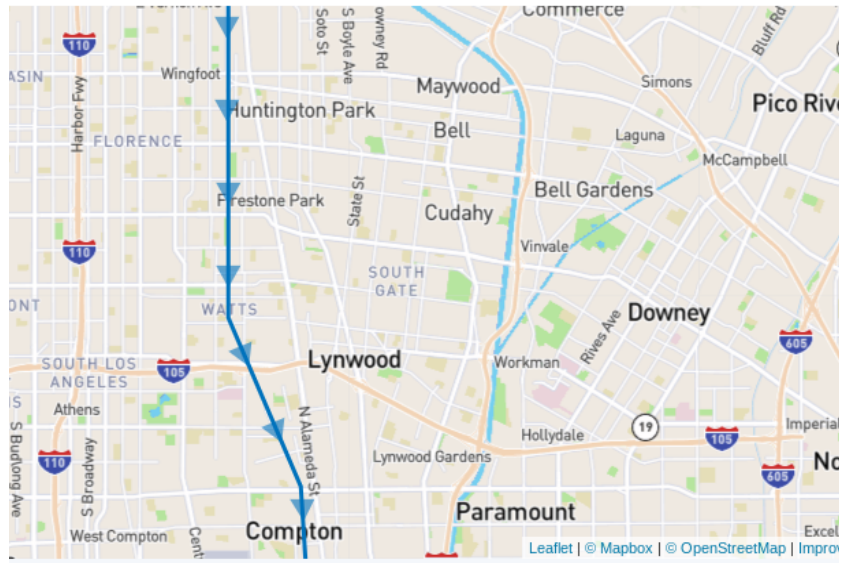


Figure 3. LA Metro & Watts



Figure 4. San Fernando Valley & Light Rail

Scale

Another important consideration that the experiences Frogtown and Watts presented is the issue of scale for both of these green infrastructure projects. Frogtown experienced a community-level green infrastructure implementation that shifted not only individual experiences but also the overall make-up of the community. Watts on the other hand experienced green infrastructure projects at the residential level, which may have shifted personal home value but has not resulted in major changes in the neighborhood at large. This speaks to the larger issue of what level of neighborhood improvement is the “right” level, to prevent displacement. However, one of the key lessons from both of these case studies is the process by which green infrastructure projects were implemented.

In the case of Frogtown, community input was not the first step and little was done by the agencies implementing these plans to address community knowledge around the effects of the green infrastructure projects, instead, community-based agencies filled in those gaps and attempted to address many of the concerns of the community. However, the majority of solar projects in Watts sought to include residents at every level of the project’s implementation, from planning to participating in government advocacy to community-based outreach (GRID Alternatives, 2020). Therefore it is important to consider how all green infrastructure projects can begin and end with the community in mind, preparing for the unexpected realities that come with gentrification like the speed at which it happens, the ways communities resist, and more.

### Concerns for Pacoima

Pacoima is the site of many innovative environmental projects that are providing opportunities for healthier spaces for residents. The neighborhood has several environmental health concerns like increased urban heating, industrial pollution, and poor water management. Several efforts have been made to shape the landscape of these issues including projects like

green alleys. The green alleys in Pacoima provide community members with the opportunity to have accessible green space that improves physical and mental health and can potentially serve as sites of community building. The incoming Light Rail, restructuring of the Whiteman Airport, sunsetting of the Valley Generating Station, expansion of green alleys, and other potential green infrastructure projects present several opportunities for issues with displacement. At the same time, the benefits of these green infrastructure projects can potentially improve the quality of life of residents and create jobs.

As a result, there are three main implications for what this research means for green infrastructure development in Pacoima. The first is that the size and scale of the project are important and may relate to the rate of gentrification in a neighborhood. The second lesson is that historically under-resourced neighborhoods and the stakeholders in these spaces should consider how projects will benefit residents that are already there first and the surrounding community second. Lastly, it is important to analyze the ways to curb the effects of green gentrification which could include offering well-paid green jobs, increasing affordable housing before there is a problem, and providing renter and homeowner assistance.

## **Limitations**

There were several limitations of this white paper. First, the research was limited by the types of data available including neighborhood-level data regarding the demographics of residents. It also did not include community voice in a meaningful way which may have provided a stronger qualitative understanding of the experiences of gentrification in the two case study neighborhoods. It is lastly important to consider that not as much time has passed in Watts compared to Frogtown which could mean that we have not seen the full effect of the Watts residential solar programs.

## **Conclusion and Further Research**

This white paper only scratches the surface of what can be understood about the connection between green infrastructure and gentrification. The implementation of green infrastructure can help to improve health, community connection, job security and so much more. In Pacoima, there are several opportunities for green infrastructure projects to shape the lives of residents including green alleys, redesigning industrial pollution sites, implementing residential projects, and the Light Rail. However, it is important to consider the degree to which these projects will displace families and destroy small businesses. Some possibilities for further research include conducting a qualitative survey of current and former residents' experiences with gentrification. This will help to explain if and how people feel about changes in their neighborhoods as well as the social experience of projects that were considered community improvements.

Additionally, it may be useful to understand the differences seen with large-scale and residential projects within a single neighborhood and how this may relate to rates of gentrification. Another opportunity may be to explore how anti-displacement housing models can prevent gentrification and provide protections for residents. Lastly, conducting this same research with other locations across the U.S. can further inform best practices for project implementation. Our two case studies of Frogtown and Watts highlighted that experiences with gentrification are context-specific. Ultimately, all green infrastructure projects that aim to improve community conditions, should be implemented with and for the needs of communities that already exist at the center.

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UNIVERSITY OF CALIFORNIA

Los Angeles

Tracking the Light Rail's  
Impacts on and Services for  
Pacoima Businesses

A white paper submitted in partial satisfaction  
of the requirements for the degree Master of Urban and Regional Planning

by

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2021

## Abstract

The Los Angeles County Metropolitan Transportation Authority (“Metro”) is proposing to construct a light rail along Pacoima’s main commercial corridor, Van Nuys Boulevard, and along San Fernando Road, posing a threat to local businesses. Known as the East San Fernando Light Rail Project, the new line and its construction will have a significant impact on local businesses. In addition to these transit-related displacement pressures, Pacoima Beautiful and its partners are working on displacement avoidance strategies for local businesses in response to large green infrastructure investments from the Transformative Climate Communities grant. This white paper supports this by 1) Identifying the businesses that the light rail will displace through site acquisition, and the services that these businesses currently provide; and 2) Analyzing the key features and services of Metro’s Business Solution Center model in South Los Angeles, the same model that will be used to mitigate construction impacts on Pacoima businesses.

To identify displaced businesses, I examined LA Metro’s Final Environmental Impact Report, the LA County Assessor Portal, Google Maps, and Yelp. I then reviewed LA Metro Board Minutes, Metro’s blog *The Source*, and success stories on the center’s website to analyze the key features of the Crenshaw/LAX Business Solution Center. This research revealed that Metro will acquire 19 Pacoima parcels, impacting 11 businesses. Further, three of the Crenshaw/LAX Business Solution Center’s key features—including local leadership; a wide range of services provided; and a broad geography of eligible businesses—may help inform Pacoima Beautiful’s displacement avoidance work. More research is needed to better understand the impacts of Metro’s site acquisition plans on the Pacoima community and the ways the Business Solution Center model can support Pacoima businesses.



## **Introduction**

The Los Angeles County Metropolitan Transportation Authority (“Metro”) is proposing to construct a light rail along Pacoima’s main commercial corridor, Van Nuys Boulevard, and along San Fernando Road, posing a threat to local businesses. Known as the East San Fernando Light Rail Project, the new line and its construction will impact businesses along these corridors in several ways. First, to create room for a curve in the right-of-way, Metro will acquire 19 Pacoima parcels, nearly half of which are dedicated to commercial uses. Businesses on these parcels will be forced to relocate and risk going out of business altogether. In addition, Pacoima businesses along Van Nuys Boulevard and San Fernando Road will be disrupted throughout construction, which may have long-term impacts on business health. Though outside the scope of this paper, studies also show that transit investments can contribute to long-term gentrification, which may impact local businesses over time (Chapple et al., 2017).

In addition to displacement pressures from this major transit investment, Pacoima Beautiful and its partners have identified business displacement as a key area of concern for the community due to the influx of significant green infrastructure funding. In 2018, the California Strategic Growth Council awarded the Green Together collaborative, a collective led by Pacoima Beautiful, a \$23 million Transformative Climate Communities (TCC) grant to fund green infrastructure projects in Pacoima and Sun Valley. To address displacement concerns, this grant requires awardees to implement a Displacement Avoidance Plan (DAP). The Green Together collaborative’s DAP prioritizes commercial displacement avoidance strategies such as an inventory of business support programs and grant funds. Given Pacoima Beautiful’s planned work in this area, and the fact that Van Nuys Boulevard represents a major commercial corridor

in Pacoima, it is important to better understand the light rail's impact on local businesses and potential resources.

This paper helps further the goals of the Displacement Avoidance Plan in two ways. First, I identify the businesses that the light rail will displace through site acquisition and the services that these businesses currently provide. This includes a short discussion of the laws that protect these displaced businesses. Second, to understand Metro's efforts to mitigate construction impacts on local businesses and how this might inform the Displacement Avoidance Plan, I then analyze the key features and services of Metro's Business Solution Center model, as applied in South Los Angeles for businesses along the Crenshaw Boulevard corridor.

## **Business Displacement from LA Metro Site Acquisition**

As part of the East San Fernando Light Rail Project, Metro plans to acquire several parcels in Pacoima to make room for the new transit infrastructure. The project's Final Environmental Impact Report ("Final EIR") outlines which parcels will be acquired, though this list is still subject to change. In December 2020, the Metro Board certified the Final EIR and instructed the agency to move forward with the project in two phases: The first phase spans from Van Nuys to Pacoima along Van Nuys Boulevard, while the second phase runs along San Fernando Road from Pacoima to Sylmar (Sotero, 2020; "East San Fernando Light Rail Transit Project," n.d.). Because the majority of Pacoima parcels to be acquired lie at the intersection of the two phases—at the corner of San Fernando Road and Van Nuys Boulevard—it is not clear which Pacoima parcels the agency will acquire imminently.

However, for the purposes of this paper, I rely on the acquisition plans in the Final EIR, assuming that the parcel acquisitions will remain as listed in December 2020 (Sotero, 2020;

Federal Transit Administration, n.d.). This report identifies 19 parcel acquisitions in Pacoima, which are anticipated to begin in 2021 (“East San Fernando Light Rail Transit Project,” n.d.; KOA Corporation, 2019; US DOT & LA Metro, 2020). Acquisition negotiations are estimated to last 24 to 36 months. This research could not confirm whether or not this process has started.

To identify displaced businesses and business types, I used a combination of the Final EIR, the Los Angeles County Assessor Portal, Google Maps, and Yelp. The Final EIR provided the addresses for acquired parcels, and Google Maps provided business addresses; however, in many instances the parcel addresses did not match those for the businesses. To reconcile these differences, I compared the business addresses with those listed on each parcel in the Los Angeles County Assessor Portal maps, as in many cases the Assessor Portal showed multiple addresses on each parcel. I then referred to Figure 1, Figure 2, and Figure 3, excerpts from the Final EIR, to confirm the physical location of all parcels (US DOT & LA Metro, 2020). To determine the business type, I used a combination of Google Maps and Yelp to match business addresses with names and services. Lastly, I based displacement types—partial versus full—for each business on the featured figures provided by Metro. For partial acquisitions, Metro will acquire a portion of the selected parcel, and for full acquisitions, Metro will acquire the entire parcel (US DOT & LA Metro, 2020).



**Figure 4.2-1 - Sheet 6  
LPA - LRT Alternative Acquisitions  
Van Nuys Corridor Rapidway**



*Figure 1: Metro Final EIR Real Estate and Acquisitions Report – Van Nuys/San Fernando Road Acquisitions*



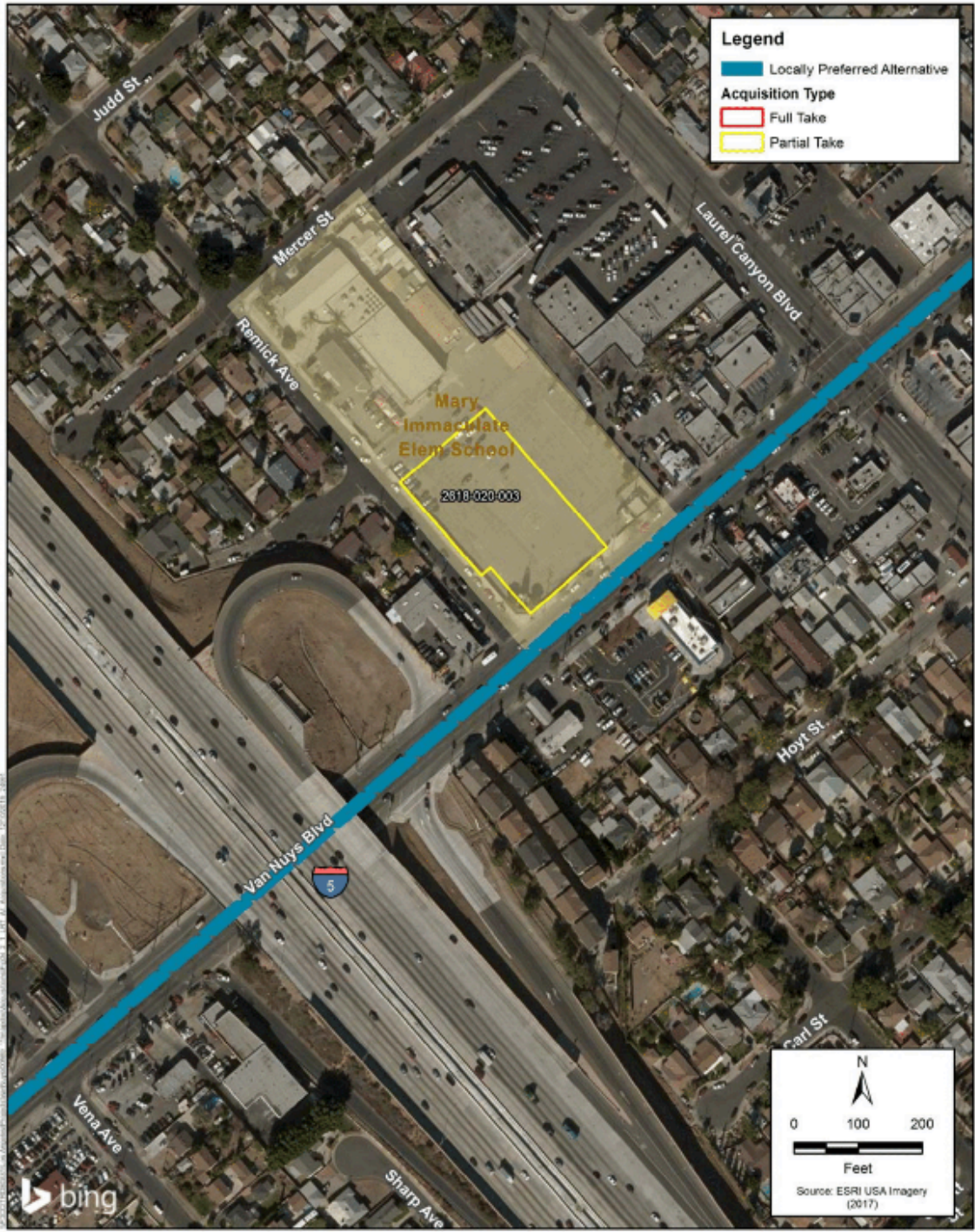


**Figure 4.2-1 - Sheet 5  
LPA - LRT Alternative Acquisitions  
Van Nuys Corridor Rapidway**



*Figure 2: Metro Final EIR Real Estate and Acquisitions Report – Plaza Pacoima Acquisition*





**Figure 4.2-1 - Sheet 7  
LPA - LRT Alternative Acquisitions  
Van Nuys Corridor Rapidway**

*Figure 3: Metro Final EIR Real Estate and Acquisitions Report – Mary Immaculate Elementary School Acquisition*

In total, Metro’s site acquisitions will directly impact 11 businesses on nine parcels, mainly along a 0.1 mile stretch of Van Nuys Boulevard near the intersection with San Fernando Road, as shown in Table 1. These nine parcels account for nearly half of the 19 acquisition sites and host a wide range of businesses. As a result, a range of services will also be interrupted. More specifically, the light rail will fully displace a free legal clinic, a women’s medical office, a shop that stocks ice cream carts (Paletas Pacoima), a travel agency, a market, a restaurant, and a metal shop. As a result of full acquisition, these businesses will no longer be able to operate on these sites. The project will also partially impact a veterinary hospital, barbershop, dental office, and commercial plaza. Metro’s plans do not yet indicate what partial site acquisition will mean for this second group of businesses. With such a diversity of services displaced in just a few commercial blocks, there is the potential for significant service gaps to occur in Pacoima as a result of the light rail.

Table 1: Metro Site Acquisition Plans for Pacoima

Metro Site #	AIN	Address	Acquisition Type	Intended Use	Existing Use (Businesses Bolded)	Business Type/Service
32	2618-020-003	10390 Remick Ave	Partial	TPSS 9A	Mary Immaculate Elementary School Parking Lot	School
33	2619-017-036	13313 Van Nuys Blvd	Full	Alignment / TPSS 10A	<b>Neighborhood Legal Services<sup>1</sup></b>	Free legal clinic
34	2619-017-012	13309 Van Nuys Blvd	Full	Alignment	<b>Century Women Medical Group</b>	Medical office
35	2619-017-011	13303 Van Nuys Blvd	Full	Alignment	<b>Paletas Pacoima</b>	Market
36	2619-017-010	13301 Van Nuys Blvd	Full	Alignment	<b>Salcido Tours / La Bendicion Market<sup>2</sup></b>	Travel Agency / Market
37	2619-017-009	13291 Van Nuys Blvd	Full	Alignment	<b>El Paseo<sup>3</sup></b>	Restaurant

<sup>1</sup> Business’ actual address (13327 Van Nuys) does not match Metro records. Business’ location assumption is based on Assessor Portal map and Google Maps, which indicate that business is on the same parcel as 13313 parcel.

<sup>2</sup> Businesses’ actual addresses (13295 and 13297 Van Nuys) do not match Metro records. Businesses’ location assumption is based on Assessor Portal map, which indicates that 13295 and 13297 are located on the same parcel as 13301.

<sup>3</sup> Business’ actual address (13293 Van Nuys) does not match Metro records. Business’ location assumption is based on Assessor Portal map, which indicates that 13293 is located on the same parcel as 13291.

38	2619-017-008	13287 Van Nuys Blvd	Full	Alignment	Iglesia Pentecostal / <b>Superior Metal &amp; Wood</b>	Place of Worship / Metal Shop
39	2619-017-007	13283 Van Nuys Blvd	Partial	Alignment	<b>Pacoima Pet Clinic</b>	Veterinary Hospital
40	2619-017-031	13281 Van Nuys Blvd	Partial	Alignment	<b>Willy's Barbershop #2 / Plenty O' Smiles<sup>4</sup></b>	Barbershop / Dental Office
41	2619-017-035	10823 San Fernando Rd	Full	Alignment	N/A	Parking Lot
42	2619-017-002	10823 San Fernando Rd	Full	Alignment	N/A	Parking Lot
43	2619-017-037	N/A San Fernando Rd	Full	Alignment	N/A	Vacant
44	2619-017-024	13320 Pinney St	Full	Alignment	N/A	Not identifiable
45	2619-017-025	13320 Pinney St	Full	Alignment	Iglesia Fuente de Agua Viva	Place of Worship
46	2619-017-026	N/A San Fernando Rd	Full	Alignment	N/A	Vacant
47	2619-017-023	13322 Pinney St	Full	Alignment	N/A	Single Family Home
48	2619-017-022	13326 Pinney St	Full	Alignment	N/A	Single Family Home
49	N/A	N/A (alley between Pinney and Van Nuys)	N/A	Closure of Public Right-of-Way	N/A	Vacant
50	2535-002-018	13550 Paxton St	Partial	Road Widening	<b>Plaza Pacoima</b>	Various Businesses

It is important to note that there have been several major changes to the plan since the Draft EIR, which impact how businesses will be impacted. In the Draft EIR, all parcels listed above were to be fully acquired, though the impacted corridor was largely restricted to Van Nuys Boulevard and San Fernando Road (KOA Corporation, 2019). This would have resulted in the full displacement of businesses like Willy's Barbershop #2, Pacoima Pet Clinic, and Plenty O' Smiles Dentistry. Though it is not yet clear what sort of impact a partial acquisition of these properties will have on the businesses, as well as on the Plaza Pacoima site, it may be viewed as an improvement that these businesses will no longer be fully displaced.

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<sup>4</sup> Business' actual address (13279 Van Nuys) does not match Metro records. Business' location assumption is based on Assessor Portal map, which indicates that business is on the same parcel as 13281 parcel.



## **Support for Displaced Businesses: The Uniform Act and California Code**

Under federal and state law, Metro is required to provide relocation assistance and compensation to displaced businesses and property owners, per the Uniform Act; California Government code, Section 7260; and California Code of Regulations, Title 25, Division 1, Chapter 6 (US DOT & LA Metro, 2020). The Uniform Act requires federal or federally assisted projects to compensate or assist displaced businesses and residents. California state law provides similar protections to projects that do not utilize federal funds. In its Final EIR, Metro acknowledges that tenants and property owners displaced through the light rail project will be eligible for these protections; however, the agency also notes that there are no plans to provide additional mitigation measures beyond the law's requirements (KOA Corporation, 2019).

Though the details of these protections are outside the scope of this paper, the Uniform Act provides several key protections that are worth a brief mention. First, the act provides protections for residential and commercial displaced parties, which will be helpful in Pacoima where both business owners and two residents will be displaced ("Relocation Assistance and Real Property Acquisition Policies Act of 1970," 2020). Second, the law requires that businesses be compensated for both moving and business re-establishment expenses. Third, the agency must provide at least 90 days' notice before an owner or tenant must vacate the acquired parcel. This research did not evaluate whether these protections have been sufficient in practice.

## **Further Research Considerations**

More research is needed to identify the protections that the Uniform Act and California Code will provide to displaced Pacoima businesses. Further, there needs to be more engagement with Metro to confirm the current acquisition sites, identify the impacts of partial acquisition on

local businesses, and understand whether the acquisition process has started. For those businesses that will be fully or partially displaced, more research is needed to understand which of these businesses are still operating, how they serve local residents, if they are tenants or property owners, and whether they have plans to relocate, and if so, to which locations.

## **Support for Local Businesses During Construction: Crenshaw/LAX Transit Project Business Solution Center**

The Crenshaw/LAX Transit Project is an under-construction light rail that will connect Los Angeles' existing transit system to the Los Angeles International Airport (Crenshaw/LAX Transit Project, n.d.). The planned route runs through South Los Angeles and along Crenshaw Boulevard, a landmark corridor that is often referred to as “the main street of black LA” (Meares, 2019). Community groups like the Crenshaw Subway Coalition, who have organized the Crenshaw community around this transit project, have expressed concerns about the impact that this project could have on the small business community in this area (Crenshaw Subway Coalition, n.d.).

As one strategy for supporting local businesses affected by light rail construction on Crenshaw Boulevard, Metro runs a pilot Business Solution Center dedicated to the Crenshaw/LAX Transit Project. This program provides one-on-one assistance during construction to businesses along the transit corridor. In October 2019, the Metro Board made permanent the pilot Business Solution Center, requiring centers for all Measure M light rail projects (“Metro Business Solution Center Motion/Motion Response,” 2019). Therefore, as a Measure M project, Pacoima businesses along the East San Fernando Light Rail will have access to these services (“East San Fernando Light Rail Transit Project,” n.d.). In fact, Metro has

already undertaken a feasibility study for an East San Fernando Business Solution Center (Chen Ryan Associates, 2019).

Given that a Business Solution Center is planned for the East San Fernando Light Rail corridor, and given that the Crenshaw/LAX line also runs through a historic and cultural center of the city, information on the key features of the Crenshaw Business Solution Center will be useful for Pacoima Beautiful and local businesses. Therefore, I provide a high-level summary of the center's origins, services, and business eligibility criteria. I then provide a summary of the center's key features, which may help inform Pacoima Beautiful's business displacement avoidance work.

To identify the background and key features of the Crenshaw/LAX Transit Project Business Solution Center, I reviewed Metro Board Minutes, Metro's blog *The Source*, as well as success stories on the center's website. Businesses featured on the site include Richard's Auto Electric & Repair, Crenshaw Slauson Family Dentistry, and D.A.L. Tobacco & Mini Market ("Success Stories," n.d.). I identified these three businesses to study due to their similarity to Pacoima businesses along Van Nuys Boulevard.

Metro established the Crenshaw center in July 2014 ("Regular Board Meeting Board of Directors," 2014; "Metro Business Solution Center Motion/Motion Response," 2019). Since its inception, the center has been run by a third-party operator, Del Richardson & Associates (DRA), a workforce development consulting firm located in Hollywood (Hyman, 2014; "About Us," n.d.). DRA is part of a collaborative of business support and case management organizations that also provide services for the business center. Other members are Vermont Slauson Economic Development Corporation—a community-based non-profit and Community Development Financial Institution based in South Los Angeles—and the Los Angeles Urban

League—an advocacy organization focused on business and workforce development and also located in South Los Angeles (“BSC Collaborative,” n.d.). Together, these organizations provide a wide range of services to local businesses on the corridor, such as one-on-one business development, website development and marketing, financing and capital, and general technical assistance (“BSC Services,” n.d.). Specialty businesses, such as cosmetology, can also receive more specialized support.

The center originally provided support services only to businesses located on Crenshaw Boulevard between 48<sup>th</sup> and 60<sup>th</sup> Streets, given the large number of small businesses located on this street segment (“Crenshaw/LAX Project Business Assistance Program,” 2014). However, following a 2016 assessment that found that greater than 60% of businesses seeking services came from outside this segment of the corridor, Metro expanded the program to support all businesses along the Crenshaw/LAX alignment (“Metro Business Solution Center (BSC) Motion/Motion Response,” 2019). As of early 2019, the center had provided support to more than 300 such businesses (“We’re helping local businesses as we build,” 2019).

From the business success stories listed on the Business Solution Center website and from Metro Board reports, several key themes emerge about the center that may be helpful for Pacoima Beautiful and its partners: The center’s local presence; the wide range of services provided; and the broad geography of eligible businesses.

The Business Solution Center Collaborative, which consists of three local organizations, runs the center and its day-to-day operations. Metro has acknowledged that having a local team run the center has been integral for building trust with local businesses (“Metro Business Solution Center (BSC) Motion/Motion Response,” 2019). This trust is reflected in the featured success stories, many of which reference the names of center representatives who helped

business owners most, also highlighting the center's ability to provide personalized support to local businesses ("Success Stories," n.d.). This localized structure implies that there may an opportunity for East San Fernando Valley organizations like Pacoima Beautiful to be involved in the area's Business Solution Center.

In addition, the testimonials demonstrate the wide range of services provided. For example, the center supported Richard's Auto with obtaining loans and other capital to rebuild his business following a fire ("Success Stories," n.d.). This included supporting the business owner with submitting loan applications, coordinating with lenders, and reviewing and vetting loan proposals. The center also supported D.A.L. Tobacco and Mini Market with designing the business' first website, reducing debt, and negotiating its building lease. Lastly, Crenshaw Slauson Family Dentistry benefitted from services related to branding, IT support, and permitting. This wide range of services may make the center well-suited to support the plethora of business types in Pacoima.

Lastly, the center has expanded beyond the targeted corridor segment with a high concentration of businesses, and now provides services to all businesses along the corridor. As previously mentioned, this was due in part to the demand for services from businesses outside the defined service area. Therefore, Pacoima Beautiful may consider thinking broadly about which businesses to target with its outreach and workshops.

### **Future Research Considerations**

These findings can inform Pacoima Beautiful's displacement avoidance work. First, based on its local governance structure, the Business Solution Center model may present opportunities for Pacoima Beautiful and its partners to engage in the creation and operation of

the future East San Fernando center. In addition, the wide range of services and eligible businesses may be well-suited for Pacoima, and its broad geography can help inform Pacoima Beautiful's outreach plans and workshops.

However, more research is needed to fully understand how the Business Solution Center model may support displacement avoidance in Pacoima. First, future research related to Crenshaw should seek to understand how community advocacy accompanied the center's development and the resources that it ultimately provides to local businesses. This could also include a comparison of community organizing in other communities with Business Solution Centers, such as Little Tokyo. In addition, there could also be research into how Metro identifies collaborative members to understand opportunities for groups like Pacoima Beautiful to be involved. In Pacoima, there needs to be more research on current local business needs, especially for those that will be directly impacted by light rail construction, to understand what resources would be helpful. Pacoima Beautiful could achieve this by surveying local businesses.

## **Conclusion**

The East San Fernando Light Rail Project threatens to negatively impact small businesses in Pacoima through site acquisition, construction interruptions, and potential long-term gentrification. Metro's site acquisition plans will directly impact 11 businesses, leaving gaps in Pacoima's existing services. For businesses that will remain in place through the light rail construction, experiences in other transit-oriented communities such as Crenshaw Boulevard in South Los Angeles can provide insights. Pacoima Beautiful can learn from the advocacy and services in these communities to develop initiatives that support local businesses.

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