## Title

Enhancing Mobility and Access for Carless & Car-Deficit Households in Los Angeles



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CAPSTONE PROJECT REPORT

UCLA Institute of Transportation Studies

UCLA Lewis Center for Regional Policy Studies

# Enhancing Mobility and Access for Carless & Car-Deficit Households in Los Angeles

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Client: Los Angeles Department of Transportation (LADOT)

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**16. Abstract**

This project focuses on carless and car-deficit households in the Westlake-MacArthur Park and Pacoima-Panorama City neighborhoods that have experienced challenges in traveling to their destinations due to their limited access to household vehicles. Car ownership in the U.S. is causally linked with positive economic outcomes such as being employed, gaining employment, working additional hours, and earning higher wages (Brown, 2017). In the U.S., however, "carless" households, or zero-car households, make up 7% of all households, and "car-deficit" households, households with fewer cars than drivers, make up 15% of all households (Blumenberg et al., 2020). Those who do not own a vehicle or do not always have access to one due to financial and health/age constraints, however, are left to navigate on modes other than the private vehicle to meet their transportation needs.

Using quantitative and qualitative methods, I find that carless and car-deficit respondents from Pacoima-Panorama City reported carpooling and riding the bus as their most used transportation modes, whereas Westlake-MacArthur Park reported higher use of transit such as bus and rail. Over half of all carless and car-deficit respondents, however, shared that they have skipped and/or rescheduled trips to healthcare, school, work, and other destinations due to transportation issues. Furthermore, both neighborhoods reported similar concerns related to safety, time associated with transit use, and saw low rates of participation in public programs that aim to alleviate the cost of transportation.

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The Institute of Transportation Studies at UCLA acknowledges the Gabrielino/Tongva peoples as the traditional land caretakers of Tovaangar (the Los Angeles basin and So. Channel Islands). As a land grant institution, we pay our respects to the Honuukvetam (Ancestors), ‘Ahiihirom (Elders) and ‘Eyoohiinkem (our relatives/relations) past, present and emerging.

## Disclaimer

This report was prepared in partial fulfillment of the requirements for the Master in Urban and Regional Planning degree in the Department of Urban Planning at the University of California, Los Angeles. It was prepared at the direction of the Los Angeles Department of Transportation (LADOT) as a planning client. The views expressed herein are those of the authors and not necessarily those of the Department, the UCLA Luskin School of Public Affairs, UCLA as a whole, or the client.

# Enhancing Mobility and Access for Carless & Car-Deficit Households in Los Angeles

UCLA Institute of Transportation Studies

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# Executive Summary

Car ownership in the U.S. is causally linked with positive economic outcomes such as being employed, gaining employment, working additional hours, and earning higher wages (Brown, 2017). In the local context of Los Angeles, there are twelve times more jobs accessible in one hour by car than by transit for those living in the city, according to LADOT's 2021 Annual Report. In the U.S., however, “carless” households, or zero-car households, make up 7% of all households, and “car-deficit” households, households with fewer cars than drivers, make up 15% of all households (Blumenberg et al., 2020).

Those who do not own a vehicle or do not always have access to one due to financial and health/age constraints, however, are left to navigate on modes other than the private vehicle to meet their transportation needs. Involuntarily carless households, for example, are less mobile than motorized households – as they took half as many trips which were also shorter in distance, longer in duration, and skewed towards transit, walking, and bicycling (Blumenberg et al., 2020, Mitra & Saphores, 2020). Car-deficit households similarly travel fewer miles, take fewer trips, and are more likely to use public transit than households with one or more vehicles per driver (Blumenberg et al., 2020). This project investigates transportation access and challenges at the neighborhoods level from the perspective of carless and car-deficit households in the City of Los Angeles.

## Key Findings

The Westlake-MacArthur Park and Pacoima-Panorama City neighborhoods in Los Angeles are both low-income predominantly communities of color that report large concentrations of transit users and zero-car households. In comparing their travel patterns in an online survey, carless and car-deficit respondents from Pacoima-Panorama City reported carpooling and riding the bus as their most used transportation modes, whereas Westlake-MacArthur Park reported higher use of transit such as bus and rail.

Over half of all carless and car-deficit respondents shared that they have skipped and/or rescheduled trips to healthcare, school, work, and other destinations due to transportation issues. Carless/car-deficit households and fully-equipped households are skipping and rescheduling trips at similar rates. This could be explained by the sample – all respondents in the study are low-income and income is a large determinant of travel outcomes, according to the literature. Low-income households will modify their travel behavior to minimize the cost of transportation by reducing the total miles traveled, reducing the number of trips, decreasing trip duration (Blumenberg & Agrawal, 2011).

Despite differences in travel patterns, residents of both neighborhoods expressed great concern about safety, especially at night, when walking and accessing transit. In addition, survey findings reveal the lack of usable sidewalks, from the hazardous conditions of sidewalks or the complete lack of sidewalks on some streets, in both Westlake-MacArthur Park and Pacoima-

Panorama City. Furthermore, survey respondents reported concerns related to time associated with travel, such as being too far from transit, waiting too long for transit, and finding transit to be unpredictable. Lastly, respondents in both neighborhoods reported low awareness and participation of public transportation programs such as Metro LIFE (free transit trips) and BlueLA (car-sharing) that aim to alleviate the travel burdens of low-income households.

## Recommendations

This research provides insight into the transportation barriers of carless and car-deficit households in Westlake-MacArthur Park and Pacoima-Panorama City. The findings reveal a need for interventions that improve design safe access to transit stops, rethinking safety on transit, expand transportation services and programs, consider universal auto access, and continuing public outreach. Specific interventions include the following:

- Improved nighttime visibility
- Provide safe transportation connections addressing first/last mile concerns
- Invest in community safety initiatives such as unarmed, non-law enforcement escorts off and on transit
- Improvement to pedestrian infrastructure, specifically sidewalk repairs
- Protect transit riders from weather using bus shelters to create shade
- Investing in alternative modes of policing
- More frequent and reliable transit service
- Expand carshare and ridehailing services
- Increased public outreach

# Introduction

Car ownership in the U.S. is causally linked with positive economic outcomes such as being employed, gaining employment, working additional hours, and earning higher wages (Brown, 2017). In the local context of Los Angeles, there are twelve times more jobs accessible in one hour by car than by transit for those living in the city, according to LADOT's 2021 Annual Report. In the U.S., however, “carless” households, or zero-car households, make up 7% of all households, and “car-deficit” households, households with fewer cars than drivers, make up 15% of all households (Blumenberg et al., 2020).

Those who do not own a vehicle or do not always have access to one due to financial and health/age constraints, however, are left to navigate on modes other than the private vehicle to meet their transportation needs. Involuntarily carless households, for example, are less mobile than motorized households – as they took half as many trips which were also shorter in distance, longer in duration, and skewed towards transit, walking, and bicycling (Blumenberg et al., 2020, Mitra & Saphores, 2020). Car-deficit households similarly travel fewer miles, take fewer trips, and are more likely to use public transit than households with one or more vehicles per driver (Blumenberg et al., 2020). This project investigates transportation access and travel patterns from the perspective of carless and car-deficit households in the City of Los Angeles.

The Los Angeles Department of Transportation (LADOT) leads transportation planning, project delivery, and operations in the City of Los Angeles. In accordance with their Strategic Plan, LADOT’s goal is to develop a safe, livable, and well-run transportation system in the city and region. The agency’s mission includes “a vision that in Los Angeles, all people have access to safe and affordable transportation choices that treat everyone with dignity and support an equitable, thriving city”.

Recently adopted initiatives such as the City’s Universal Basic Mobility (UBM) approach to transportation, or the initiative “to eliminate the functional and/or structural immobility people experience due to systemic marginalization, cost burdens, and other forms of exclusion,” emphasizes the need to address unequal transportation across race, ethnicity, income, geography, and other identities. Disparities in transportation access have historically manifested through early freeway development in the mid-twentieth century combined with historic housing redlining practices that increased racial segregation and intensified the concentration of poverty in Los Angeles. A UBM framework involves remedying spatial inequities related to transportation and prioritizing investments in neighborhoods harmed by systemic racism and marginalization. This objective includes investing in areas characterized by limited mobility options, such as communities with high rates of households lacking car access and high-quality transit, and neighborhoods with high concentrations of low-income, residents of color.

This project focuses on carless and car-deficit households that have experienced challenges in traveling to their destinations due to their limited access to household vehicles. I identify their travel patterns and barriers to essential resources and services.  Based on these data, I then

identify targeted solutions that LADOT can implement to enhance mobility options and improve the overall quality of life for car-deficit households in the city.

**In this report, I address the following three research questions:**

1. Where are carless and car-deficit households concentrated in the City of Los Angeles?
2. What are the mobility challenges faced by car-deficit households in their neighborhoods? What concerns do they consider in their transportation decision-making process based on their local context?
3. What are potential interventions to address these concerns?

To answer these questions, I utilized quantitative and qualitative methods derived from similar transportation studies, including spatial analysis, interviews, and surveys. The findings from the study can inform LADOT on ways to identify and prioritize areas for place-based investments and develop adequate policy and programs that address the travel issues experienced by carless and car-deficit households.

Based on my findings, at the end of the report, I provide recommendations to enhance the mobility of carless and car-deficit households. These interventions can improve both their transportation experience and accessibility to opportunities.

# Literature Review

The travel patterns and behavior of carless and car-deficit households have long been under-researched. A few recent studies have established widely accepted definitions of what constitutes a “carless” or “car-deficit” household. Based on these definitions, scholars have examined differences in the characteristics and the travel behavior of households with varying levels of automobile access.

## Defining “Carless” and “Car-Deficit”

“Carless” households have zero vehicles. “Car-deficit” households have an insufficient number of private vehicles relative to eligible household drivers (Blumenberg et al., 2018). In the U.S., carless households make up 7% of all households and car-deficit households make up 15% of all households (Blumenberg et al., 2020).

Implicit in these identifications of vehicle ownership status is constraint, the notion that carless and car-deficit households face barriers that specifically prevent them from acquiring as many vehicles to meet their travel needs. As Brown examines in her 2017 analysis of “carless” and “car-free” households, these terms reflect the involuntary nature of traveling due to constraint and are distinct from “car-free” travelers, or those who do not own a car due to choice. Carless households are characterized by significantly lower household incomes, lower educational attainments, lower rates of citizenship, and are disproportionately non-white compared to car-free households (Brown, 2017). Common constraints to car ownership for carless households include not being able to afford to buy, maintain or operate a vehicle, health/age-related reasons, and not having a driver’s license or being unable to drive. Zero-car households are overwhelmingly low-income; nearly three-quarters (72%) of all zero-car households earn less than $25,000 annually compared to 15% of households (Brown, 2017).

In contrast, car-free households, who choose not to own a car, share similarities with choice transit riders – they are motivated to embrace alternative travel modes separate from driving in pursuit of environmental sustainability (reduced greenhouse gas emissions for example) and congestion-relief. Additionally, car-free households have the choice to live in neighborhoods with transit and to travel to jobs that are conveniently accessed by transit – hence, rendering cars as “unneeded” (Brown, 2017). Additionally, they are characterized by their ability to purchase auto access in other ways such as car rentals or ridehailing, allowing for automobility with limited financial repercussions like debt (Brown, 2017).

*Among all zero-car households, Brown finds that less than one-quarter (21%) of zero-car households are car-free and the majority (79%) are carless.*

“Car-deficit” households face economic constraints similar to carless households as low-income car-deficit households cannot afford a car for every household adult. Despite owning at least one vehicle, low-income car-deficit households may have a latent demand or desire for more automobility but are unable to do so because of the additional costs. Approximately 80% of

individuals in households below the poverty level live in households with at least one car (Blumenberg et al., 2020, Ruggles et al., 2017). Low-income households with household incomes below $35,000 were one and a half times more likely to have an auto-deficit than higher-income households, according to the Federal Highway Administration (FHA) (Blumenberg et al., 2020). Car-deficit households also are more likely to be non-white, similar to carless households, than households in which there is a one-to-one ratio between drivers and vehicles (fully equipped households).

Car-deficit households are different from carless households, however, in that having at least one vehicle allows low-income car-deficit households to “carefully negotiate” the use of household vehicles among its members, as opposed to carless households, albeit having larger household sizes to coordinate use of a household vehicle (Blumenberg et al., 2020). In addition, car-deficit households tend to live in dense transit-rich neighborhoods, although the built environment where the household resides has a lesser effect on car-deficit status compared to demographic and economic factors (Blumenberg et al., 2020). Nonetheless, car-deficit households risk compromised mobility for all members if the vehicle malfunctions or fails, especially if there is only a single vehicle in the household.

## Comparing Travel Outcomes by Vehicle Ownership

Although individuals without cars travel fewer miles than those with cars, there are differences in trip-making and travel miles among travelers who are carless and car-free which reflect socioeconomic variations between the two groups. Recognizing intragroup heterogeneity among zero-car households, Brown (2017) writes, yields policy implications when considering where to invest transportation resources in terms of who reaps the benefits of place-based public infrastructure. Carless households tend to overlap with the captive transit riders (or “transit-dependents”) population, in that they have significantly lower household incomes, lower educational attainments, and are disproportionately non-white compared to car-free households. As a result of being without a car and the financial means of accessing one, adults in carless households and captive transit users are more likely than others to rely on less expensive travel modes like transit.

Using the California Household Travel Survey, Mitra and Saphores (2019) perform parametric and non-parametric tests to analyze trip data of “voluntary” and “involuntary” carless households, or car-free and carless households, respectively. In their research in “How do they get by without cars? An analysis of travel characteristics of carless households in California,” the authors found that carless households were less mobile than car-free households; as they took half as many trips which were also shorter in distance, longer in duration, and skewed towards transit.

In the 2018 study “Auto-Deficit Households: Determinants, Travel Behavior, and the Gender Division of Household Car Use” looking at 40,000 households and 350,000 trips using California Household Travel Survey (CHTS) data, distinction between carless and car-deficit households

is especially important because of the drastic differences in travel behavior between these two groups (Blumenberg et al., 2020).

The table below from the study ("Table 4: Household Travel Outcomes by Vehicle Ownership Status") provides descriptive statistics for the three household types. According to the study, the biggest differences between car-deficit and carless households are that car-deficit households travel significantly more than carless households as measured by total trips, vehicle miles traveled (VMT), and personal miles traveled (PMT) which the study attributes to household size where car-deficit households tend to be bigger and negotiate car use accordingly. Car-deficit households still are more likely to use public transit than fully-equipped households but less than carless households.

**Table 1.** Household Travel Outcomes by Vehicle Ownership Status

| | Zero Car | Car Deficit | Fully Equipped | All Households |
|---|---|---|---|---|
| People | 1.8*** | 3.5*** | 2.6 | 2.7 |
| Adults | 1.6*** | 3.2*** | 2.3 | 2.4 |
| Drivers | 0.5*** | 2.7*** | 1.8 | 1.8 |
| Vehicles per driver | 0.0*** | 0.6*** | 1.1 | 1 |
| Car trips | 1.0*** | 8.2*** | 7 | 6.7 |
| Carpool trips | 0.9*** | 5.1*** | 3.7 | 3.7 |
| Walk/bike trips | 1.7*** | 1.2*** | 0.8 | 0.9 |
| Transit trips | 1.1*** | 0.3*** | 0.1 | 0.2 |
| Total trips | 4.0*** | 9.8*** | 8 | 8 |
| Vehicle miles traveled (VMT) | 7.0*** | 57.4*** | 53.8 | 50.6 |
| Personal miles traveled (PMT) | 17.6*** | 63.4*** | 57 | 54.8 |
| Car travel (minutes) | 24.3*** | 149.3*** | 130.8 | 125 |
| Total travel (minutes) | 104.1*** | 186.4*** | 151.1 | 152.6 |
| n | 2,458 | 6,019 | 33954 | 42431 |

Source: Blumenberg et al. (2018, Table 4)
Note: Significance values are relative to the "fully equipped" category.
* p < 0.1, ** p < 0.05, *** p<0.01

This table also highlights findings in similar studies where zero-car households travel the least in terms of total trips taken, vehicle miles traveled (VMT), personal miles traveled (PMT), car travel, and total travel. Zero-car households use transit and non-vehicular modes of travel, like walking and biking, the most among all households.

Nonetheless, car-deficit households travel significantly less than fully-equipped households and their travel differences may be observed further by income. The study finds that among low-income car-deficit households travel far less than high-income car-deficit households who make

40% more trips, travel 44% more miles by car and 51% more miles overall. This may be observed in the table below, also taken from the study.

**Table 2.** Travel Outcomes of Car-Deficit Households by Income Group

| | Low-income car deficit | Medium-income car deficit | High-income car deficit | Fully equipped (1+ Vehicle per Driver) |
|---|---|---|---|---|
| | < $35,000 | $35,000-$100,000 | >$100,00 | |
| People | 3.5*** | 3.5*** | 3.5*** | 2.6 |
| Adults | 3.1*** | 3.2*** | 3.2*** | 2.3 |
| Drivers | 2.5*** | 2.8*** | 2.9*** | 1.8 |
| Vehicles per driver | 0.5*** | 0.6*** | 0.6*** | 1.1 |
| Car trips | 7.2 | 8.6*** | 9.6*** | 7.0 |
| Carpool trips | 4.8*** | 5.2*** | 5.8*** | 3.7 |
| Walk/bike trips | 1.0*** | 1.1*** | 1.9*** | 0.8 |
| Transit trips | 0.2*** | 0.3*** | 0.4*** | 0.1 |
| Total trips | 8.6*** | 10.1*** | 12.1*** | 8.0 |
| Vehicle Miles Traveled (VMT) | 48.5*** | 61.0*** | 68.7*** | 53.8 |
| Personal Miles Traveled (PMT) | 52.7** | 66.7*** | 78.7*** | 57.0 |
| Car travel (min) | 133.8 | 155.6*** | 172.3*** | 130.8 |
| Total travel (min) | 167.7*** | 189.6*** | 223.9*** | 151.1 |
| n | 1,522 | 2,555 | 1,368 | 33,954 |

Source: Blumenberg et al. (2018, Table 4)
Note: Significance values are relative to the “fully equipped” category.
* p < 0.1, ** p < 0.05, *** p<0.01

## Temporal Status of Being Carless and Car-Deficit

In “Transitions into and out of Car Ownership song Low-Income Households in the United States,” authors Klein, Basu, and Smart (2023) used a novel online survey of 3,358 U.S. residents to analyze the transitions into and out of car ownership among low-income households. They specifically sought to investigate why households lose access to a car, how long they are without a car, why they regain a car, and how these transitions affect their quality of life. The article finds that car ownership transitions are primarily motivated by economic security and insecurity.

The research focused on low-income households with annual household incomes below $50,000 as they are more likely to transition into and out of car ownership. The most common reason respondents lose access to a car is that they could not afford to repair or maintain the vehicle, and the most common reason respondents regained a car is their ability to afford one.

Losing a car can be especially debilitating for these households who risk losing access to jobs, health care, shopping, and recreation (Klein et al., 2023). More than half of respondents reported that losing a car led to their personal finances worsening; losing a car also was associated with fewer economic opportunities as nearly a third lost a job after losing a car. The median length of a car-less episode for this population is 1.7 years, with Black and Hispanic respondents experiencing longer car-less episodes at 2.5 years and 2.1 years, respectively. Most respondents who regained a car cited that they were able to regain a car after finding an affordable vehicle. These results reveal a preference among carless and car-deficit households towards mobility that includes access to a vehicle.

## Financial and Social Benefits of Cars

Automobile ownership has numerous benefits and costs. As I note above, carless households tend to be carless due to financial constraints (Klein et al., 2023). At the same time, the majority of households living below the poverty line still own a car, suggesting that the importance of automobiles to low-income households outweighs the financial burden in acquiring one (Blumenberg et al., 2020). The sprawling and decentralized landscape of American cities results in more spatially distant destinations. Private vehicles almost universally allow people to “travel further, faster, and more efficiently than other modes” to both work and non-work destinations (Blumenberg et al., 2020). Tours that involve multiple trips (trip chains), children, shopping, and carrying heavy goods may be carried out more conveniently via car. Individuals with access to vehicles experience better employment economic outcomes than those in zero-vehicle households given the greater ease of travel and accessibility to jobs (Klein et al., 2023).

The research also highlights some of the challenges in acquiring cars for lower-income households, such as navigating the subprime financing industry and taking on debt to finance purchases. In a survey of 3,358 respondents in the U.S., 1,103 of whom experienced carlessness at least once in their adult life, over half of respondents who obtained a car reported being tired of asking for rides or borrowing cars (Klein et al., 2023). Other highly ranked reasons for entering car ownership were the need to access medical care, transporting children, and being tired of taking public transportation. Among those who became carless, more than half of respondents reported that losing a car led to their personal finances worsening. However, over three-quarters of respondents reported that regaining a car was worth it (Klein et al., 2023).

This report will focus on evaluating the travel patterns and needs of carless and car-deficit households. The goal will be to provide LADOT with recommendations for improving the transportation system to better support these households and help LADOT meet its goals of providing Universal Basic Mobility.

# Methodology

## Neighborhood Selection

I used publicly available data from the 2020 U.S. Census data to identify neighborhoods with high concentrations of carless households or zero-vehicle households. I used this analysis to identify my two case study neighborhoods in which I distributed surveys and solicited local opinion on transportation. To visually represent the distribution of carless and car-deficit households in Los Angeles, I used the following data to map the indicators associated with zero-vehicle and car-deficit households. These variables are based on previous findings on characteristics of these two household types.

- **“Vehicles Per Household”** (Table B08201): Percentage of zero-vehicle households in a census tract
- **“Means of Transportation to Work”** (Table B08301): The number of households in a census tract that commute to work by transit
- **“Travel Time to Work”** (Table B0303): The number of households in a census tract whose commute time exceeds 60 minutes
- **“Median Household Income”** (Table S1901): Census tracts with a median household income of less than $60,000

This data was overlaid with zip codes and area boundaries derived from the Los Angeles Times Neighborhood Map to identify individual neighborhoods.

## Data Limitations

The neighborhood selection process does not identify where distributions of car-deficit households, exclusive of carless households, are located due to the lack of data. Although information on the number of vehicles per households and other public sources such as the Federal Highway Administration (FHWA) and the California Department of Motor Vehicles (DMV) provide aggregated counts of licensed drivers at the state and county level, there are no publicly available data tracking car-deficit households, households with less cars than drivers excluding zero-car households at the neighborhood level. The neighborhood selection methodology assumes that high counts of zero-vehicle households overlaid with other characteristics associated with car-deficit households according to the literature review also implies high concentrations of car-deficit households, but I cannot be certain of these results without official data.

Nonetheless, I included all car-deficit households in the data analysis section. In addition, I included transportation infrastructure like local bus stops and rail stations as layers in the maps to consider an area's proximity to transit networks and the level of nearby public transportation investment, given the project's goal of investigating potential solutions for transportation-constrained households.

## Definitions

I focused on respondents who were in a car-deficit and low-income and how they compared to their fully-equipped and non-low-income counterparts. I used the following definitions to identify these groups:

- **"Car-deficit"**: The number of drivers in a household is less than the number of vehicles in a household. *Carless (zero-vehicle) households are included in this definition in the data analysis section.*
- **"Fully-equipped"**: The number of drivers in a household is greater than or equal to the number of vehicles in a household, or at least one car per driver.
- **"Extremely Low-income"**: Household income is between $0 - $30,000 or the respondent participates in at least one of the following programs:
    - Medicaid or Medi-Cal
    - CalFresh/Supplemental Nutrition Assistance Program (SNAP)
    - Supplemental Security Income/State Supplementary Payment (SSI/SSP)
    - CalWORKS, Temporary Assistance for Needy Families (TANF), or Tribal TANF
    - Federal Public Housing Assistance
    - Low-Income Energy Assistance (LIHEAP)

According to the California Department of Housing and Community Development (HCD) Official State Income Limits guidelines, the "Extremely Low-Income" classification is measured using the Federal Poverty Guidelines which is published by the Department of Health and Human Services as a simplified version of the Federal Poverty Thresholds to determine financial eligibility for certain federal programs.

- **"Low-Income"**: Respondents who did not fall in the "Extremely Low-Income" group but reported household incomes 80% of a county's median family income, adjusted for family size, as defined under HCD's "Low-Income" limits. This definition considers the high cost of living in Los Angeles relative to other regions.

## Survey Distribution

After identifying neighborhoods with high counts of carless households, I distributed surveys via tabling at community events with the permission of event organizers. I asked potential participants about their interest in taking the survey. Once they expressed interest and provided consent, I gave participants a link to an online survey to take at their own convenience using their own device or a device that I provided at the event. Surveys took approximately 15 minutes to complete and included questions about the participant's transportation experience such as modes used, transportation challenges, and level of awareness of transportation projects and programs.

All respondents were introduced to the survey at community events in public settings and were asked to complete the survey at their own convenience. The survey was open to all who were interested in participating to promote inclusivity in alignment with spaces oriented around community development and to offer community members opportunities to provide input and comments. Involving fully-equipped households allows for comparisons with carless households. Most importantly, the participation of fully-equipped households underscores the reality for many households living in Los Angeles who depend on vehicular use as the most convenient mode of transportation given the built environment in which they live.

## Survey Limitations

Based on the number of respondents who volunteered to complete the survey, the sample sizes used in the data analysis are small; therefore, the analysis should be replicated with a large group of randomly selected individuals to more accurately understand perceptions of travel ease in a particular neighborhood.

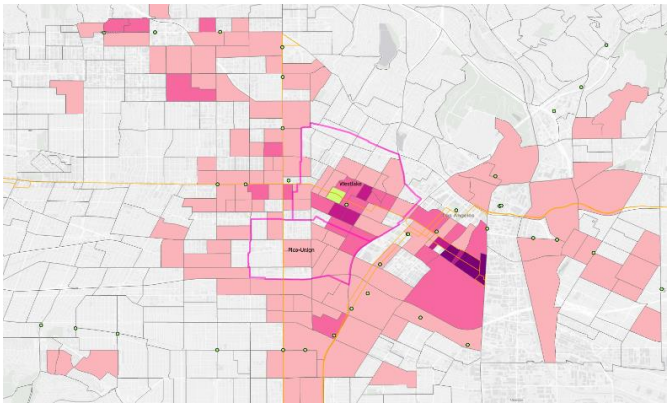
# Findings

## Neighborhood Selection: Where Are Carless Households Concentrated?

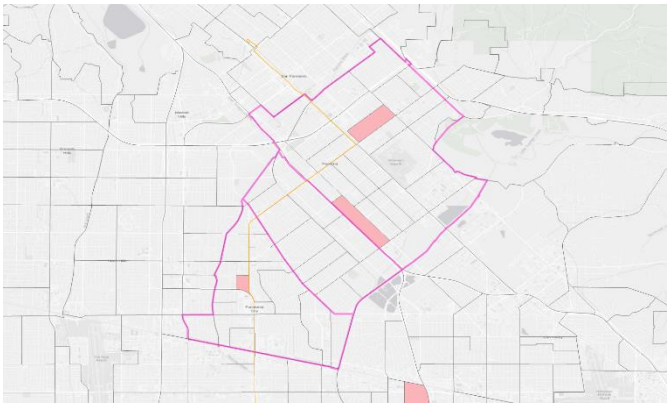
Illustrated in the series of maps below (scaled 1:47,000), Westlake-MacArthur Park and Pacoima-Panorama City emerged as neighborhoods with high rates of zero-vehicle households, transit-users, and low-income households. Additionally, I selected these two neighborhoods to analyze and make comparisons between carless and car-deficit in the urban and suburban context: Westlake-MacArthur Park is in close proximity to Downtown Los Angeles surrounded by a variety of transportation options such as buses, the Metro light rail and more, whereas Pacoima-Panorama City sits in the San Fernando Valley, characterized by largely suburban neighborhoods where transit supply is limited.

## Zero-vehicle Households

**Westlake-MacArthur Park**



**Pacoima-Panorama City**



Source: U.S. Census Bureau. (2022). Household Size by Vehicles Available. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B08201.

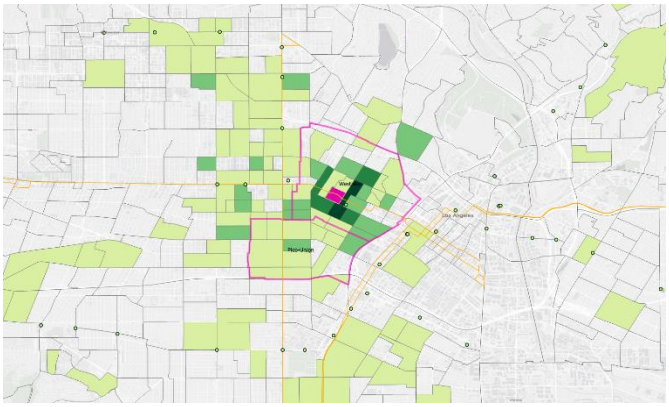
**Zero-vehicle Households %**

- 0 – 20%
- 20 – 40 %
- 40 – 60 %
- 60 – 80%
- 80 – 100%

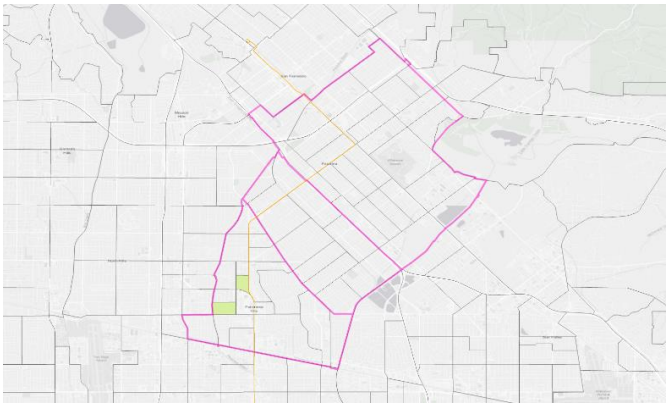
The Westlake-MacArthur Park and Pacoima-Panorama City neighborhoods contain census tracts with some of the highest percentages of zero-vehicle households in Los Angeles. Westlake-MacArthur Park, in particular, has census tracts in which approximately 60% of households own zero vehicles – second highest in the city following census tracts in the neighboring Skid Row neighborhood where around 80% of households are zero-car. In the San Fernando Valley, only ten census tracts reported zero-car households of 20% or more, three of which are located in Pacoima and Panorama City.

## Commute by Non-Vehicular Transportation Modes

**Westlake-MacArthur Park**



**Pacoima-Panorama City**



Source: U.S. Census Bureau. (2022). Means of Transportation to Work. American Community Survey, ACS 5-Year Estimates Subject Tables, Table B08301.

**Commute by Non-Vehicular Modes (%)**

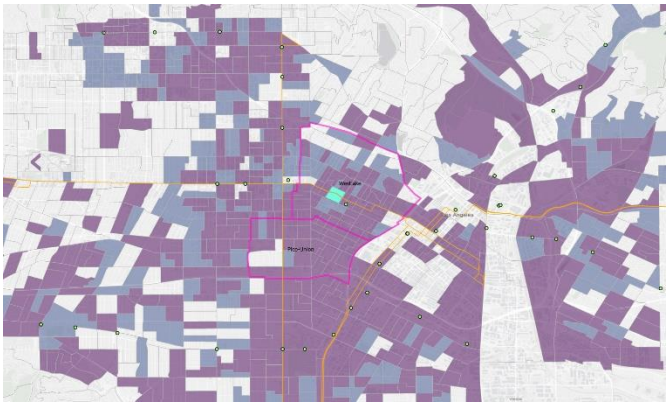
- 0 – 20%
- 20 – 40 %
- 40 – 60 %
- 60 – 80%
- 80 – 100%

The maps above visualize the percentage of households in a census tract that commute via non-vehicular modes of transportation, including bus, rail, bicycle, and walking while excluding cars, trucks, vans, ridehailing, carpooling, and households who work from home.

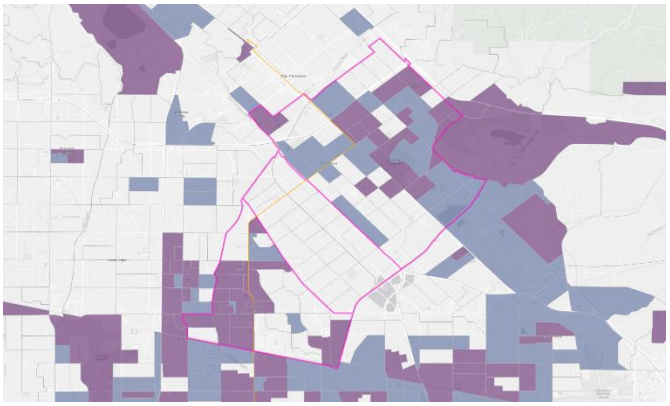
In Westlake-MacArthur Park, up to 66% of workers in some of its census tracts used transit and other non-vehicular modes of transportation to get to work. Suburban regions such as the San Fernando Valley had high rates of car-users, and only four census tracts had at least 20% of workers that did not commute by a vehicle. Two of these census tracts were in Panorama City where around 22% of workers commuted by bus, bicycle, or walked.

## Median Household Income

### Westlake-MacArthur Park



### Pacoima-Panorama City



Source: U.S. Census Bureau. (2022). Income in the Past 12 Months (in 2022 Inflation-Adjusted Dollars). American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1901.

**Median Household Income**

- $0 – $48,000
- $48,000 - $60,000

Both neighborhoods reported census tracts with extremely low median household income, one of the criteria for selecting the neighborhood for analysis.

## Survey Overview

During the study period, a total of 45 respondents completed the full survey. Two respondents were excluded from the study because they were not low-income based on household income and size thresholds used by the state or federal government. Thus, the survey findings are relevant to trips made by individuals in low-income households in the context of the two neighborhoods. Furthermore, I present survey responses in the data analysis section by neighborhood because of the differences in their built environment in terms of proximity and accessibility to destinations based on available modes and infrastructure.

## Respondent Demographic and Household Characteristics

Summarized in **Table 3**, 32 respondents (74%) were from the Westlake-MacArthur Park neighborhood, and 11 respondents (26%) were from Pacoima-Panorama City. Participants from both neighborhoods shared similar demographic characteristics, as I discuss below.

**Table 3**. Demographic Data of Survey Respondents

| | Westlake/ MacArthur Park | % | Pacoima/ Panorama City | % |
|---|---|---|---|---|
| **Gender** | | | | |
| Woman | 22 | 69% | 9 | 82% |
| Man | 6 | 19% | 1 | 9% |
| Man & Woman | 1 | 3% | 1 | 9% |
| **Race** | | | | |
| Latinx/Hispanic | 26 | 81% | 10 | 91% |
| Non-Hispanic White | 0 | 0% | 0 | 0% |
| Non-Hispanic Black | 0 | 0% | 0 | 0% |
| Non-Hispanic Asian | 1 | 3% | 0 | 0% |
| American Indian and Alaska Native | 0 | 0% | 0 | 0% |
| **Income** | | | | |
| Extremely Low-Income | 22 | 69% | 11 | 100% |
| Low-Income | 4 | 13% | 0 | 0% |
| No response | 6 | 19% | | |
| **Age** | | | | |
| 18-23 | 8 | 25% | 3 | 27% |
| 24-34 | 10 | 31% | 1 | 9% |
| 35-49 | 9 | 28% | 2 | 18% |
| 50-64 | 0 | 0% | 2 | 18% |
| 65 and older | 0 | 0% | 2 | 18% |
| Median age | 30 | | 41 | |
| Average age | 29 | | 39 | |
| **Residency** | | | | |
| Less than one year | 7 | 22% | 2 | 18% |
| 1-5 years | 3 | 9% | 2 | 18% |
| 6-10 years | 8 | 25% | 4 | 36% |
| 11-20 years | 7 | 22% | 2 | 18% |
| 20+ years | 5 | 16% | 3 | 27% |
| **Total Respondents** | **32** | 100% | **11** | 100% |

Among those who shared their demographic information, most respondents identified as a female (31 out of 43), and most participants (32 out of 43) identified as Latinx/Hispanic. Only

one participant identified as non-Hispanic/Latinx. Furthermore, most of survey participants in Westlake-MacArthur Park were below the age of 50, whereas the age of survey participants in Pacoima-Panorama City was distributed more equally. Median age and average age showed a decade difference between the two study areas. Both communities were home to both short- and long-term residents.

All respondents were low-income or extremely low-income, as defined by the HCD State Income Limits (Los Angeles County) or indicated by their participation in federal programs. Almost all respondents were “extremely low-income,” indicating substantial financial constraint when it comes to their expenditures.

## Transportation-related Characteristics

To determine the number of car-deficit households, the survey asked participants about the number of drivers, vehicles, and the total size of their household, as shown in **Table 4**.

**Table 4.** Transportation-Related Characteristics

| | Westlake/ MacArthur Park | % | Pacoima/ Panorama City | % |
|---|---|---|---|---|
| **Number of Licensed Drivers in Survey** | 8 | 25% | 8 | 73% |
| **Number of Drivers in a Household** | | | | |
| 0 drivers | 4 | 13% | 1 | 9% |
| 1 driver | 19 | 59% | 4 | 36% |
| 2 drivers | 7 | 22% | 1 | 9% |
| 2+ drivers | 2 | 6% | 4 | 36% |
| **Number of Vehicles in a Household** | | | | |
| 0 vehicles | 8 | 25% | 2 | 18% |
| 1 vehicle | 18 | 56% | 3 | 27% |
| 2 vehicles | 2 | 6% | 3 | 27% |
| 2+ vehicles | 4 | 13% | 3 | 27% |
| **Household Size** | | | | |
| 1-person | 3 | 9% | 1 | 9% |
| 2-person | 3 | 9% | 3 | 27% |
| 3-person | 6 | 19% | 2 | 18% |
| 4-person | 6 | 19% | 1 | 9% |
| 4+ persons | 10 | 31% | 4 | 36% |
| No response | 5 | 16% | 0 | 0% |
| **Households with Children** | 5 | 16% | 0 | 0% |
| **Carless and Car-Deficit Households** | 13 | 41% | 6 | 55% |
| **Total Respondents** | **32** | 100% | **11** | 100% |

While there was a higher percentage of licensed drivers among participants in Pacoima-Panorama City than Westlake-MacArthur Park, both neighborhoods observed similar percentages of drivers in their household. Where 13% of households in the Westlake-MacArthur Park group had zero drivers, in Pacoima-Panorama City 9% of respondent households, or one participant, had zero licensed drivers. If we considered household size, we would expect there to be more drivers, especially because only 5 respondents noted being in a household with children under the age of 18 who are ineligible to drive independently. There may be other factors that prevent individuals from obtaining their driver's license such as convenience, disability status, the time and cost burden of procuring a license, and financial barriers. In the data, a quarter (25%) of households in Westlake-MacArthur Park were carless (zero-vehicle households) compared to 18% of respondents in Pacoima-Panorama City. These values

exceed the 8.3% of households with no vehicles in the U.S. as of 2022, the most recent Census data available.

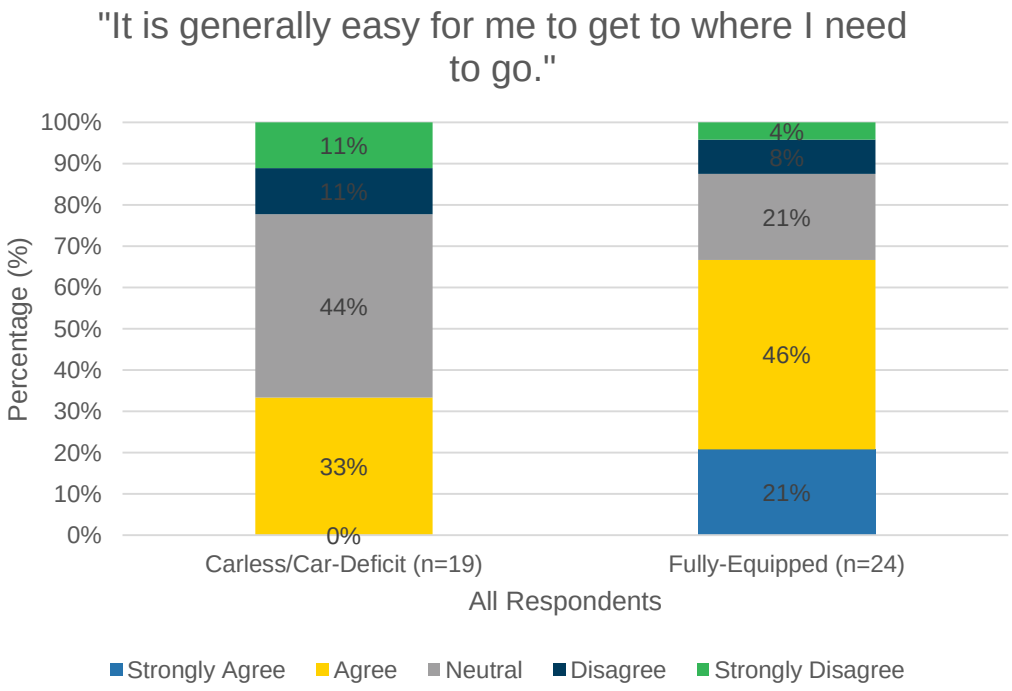
However, over half of respondents (18 out of 32 respondents) in Westlake-MacArthur Park reported that their household owned or leased only one vehicle. Only a handful of respondents (6 out of 32 respondents) owned more than one vehicle. The number of cars in a vehicle is more evenly distributed across Pacoima-Panorama City participants.

Given this information and considering household size, car-deficit households (households with zero vehicles or fewer vehicles than the number of drivers) accounted for 40% of total respondents. In Westlake-MacArthur Park, car-deficit households made up 41% of the respondents (13 out of 31 respondents). In Pacoima-Panorama City, car-deficit households made up 55% of the respondents (6 out of 11 respondents).

## Travel Experience

The survey asks participants to rate the ease of getting somewhere they needed to go. The below graphs illustrate the distribution of answers in response to the following statement: ***"It is generally easy for me to get where I need to go."***

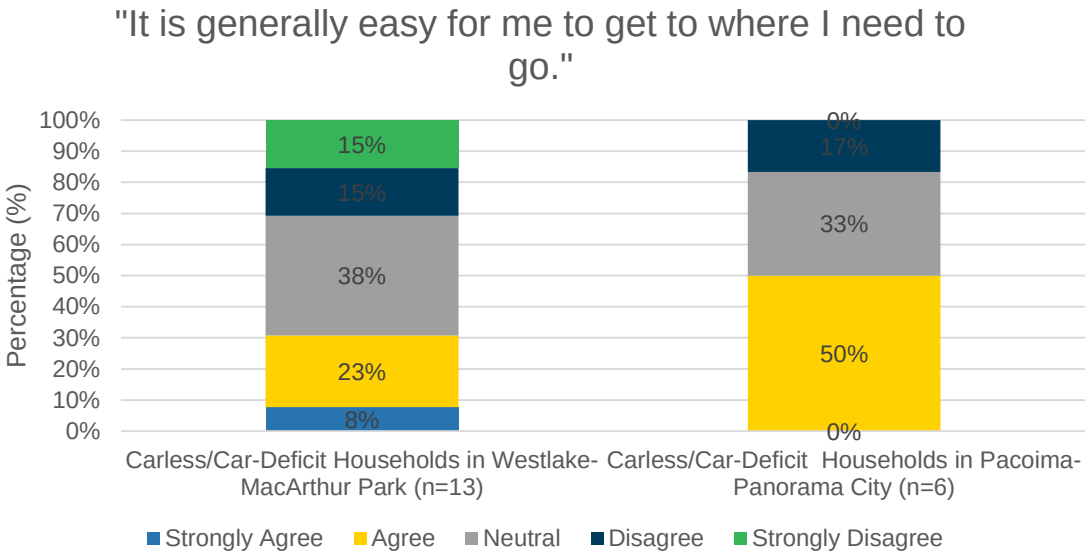
**Figure 1.** Travel Experience of Carless/Car-Deficit and Fully-Equipped Households




Car-deficit and fully-equipped households reported lower rates of satisfaction with their current travel experience compared to fully-equipped households. Three out of 10 respondents marked "Disagree" or "Strongly Disagree" to the statement. Five out of 19 car-deficit households

reported dissatisfaction with their current travel compared to 3 out of 24 fully-equipped respondents who also answered “Disagree” or “Strongly Disagree”.

**Figure 2.** Travel Experience of Carless/Car-deficit Households in Westlake-MacArthur Park and Pacoima-Panorama City




Comparing travel ease of car-deficit households (inclusive of carless households) between the two neighborhoods reveals higher dissatisfaction in Westlake-MacArthur Park where there were more respondents who were carless (8 out of 13 car-deficit respondents) than in Pacoima-Panorama City (2 out of 6 car-deficit respondents).

# Skipped and Rescheduled Trips by Carless/Car-Deficit Households

The survey also asked participants how many trips they skipped or rescheduled because of a problem with transportation in the past 30 days.

## Comparison of Carless/Car-Deficit Households and Fully-Equipped Households

Approximately two-thirds of carless/car-deficit participants, or 13 out of 19 carless/car-deficit participants, responded that they have skipped trips “sometimes” or “often.” Over half of carless/car-deficit respondents, or 12 out of 19 carless/car-deficit participants, have “sometimes” or “often” rescheduled their trips due to transportation-related issues.

Between carless/car-deficit households and fully-equipped households, both groups reported similar rates of skipped and rescheduled trips. Given that every respondent is low-income, this finding may echo the findings of other studies that find that “low-income auto-deficit households travel almost as much as low-income fully-equipped households,” and, therefore, could be said to have similar travel patterns, as low-income fully-equipped households travel just four more miles a day than low-income auto-deficit households (Blumenberg et al., 2020).

**Table 5**. Skipped and Rescheduled Trip Types by Carless/Car-Deficit Households vs. Fully-Equipped Households

| | Skipped Trips | | | | Rescheduled Trips | | | |
|---|---|---|---|---|---|---|---|---|
| **Frequency** | **Carless/Car-Deficit** | **%** | **Full-Equipped** | **%** | **Carless/Car-Deficit** | **%** | **Full-Equipped** | **%** |
| Often | 2 | 11% | 2 | 8% | 3 | 16% | 2 | 8% |
| Sometimes | 11 | 58% | 10 | 42% | 7 | 37% | 8 | 33% |
| Never | 6 | 32% | 8 | 33% | 9 | 47% | 10 | 42% |
| **N** | 19 | 100% | 24 | 100% | 19 | 100% | 24 | 100% |

### Comparison by Neighborhood

Skipped trips by car-deficit households in Westlake-MacArthur Park were more evenly distributed compared to car-deficit households in Pacoima-Panorama City. At the same time, healthcare appointments were the most rescheduled trip type, followed by school, in both neighborhoods.

**Table 6.** Skipped and Rescheduled Trip Types by Neighborhood

| | Carless/Car-Deficit Households Westlake | | | | Carless/Car-Deficit Households Pacoima | | | |
|---|---|---|---|---|---|---|---|---|
| **Trip Type** | **Skipped Trip** | **%** | **Rescheduled Trip** | **%** | **Skipped Trip** | **%** | **Rescheduled Trip** | **%** |
| School | 3 | 23% | 2 | 15% | 1 | 17% | 2 | 33% |
| Healthcare / Doctor's office | 3 | 23% | 4 | 31% | 1 | 17% | 4 | 67% |
| Grocery shopping | 3 | 23% | 0 | 0% | 3 | 50% | 1 | 17% |
| Recreational activities/classes | 2 | 15% | 1 | 8% | 3 | 50% | 1 | 17% |
| Visiting friends or family | 2 | 15% | 1 | 8% | 0 | 0% | 2 | 33% |
| Work | 1 | 8% | 2 | 15% | 0 | 0% | 0 | 0% |
| **Total Carless/Car-Deficit Respondents in Neighborhood** | **13** | 100% | **13** | 100 % | **6** | 100% | **6** | 100 % |

A few respondents commented that they were unable to make these trips because it took too long to travel to their destination due to traffic and the unpredictability of the bus and train. One respondent said that if they realize that they will be late to an appointment due to transportation issues, they reschedule some trips such as those to healthcare appointments; this respondent did not want to risk skipping and losing an appointment that would result in missing out on receiving care.

## Car Affordability

Car-ownership is associated with better economic outcomes, as discussed in the literature. Respondents answered questions related to car affordability to understand their willingness to attain car-ownership despite all respondents being categorized as low-income. The survey asked about the financial ability to finance a car and whether the respondent had plans to purchase a vehicle in the next year.

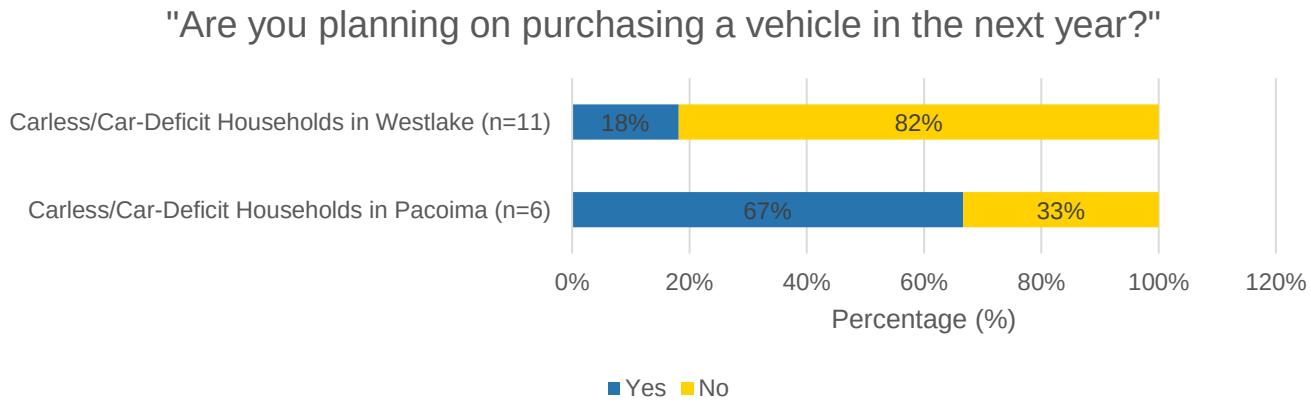
More than half of the respondents, 26 out of 42 respondents, reported that they are not able to purchase a vehicle. An additional third of respondents, or 12 out of 42 respondents, reported that they are able to purchase a vehicle at the expense of other necessities such as food and housing. These results are expected since all respondents are low-income. Only a few households indicated that purchasing a vehicle is not a financial burden.

**Table 7.** Financial Feasibility of Purchasing a Vehicle Among All Respondents

| "Are you financially able to purchase a vehicle?" | Count | % |
|---|---|---|
| No | 26 | 62% |
| Yes, but it will significantly impact my budget for other necessities (food, housing, etc.) | 12 | 29% |
| Yes, I choose not to purchase a vehicle even though I can afford one. | 4 | 10% |
| **Total Respondents** | **42** | **100%** |

Despite the relative unaffordability of vehicles to survey respondents, however, respondents from the two neighborhoods differed in the next part of the survey which asked car-deficit participants about their plans to purchase a vehicle, shown below:

**Figure 3.** Financial Feasibility of Purchasing a Vehicle Among All Respondents




In Pacoima-Panorama City, 4 out of 6 carless/car-deficit respondents reported plans to purchase a vehicle in the next year. This finding may suggest that the quality of life and additional mobility may increase significantly with the addition of a vehicle, regardless of the potential financial burden internalized by the purchase which may be outweighed by the potential social and economic benefits of greater mobility associated with car ownership.

In comparison, 2 out of 11 carless/car-deficit respondents in Westlake and MacArthur Park indicated plans to purchase a vehicle in the next year. These differences by geography are important because car-deficit participants from Westlake-MacArthur Park reported more dissatisfaction with their current travel experience in addition to most having no plans to purchase a vehicle in the next year.

The impact of residential location has unique implications on vehicle ownership decisions for carless and car-deficit households. If opportunities are highly accessible by non-automotive modes, zero-car households have reduced incentives to obtain a vehicle (Blumenberg et al., 2020). The Westlake-MacArthur Park neighborhood is served by numerous LA Metro bus and rail lines as well as increasing bicycle infrastructure such as bike lanes and bikeshare, compared to Pacoima-Panorama City. Furthermore, the neighborhood is located adjacent to Downtown Los Angeles the neighborhood with the highest concentration of jobs in Los Angeles;

sixteen percent of all jobs in LA City are in downtown (DTLA Alliance). If households do not have a car, they tend to either move to transit-rich neighborhoods (Rappaport et al., 2008) or transition out of carlessness whenever possible, as shown by Pacoima-Panorama City respondents.

These findings on the plans for carless and car-deficit households indicate that there is a willingness to take on the financial burden of car ownership for its perceived benefits, although a large sample size will better validate this claim.

# Mode Choice

Respondents in the two neighborhoods reported differences in mobility: modes used most frequently in a typical month and frequency of use. The following graphs visualize these differences by neighborhood and car ownership status.

## Mode Choice in Pacoima-Panorama City

**Figure 4.** Mode Share in Pacoima-Panorama City

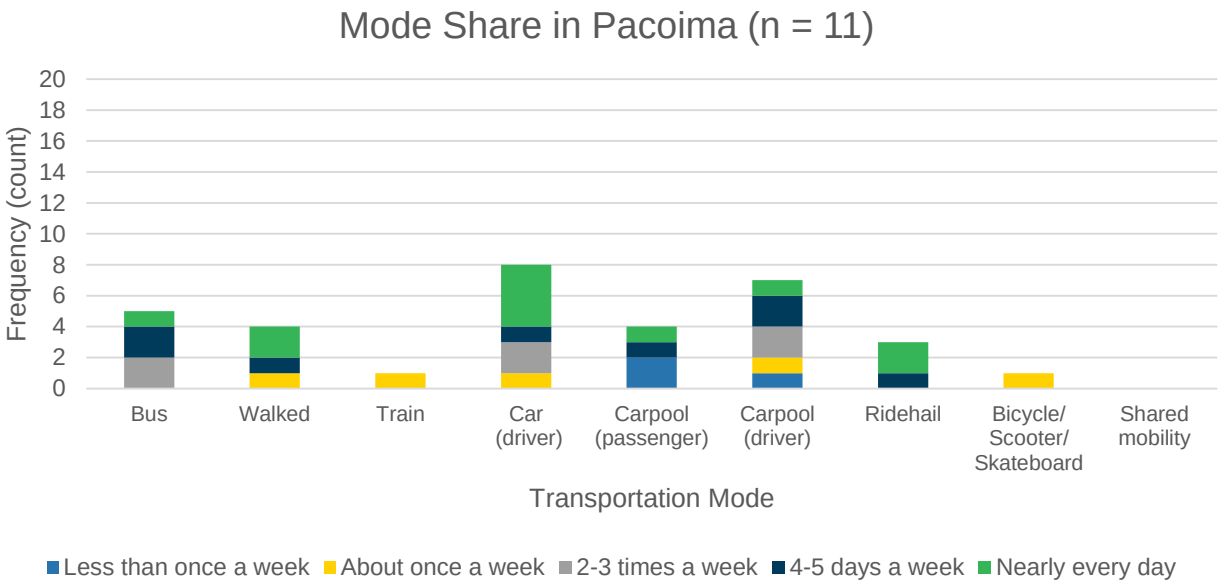
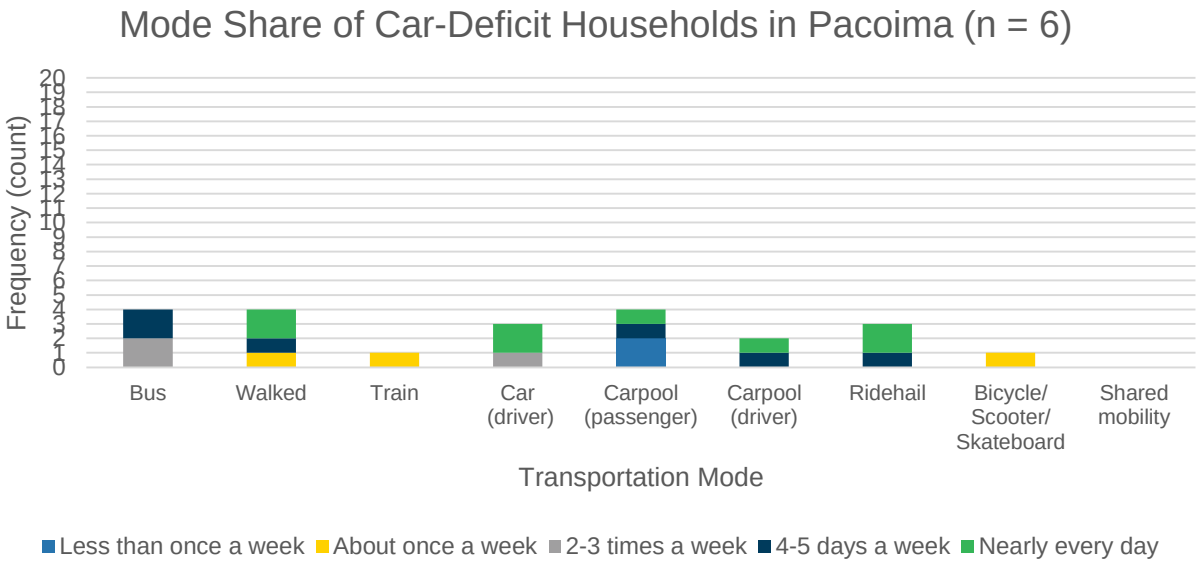



**Figure 5.** Mode Share of Carless/Car-Deficit Households in Pacoima-Panorama City



The most used transportation mode in Pacoima-Panorama City was private vehicles, whether it be for driving or carpooling purposes. Interestingly the most used transportation mode for carless/car-deficit households was tied between receiving a ride from someone the respondent knew in an automobile, taking the bus, and walking; four out of 6 carless/car-deficit respondents used these modes each in a typical month although the small sample size makes it difficult to draw robust conclusions. Half, or 3 out of 6 car-deficit respondents, relied on vehicular travel such as driving their own vehicle or using ridehail.

## Mode Choice in Westlake-MacArthur Park

**Figure 6.** Mode Share in Westlake-MacArthur Park

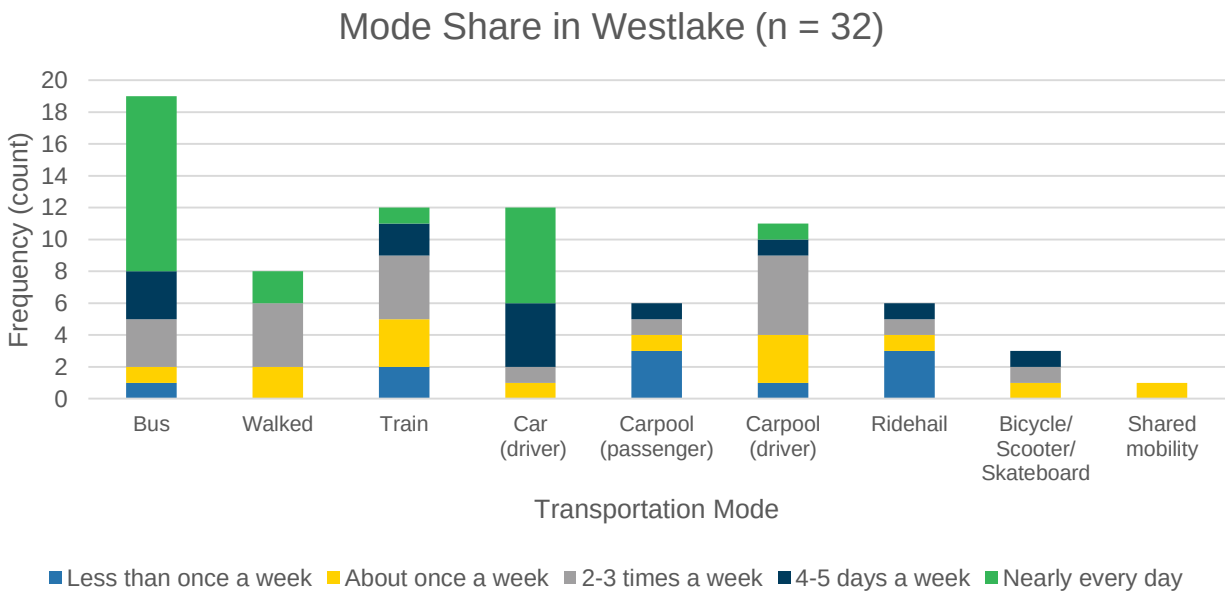
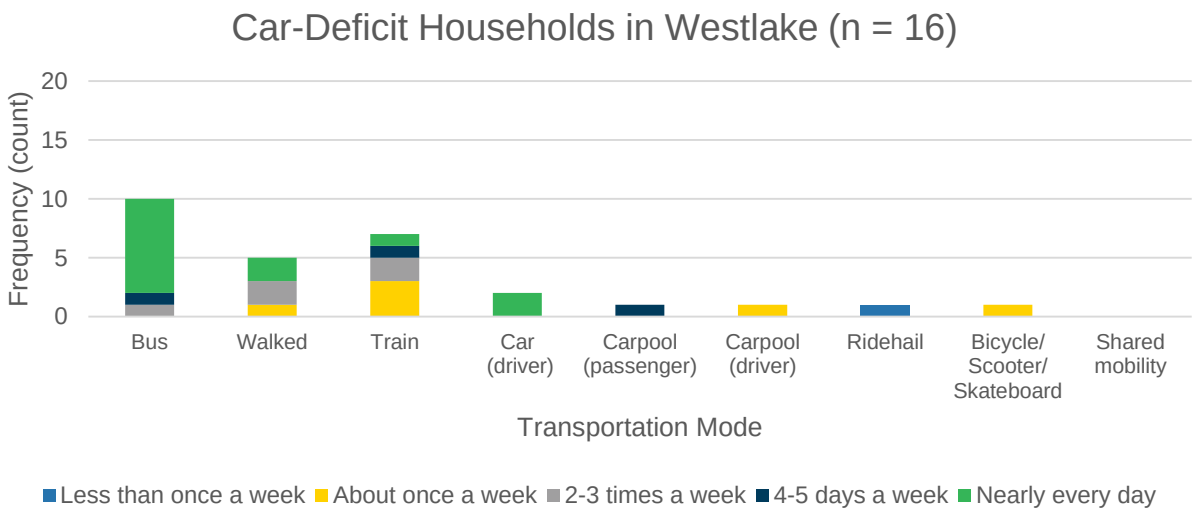



**Figure 7.** Mode Share of Carless/Car-Deficit Households in Pacoima-Panorama City



Carless and car-deficit respondents in Westlake-MacArthur Park used a wide range of transportation modes, but public transit (both bus and rail) was the most-used in a typical month as well as the most frequently among respondents. Among car-deficit respondents in Westlake-MacArthur Park, 10 respondents (77%) took the bus, 7 respondents (54%) took the train, 5 respondents (38%) walked, and 4 respondents (31%) depended on a motorized vehicle to get around (driving, carpooling, ridehail).

In contrast to Pacoima and Panorama City, carless/car-deficit respondents from Westlake and MacArthur Park depended less on vehicular modes of travel such as driving, carpooling, or ridehailing.

## Travel Experience: Challenges and Concerns

The survey asks respondents to reflect and share their concerns about the most used modes of transportation (driving, bus, rail, and walking) as they relate to safety and their general travel experience. The survey lists common transportation challenges and concerns for each mode where respondents were asked to select all that applied to them. Each question related to the transportation experience also gave an option for participants to write in a concern that was not given in the list of challenges.

The following findings report the top five concerns among respondents. More detailed tables listing all travel concerns may be found in the Appendix.

### Travel Concerns in Pacoima-Panorama City

**Table 8.** Top Driving Concerns in Pacoima-Panorama City

| Top Driving Concerns (Westlake-MacArthur Park) | Count | % |
|---|---|---|
| I am worried about cars and oncoming traffic | 10 | 31% |
| There is a lot of traffic getting to my destination | 10 | 31% |
| I am worried about reckless driving | 9 | 28% |
| I am worried about finding parking | 7 | 22% |
| Gas is expensive | 7 | 22% |
| **Total** | 32 | |

The top driving-related concerns for respondents in Pacoima included concerns about safety and traffic violence as a result of driver behavior such as reckless driving and oncoming traffic. Next, over half of respondents expressed concerns regarding the cost of gas which acts as a financial barrier to driving. Lastly, respondents were concerned about the time associated with driving such as traffic congestion and finding parking which inevitably adds travel time to the trip.

**Table 9.** Top Bus Concerns in Pacoima-Panorama City

| Top Bus Concerns (Pacoima-Panorama City) | Count | % |
|---|---|---|
| I do not feel safe getting to the bus at night | 5 | 45% |
| I do not feel safe waiting for the bus at night | 3 | 27% |
| I do not feel safe while riding the bus at night | 3 | 27% |
| I wait a long time for the bus | 3 | 27% |
| There is no shelter from the heat or rain while I wait for the bus | 3 | 27% |
| **Total** | 11 | |

The highest concern among respondents from Pacoima-Panorama City was safety getting to their bus stop at night. Respondents' second largest concern also related to safety; they had concerns about their general nighttime safety when waiting for and while riding the bus. The travel experience during the night contrasts with traveling during the day which only one respondent from Pacoima-Panorama City had marked in the survey. Thus, time of day appears to be an important factor for riding the bus; once again, a larger sample size is necessary to fully understand its impact. Other concerns regarding bus travel include time-related concerns, such as waiting too long for the bus, and environmental concerns where respondents expressed having no shelter from the heat or rain while waiting for the bus. Pacoima and Panorama City are in the San Fernando Valley where temperatures are some of the hottest in Los Angeles. Summer temperatures can easily exceed 90 degrees Fahrenheit which elevates the risk of extreme-heat related illness such as heat stroke and stress.

**Table 10.** Top Train Concerns in Pacoima-Panorama City

| Top Train Concerns (Pacoima-Panorama City) | Count | % |
|---|---|---|
| I do not feel safe waiting for the train during the day | 4 | 36% |
| I do not feel safe getting to the train station at night | 4 | 36% |
| I do not feel safe waiting for the train at night | 4 | 36% |
| The train station is too far from home | 3 | 27% |
| I am worried about gender-based/sexual harassment or violence | 2 | 18% |
| I do not feel safe while riding the train at night | 2 | 18% |
| I wait a long time for the train | 2 | 18% |
| **Total** | 11 | |

Concerns when traveling via train are similar to those when traveling by bus in that respondents expressed similar safety-related concerns related to access at different times of the day. The main difference, however, is that respondents felt less safe waiting at train stations both during the day and night, as opposed to only at night. Nonetheless, participants still were concerned about getting to transit (both train and bus) and riding transit at night. A couple of respondents were fearful about gender-based/sexual harassment or violence and time-related concerns such as waiting a long time for transit. Generally, however, very few respondents from Pacoima and Panorama City reported riding the train.

**Table 11.** Top Walking Concerns in Pacoima-Panorama City

| Top Walking Concerns (Pacoima) | Count | % |
|---|---|---|
| I do not feel safe walking at night | 6 | 55% |
| I am worried about cars and oncoming traffic | 5 | 45% |
| The sidewalk is hazardous and unkept | 4 | 36% |
| Weather conditions (i.e. hot/cold/raining/etc. ) | 4 | 36% |
| There are no sidewalks on some streets | 4 | 36% |
| **Total** | 11 | |

Similar to their concerns about using transit (both bus and rail), respondents in Pacoima and Panorama City were also concerned about walking to their destinations at night. Over half (6 out of 11 respondents) reported not feeling safe while walking at night. Oncoming traffic and cars further add to their concerns are threats to pedestrian safety, especially where there is a lack of sidewalks or sidewalks in usable condition (reported by 4 out of 11 respondents). The conditions of local sidewalks in Pacoima and Panorama City pose an infrastructural barrier to active mobility, so too do challenges derive from the environment such as weather conditions (4 out of 11 respondents).

### Travel Concerns in Westlake-MacArthur Park

**Table 12.** Top Driving Concerns in Westlake-MacArthur Park

| Top Driving Concerns (Westlake-MacArthur Park) | Count | % |
|---|---|---|
| I am worried about cars and oncoming traffic | 10 | 31% |
| There is a lot of traffic getting to my destination | 10 | 31% |
| I am worried about reckless driving | 9 | 28% |
| I am worried about finding parking | 7 | 22% |
| Gas is expensive | 7 | 22% |
| **Total** | 32 | |

Almost a third (10 out of 32) of respondents from Westlake and MacArthur Park were concerned about driver behavior such as reckless driving (9 out of 32) and worry about cars and oncoming traffic (10 out of 32). Other major concerns shared by respondents is traffic congestion (10 out of 32), which also has implications for travel time on other modes (bus, ridehail); respondents also had difficulty looking for parking (7 out of 32 respondents). Both are time-related challenges that prolong the time spent traveling. Those who had driving challenges were also concerned about the price of gas which may cause respondents to be selective about when and how far they travel by car.

**Table 13.** Top Bus Concerns in Westlake-MacArthur Park

| Top Bus Concerns (Westlake-MacArthur Park) | Count | % |
|---|---|---|
| I do not feel safe getting to the bus during the day | 11 | 34% |

| | | |
|---|---|---|
| I do not feel safe while riding the bus at night | 10 | 31% |
| I do not feel safe getting to the bus at night | 9 | 28% |
| I do not feel safe waiting for the bus at night | 9 | 28% |
| The bus is unpredictable | 8 | 25% |
| **Total** | 32 | |

Many respondents from Westlake and MacArthur Park resonated with feeling unsafe getting to the bus stop and train station during the day and night – potentially a challenge for first/last mile trips. Westlake and MacArthur Park respondents, however, shared feeling unsafe getting to the bus during the day as a top concern (11 out of 32), unlike respondents from Pacoima and Panorama City only one of whom shared this concern. Nearly a third of Westlake and MacArthur Park residents still reported feeling unsafe while getting to, waiting for, and while riding the bus at night, as shown in Table 10. After the perceived lack of safety, a quarter of Westlake and MacArthur Park residents (8 out of 32) expressed concerns regarding the unpredictability of the bus which can intensify feelings of anxiety and increase exposure to safety threats while waiting for the bus.

Although not represented in Table 10, six respondents from Westlake-MacArthur Park were concerned about sidewalk infrastructure, lack of shelter from the heat or rain, and the lack of areas to rest. These issues are particularly important as bus riders can live far from bus stops and temperatures can be high in the summer as Downtown Los Angele is an urban heat island (Ladochy et al. 2021).

**Table 14.** Top Train Concerns in Westlake-MacArthur Park

| Top Train Concerns (Westlake-MacArthur Park) | Count | % |
|---|---|---|
| I do not feel safe getting to the train station during the day | 14 | 44% |
| The train station is too far from home | 11 | 34% |
| I do not feel safe waiting for the train at night | 10 | 31% |
| I do not feel safe getting to the train station at night | 8 | 25% |
| I do not feel safe while riding the train at night | 8 | 25% |
| **Total** | 32 | |

As discussed in top bus concerns in Westlake and MacArthur Park, respondents there expressed feeling unsafe getting to the train station during the day as the biggest concern. Additionally, access to transit is challenged even more at night, as 31% of respondents (10 out of 32) marked not feeling safe while waiting for the train at night and a quarter of respondents (8 out of 32) reported not feeling safe getting to and riding the train at night. Lack of safety is experienced by many living in the neighborhood since rail is the second most used mode of transportation among Westlake and MacArthur Park respondents.

Approximately a third of respondents (11 out of 32) also reported that train stations are too far from their homes, an unexpected finding since LA Metro's rail network is centralized around Downtown Los Angeles with connections to Union Station.

**Table 15.** Top Walking Concerns in Westlake-MacArthur Park

| Top Walking Concerns (Westlake-MacArthur Park) | Count | % |
|---|---|---|
| I do not feel safe walking at night | 19 | 59% |
| The sidewalk is hazardous and unkept | 10 | 31% |
| I do not feel safe walking during the day | 9 | 28% |
| There are no sidewalks on some streets | 9 | 28% |
| There are no traffic signals at some street intersections | 7 | 22% |
| **Total** | 32 | |

Many respondents from Westlake and MacArthur Park reported not feeling safe walking to their destination at night (19 out of 32) and during the day (9 out of 32), which is consistent with the findings among respondents in Pacoima and Panorama City and for other transportation modes. Furthermore, other top reported concerns were the lack of sidewalks, the lack of useable sidewalks, and the lack of traffic signals at some street intersections, infrastructure barriers to pedestrian access in Westlake and MacArthur Park.

## Public Outreach

Public subsidy programs can help to address the transportation issues that travelers face in low-income neighborhoods, especially related to financial burden and access to destinations such as jobs, activities, and opportunities. The survey asked participants about their awareness of and participation in programs, including the following:

- **BlueLA Car-Sharing Program:** BlueLA is an initiative by the Los Angeles Department of Transportation (LADOT) to promote access to affordable electric vehicle car-sharing. Users may rent cars at any of the 40 on-street stations throughout Central Los Angeles. This program does not service the Pacoima-Panorama neighborhood. The BlueLA network is currently made up of 100 electric vehicles and 200 charge points, which users can book for a few minutes or several hours. Rental rates start as low as $5/hour for income-qualified users.
- **Metro's Low Income Fare is Easy (Metro LIFE) Program:** Metro LIFE is a fare-assistance program that subsidizes up to 20 free rides every month in the Metro network or a discounted pass on another participating transit agency for low-income riders. Eligibility is based on household income.
- **Metro Bike Share:** The Metro Bike Share system consists of 1,400 self-service bicycles users may rent at any of its 93 stations for short trips. Eligible users such as seniors, students, and those with reduced fare TAP cards may sign up for monthly or annual reduced fare passes. Metro Bike Share is available in the Westlake-MacArthur Park neighborhood, but there are no bike share stations in Pacoima and Panorama City. The nearest bike share station is located in North Hollywood which is 5-10 miles away by car.
- **Scootershare Reduced Fare:** In Los Angeles, micromobility providers such as Uber Lime and Bird are required by LADOT to establish payment plans for low-income households, non-smart phone payment and booking options, and cash payment options.
- **Paratransit:** People with disabilities, senior citizens, and those who are unable to use regular fixed-route transit service may use paratransit services which provide door-to-door transportation at discounted rates. Programs include LADOT's Cityride and Los Angeles County Consolidated Transportation Services Agency ("CTSA")'s Access Paratransit program.
- **Metro Micro:** Metro Micro is an on-demand rideshare service offering quick trips on a small vehicle. Riders who are eligible for reduced fare programs such as the Metro GoPass, Student Reduced Fare TAP cards, Seniors/Persons with Disabilities Reduced Fare and Access Services TAP cards are eligible for Metro Micro discounts beginning at $1.00 ride with free transfers to Metro bus and rail. Participants of the Metro LIFE program may use pre-loaded free rides on Metro Micro with free transfers to and from other services. Metro Micro is currently not available in Westlake nor Pacoima.

All survey respondents are eligible to participate in the programs above in which eligibility is based on household income.

## Awareness of Programs Among All Respondents

While public outreach remains a challenge for many transit agencies, findings from the survey reveal low participation rates and a general lack of awareness of public programs and services that cater to low-income, car-deficit households. For example, approximately a third of the 43 respondents had heard of Metro LIFE, but only 4 respondents participated in the program.

Furthermore, survey findings reveal that none of the car-deficit households (19 respondents) or extremely low-income participants (33 respondents) use Metro Bike Share or take advantage of micro mobility reduced fare programs despite the fact that almost half of car-deficit respondents had heard of these programs. This finding suggests that the presence of micromobility programs such as bicycles and scooters do not necessarily improve access. Respondents likely do not use these services because they are not a convenient or feasible mode by which to travel to their destinations. It is also possible that respondents experience extreme challenges to enrollment or do not feel comfortable or safe bicycling—from the lack of bicycle infrastructure to make riding feel safe or not knowing how to ride a bicycle.

## Awareness of Programs in Westlake-MacArthur Park

In Westlake where the BlueLA car-sharing program operates, nearly 80% of respondents had not heard of the program at all, thus did not use it. Of those who had heard of BlueLA in Westlake, however, the majority of respondents utilized the carsharing service. Though this number remains small given the sample size, this finding suggests that awareness of the program increases usage-rates and that the leading agency should focus its efforts toward more community outreach to raise awareness. The same applies to Metro Bike share and scooters-share reduced fare programs.

**Table 17.** Public Awareness of Programs in Westlake-MacArthur Park

| Westlake-MacArthur Park | No, I have not heard of the program | % | Yes, I have heard of the program but don't use it | % | Yes, I have heard of the program and use it | % | Total |
|---|---|---|---|---|---|---|---|
| **BlueLA Car-Sharing Program** | 19 | 79% | 3 | 13% | 2 | 8% | 24 |
| **Metro's Low Income Fare is Easy (Metro LIFE)** | 12 | 60% | 3 | 15% | 5 | 25% | 20 |
| **Metro Bike Share** | 9 | 47% | 0 | 0% | 10 | 53% | 19 |
| **Scootershare Reduced Fare** | 12 | 60% | 1 | 5% | 7 | 35% | 20 |
| **Paratransit** | 12 | 63% | 2 | 11% | 5 | 26% | 19 |
| **Metro Micro** | 16 | 80% | 0 | 0% | 4 | 20% | 20 |

### Awareness of Programs in Pacoima-Panorama City

The Pacoima and Panorama City neighborhoods do not have access to programs such as BlueLA Car-Sharing, Metro Bike Share, and Metro Micro. Nonetheless, some level of awareness of these programs exists and agencies like LADOT could further gauge interest in implementation in these areas.

**Table 18.** Public Awareness of Programs in Pacoima-Panorama City

| Pacoima-Panorama City | No, I have not heard of the program | % | Yes, I have heard of the program but don't use it | % | Yes, I have heard of the program and use it | % | Total |
|---|---|---|---|---|---|---|---|
| **BlueLA Car-Sharing Program** | 8 | 80% | 2 | 20% | 0 | 0% | 10 |
| **Metro's Low Income Fare is Easy (Metro LIFE)** | 5 | 50% | 4 | 40% | 1 | 10% | 10 |
| **Metro Bike Share** | 3 | 30% | 7 | 70% | 0 | 0% | 10 |
| **Scootershare Reduced Fare** | 5 | 50% | 5 | 50% | 0 | 0% | 10 |
| **Paratransit** | 7 | 78% | 1 | 11% | 1 | 11% | 9 |
| **Metro Micro** | 7 | 78% | 2 | 22% | 0 | 0% | 9 |

# Summary of Survey Findings

## Carless and Car-Deficit vs. Fully-Equipped Households

- Carless/car-deficit households and fully-equipped households are skipping and rescheduling trips at similar rates. This could be explained by the sample – all respondents in the study are low-income and income is a large determinant of travel outcomes, according to the literature. Low-income households will modify their travel behavior to minimize the cost of transportation by reducing the total miles traveled, reducing the number of trips, decreasing trip duration (Blumenberg and Agrawal 2011).

## Westlake-MacArthur Park vs. Pacoima-Panorama City

- Both neighborhoods reported similar concerns related to safety, especially at night, and the lack of pedestrian infrastructure such as sidewalks.
- Both neighborhoods expressed concerns related to time associated with traveling on transit, such as waiting a long time, being too far from a transit stop, waiting a long time, and finding transit to be unpredictable.
- Both neighborhoods saw low rates of participation in public programs that aim to alleviate the cost of transportation in Los Angeles such as Metro LIFE and BlueLA.

# Policy Recommendations

## Design Safe Access to Transit Stops

**Improve nighttime visibility:** To better improve comfort with traveling at night – which is consistently reported as one of the greatest transportation challenges across all non-automobile transportation modes in both Westlake-MacArthur Park and Pacoima-Panorama City – added pedestrian-scale sidewalk lighting should be considered. Furthermore, the role of visibility and community presence, especially during times with less foot traffic, must be considered as a preventative measure to help people feel safer and secure in public spaces like bus stops.

Fears about crime or violence on the way to and from transit stops and stations is just as concerning as those that riders experience while on transit, leaving many riders who depend on transit feeling chronically unsafe depending on the frequency and duration they use transit. Environmental design interventions like nighttime lighting and “buildings designed with windows facing the street to provide informal protective surveillance” can improve travelers feelings of safety (Agrawal et al., 2020).

Studies find that concerns about safety traveling to and from transit stops at night may deter ridership; however, lighting is an intervention that tends to reduce fear of crime (Chalfin, 2022). The first randomized field experiment to study “tactical” lighting intervention was conducted in 2016 in disadvantaged neighborhoods in New York City. During the six-month period, outdoor nighttime index crimes declined by 36% as a function of the intervention and a 6% overall decline in serious criminal activity in communities that received the intervention (Chalfin, 2022). Following community support for the continuation of the light towers outside of the study period, the researchers were able to study the longer-term deterrence effects over the span of three years. They found that the effects remained strong despite seasonality and the pandemic. Both studies found little evidence for displacement of any type of crime to nearby areas.

**Provide safe transportation connections:** Carless and car-deficit communities in both study neighborhoods could largely benefit from the expansion of programs like Metro Micro (which does not currently operate in Westlake-MacArthur Park and Pacoima-Panorama City) and other shared mobility options like taxis and ridehailing to improve safety access at an affordable rate (Agrawal et al., 2020). This expansion should not only apply Metro Micro’s service areas but an expansion of service that is on-demand and aligns with all transit schedules—which run up 24 hours a day through Westlake and Pacoima-Panorama City with some lines like the Metro 51 and 233 bus lines—rather than ending at 9 PM or 11 PM depending on the service area.

The expansion of shared mobility is particularly helpful in Pacoima and Panorama City compared to Westlake and MacArthur Park neighborhoods because of destinations are further apart due to suburbanization and urban sprawl, where predominantly single-family land uses make destinations farther apart. For example, two adjacent parallel bus lines in Pacoima, the Metro 166 line that runs on Nordoff Street and the Metro 152 line that runs on Roscoe

Boulevard, are approximately one mile away from each other and even up to two miles in certain areas. Thus, door-to-door services like Metro Micro that offer improved first/last mile connections is useful for neighborhoods where land uses and existing transit services are dispersed and challenging to navigate without the use of a car.

**Invest in community safety initiatives:** Survey respondents reported that the perceived lack of safety while getting to or waiting to make their transit connections was one of the greatest challenges to transportation access. Cities like San Francisco have a similar community safety and neighborhoods engagement program known as the Community Ambassadors Program (CAP) whose services include acting as unarmed, non-law enforcement safety escorts, reporting emergencies and hazards, provide referrals to social services and conduct outreach. They operate in six neighborhoods and are placed near transit hubs serving Muni and BART transit stations across the city. Last year, ambassadors provided 4,156 safety escorts (walking with people to get them where they are going and may be requested in advance by calling 311) and logged 14,484 interactions related to directions and wayfinding support (including helping with directions, safety escorts, or help navigate public transit) (“Community Ambassadors Program Data 2023-2024”). These numbers indicate a desire for proactive interventions to promote safety through the presence of people, and unarmed and non-law enforcement personnel in this case, who could be trusted to respond to crisis immediately. This is especially important to consider at night when there is less community presence and less visibility.

Community policing and staffing are often cited as strategies to improve safety on board transit, and even preferred over technological solutions—for example, security cameras were found to not have significant impacts on feelings of safety (Loukaitou-Sideris et al., 2020, Loukaitou-Sideris & Fink 2009, Wallace, 1999). Furthermore, studies suggest that riders, especially women, reported feeling less safe walking to and from train stations and bus stops than waiting at transit stops (Ceccato & Loukaitou-Sideris, 2022). More programs should be implemented to study the potential impacts of staffing and safety escorts on perceptions of safety getting to and from transit to improve first/last mile access.

**Address gaps in pedestrian infrastructure:** Westlake-MacArthur Park and Pacoima-Panorama City report missing sidewalks and the unusable sidewalks in hazardous and unkept conditions. Sidewalks act as important infrastructure for pedestrian safety as they establish a pedestrian’s right-of-way that is separated from vehicular traffic.

In 2016, the City of Los Angeles adopted its Mobility 2035 as a circulation element of the General Plan that outlines policies that support the goals and objectives related to its multimodal transportation network. Under this mobility element, an estimated 42% of its sidewalks spanning 10,750 miles have been identified to be in a state of disrepair. Thus, program MT.7 in Mobility Plan 2035 states that the City will “Implement a sidewalk improvement program to bring up all existing degraded sidewalk sections to City standards and implement a program to ensure that future degraded sidewalk sections are promptly identified and repaired in a timely manner.”

The same year, the Safe Sidewalks LA program was launched, a $1.4 billion program to make sidewalks more accessible to everyone. However, less than 1% of sidewalks have been repaired under the program with an additional 50,000 MyLA311 reports of sidewalk issues that have not been addressed, according to the 2021 audit by the city controller's office. As of 2023, only 2% of sidewalk and curb ramp repairs (79 out of 4,375) have been made in Pacoima and Panorama City, and only 5% of sidewalk and curb ramp repairs (215 out of 4,375) have been made in Westlake-MacArthur Park, according to Safe Sidewalks LA reporting and mapping efforts. Additionally, only 10 sidewalk repairs have been planned in Pacoima and Panorama City, and only 6 sidewalk repairs have been planned in the Westlake neighborhood.

Measure HLA was passed this year to seek greater accountability by requiring the City to implement street modifications outlined in the Mobility Plan 2035 anytime a street improvement, such as paving, is made on a street segment that is at least one-eight of a mile long. Although this includes street enhancements that improve travel for non-auto modes like walking, the City must make a more concerted effort to address all sidewalk issues that it has identified in its Mobility Plan 2035 without requiring planned street improvement project not related to sidewalks as a prerequisite.

**Protect transit riders from weather:** Survey findings report that both respondents from Westlake-MacArthur Park and Pacoima-Panorama City express concerns related to the weather such as heat when walking to transit. As recently as 2022, communities in the San Fernando Valley experienced record-breaking temperatures over 100 degrees Fahrenheit during the summer. Similarly, many parts of Los Angeles experience exacerbated heat due to the urban heat island effect created from high concentration of impervious surfaces.

Interventions such as the "cool pavements" pilot program in Pacoima have taken place where it was reported that there was an overall 10-degree reduction in surface temperatures and an average air temperature reduction of 3.5 degrees on extremely hot days (Haider, 2024). Shade, however, is one of the most effective ways to provide relief from the heat – thus, previously redlined communities would greatly benefit from more bus shelters and tree canopy (Lanza & Durang, 2021). In Los Angeles, only 26% of the 10,527 LA Metro bus stops have shelters that provide shade (Brozen et al., 2023). Nonetheless, the City must continue to make major investments in bus shelters as an adaptation measure as climate change continues to exacerbate extreme heat, especially in socially vulnerable areas as measured by resources such as CalEnviroScreen which identifies Pacoima-Panorama City and Westlake-MacArthur Park neighborhoods as Disadvantaged Communities (DACs), areas which most suffer from economic, health, and environmental burdens.

## Rethinking Safety on Transit

**Invest in alternative forms of policing:** As respondents report safety on transit as a top concern, local agencies should consider different strategies to ensure safety for transit riders. To better the perception of safety while addressing over-policing concerns that disproportionately affect riders of color, transportation agencies in Los Angeles should consider

investing in more unarmed personnel and the expansion of social services and outreach on both bus and rail. In particular, the Metro's Ambassadors program has offered successes in improving the perception of safety and should be sustained.

The Metro Ambassador Program which was introduced as a pilot in 2021 and made permanent with their official launch in March 2023. The Metro Ambassador Program is a new approach to security by adding 300 "transit ambassadors" to provide multilingual navigation assistance, crisis intervention outreach, and first aid and help report maintenance, cleanliness or safety issues. In addition, transit ambassadors perform much of the same duties as transit police to improve perceptions of safety by deterring criminal activities like illegal drug use with their high visibility, responding quickly to immediate safety needs using de-escalation, and at times, apprehending aggressors despite being unarmed. Metro Ambassadors have even saved lives using CPR, NARCAN to treat opioid overdoses, and other interventions on more than 70 occasions during the pilot program (Metro Board Report 2023).

According to a Metro staff report, Metro's Ambassador program has been proven to improve the perception of safety on transit. In a survey on the program with 11,337 respondents, 63% of respondents stated that seeing Ambassadors made them feel safer and 40% of respondents had asked for help (Metro Board Report 2023). The survey also found that 43% of those asked for help from Ambassadors are satisfied with safety from crime, compared to 33% of those who have not seen Ambassadors (Metro Board Report 2023). Metro's system saw a decrease in crime by 53% in the six-month period following the implementation of the Metro Ambassadors program (Tracy, 2023). This suggests that greater presence of Metro staff has not only improved perceptions of safety but also may have had a hand in reducing crime.

**Better service for all transit riders:** In a study of 749 transit users at 12 transit stops and stations around metropolitan Los Angeles, the most important determinant of user satisfaction in an environment of personal safety was frequent and reliable service (Iseki & Taylor, 2010). Research on travel behavior reveals that travelers perceived out-of-vehicle time spent waiting, walking, and transferring as more "onerous" than in-vehicle time. Similar to the survey results, this study found that "safety at night" and "safety during the day" received the highest importance ranking (Iseki & Taylor, 2010). Transportation providers should focus on adding services and improving the quality of these services with increased frequency and reliability.

## Expand Transportation Services and Programs

**Expand service areas of existing programs:** Pacoima and Panorama City neighborhoods do not have access to programs such as BlueLA Car-Sharing, Metro Bike Share, and Metro Micro. Nonetheless, some level of awareness of these programs exists and agencies like LADOT could further gauge interest in implementation in these areas.

## Consider Universal Auto Access

**Close financial gaps in vehicle access:** From the survey, over a third of carless and car-deficit respondents reported plans to purchase a vehicle in the next year despite their inability to

afford one without negatively affecting their budget for other necessities. From previous studies, over three-quarters of respondents reported that regaining a car was worth it, reflecting how land use policy and distribution of opportunities largely favors those who travel via automobiles over other modes of transportation with serious implications on quality of life (Klein et al., 2023). This suggests that rather than solely investing in public transportation, planners and policymakers should also consider programs to support car travel among low-income households. Policies could include expanding carsharing and ridehailing services with broad subsidies that reduces the financial impact on low-income households while supporting their automobile access and use. Private vehicles almost universally allow people to “travel further, faster, and more efficiently than other modes” to both work and non-work destinations (Blumenberg et al., 2020). Benefits of such automobile access include being employed, gaining employment, working additional hours, and earning higher wages. Tours that involve multiple trips (trip chains), children, shopping, and carrying heavy goods may be carried out more conveniently via car. Individuals with access to vehicles experience better employment economic outcomes than those in zero-vehicle households given the greater ease of travel and accessibility to jobs (Klein et al., 2023).

In some instances, these services may even reduce vehicle ownership. In the U.S., the average number of vehicles per household was 0.55 for respondents before joining a carsharing program and was reduced to 0.29 vehicles per household after joining (Clewlow, 2016). Furthermore, an additional carshare study of programs in the Bay area saw that saw more trips made by transit and walking as a result of the carsharing program (Clewlow, 2016).

## Continue Public Outreach

**Increase awareness of public programs:** Many programs, especially the Metro LIFE program and BlueLA’s car-sharing program, report low awareness and participation rates among respondents in the study. The City should strive to increase awareness through continuous outreach efforts with communities in a manner that is culturally sensitive, overcomes language barriers, and compensates community members for their time and input.

# Conclusion

The Westlake-MacArthur Park and Pacoima-Panorama City neighborhoods in Los Angeles are both low-income predominantly communities of color that report large concentrations of transit users and zero-car households. In comparing their travel patterns in an online survey, carless and car-deficit respondents from Pacoima-Panorama City reported carpooling and riding the bus as their most used transportation modes, whereas Westlake-MacArthur Park reported higher use of transit such as bus and rail.

Survey findings reveal that over half of all carless and car-deficit respondents have skipped and/or rescheduled trips to healthcare, school, work, and other destinations due to transportation issues. In addition, residents of both neighborhoods expressed great concern about safety, the lack of usable sidewalks, concerns related to time associated with travel, and reported low awareness and participation of public transportation programs such as Metro LIFE (free transit trips) and BlueLA (car-sharing) that aim to alleviate the travel burdens of low-income households. Local agencies such as LADOT should consider investment in interventions to improve mobility, and ultimately access to a variety of activities and opportunities, of carless and car-deficit households in the Westlake-MacArthur Park and Pacoima-Panorama City neighborhoods.

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# Appendix: Survey Questionnaire

## Screening Questions

1. Are you a resident of the Pacoima or Macarthur Park neighborhoods? [Show study area map]
    - Yes
    - No
2. Are you 18 years of age or older?
    - Yes
    - No
3. How many working automobiles, vans, and trucks are kept at home for use by members in your household? (Census)
    - [answer here]
    - 0 - If none, then proceed to survey.
4. How many drivers are in your household?
    - [answer here]

    Calculate car-deficiency.

    **Car to driver ratio =** $\frac{sum\ of\ working\ cars,trucks,or\ vans\ (from\ question\ 1)}{sum\ \ of\ drivers\ (from\ question\ 2)}$

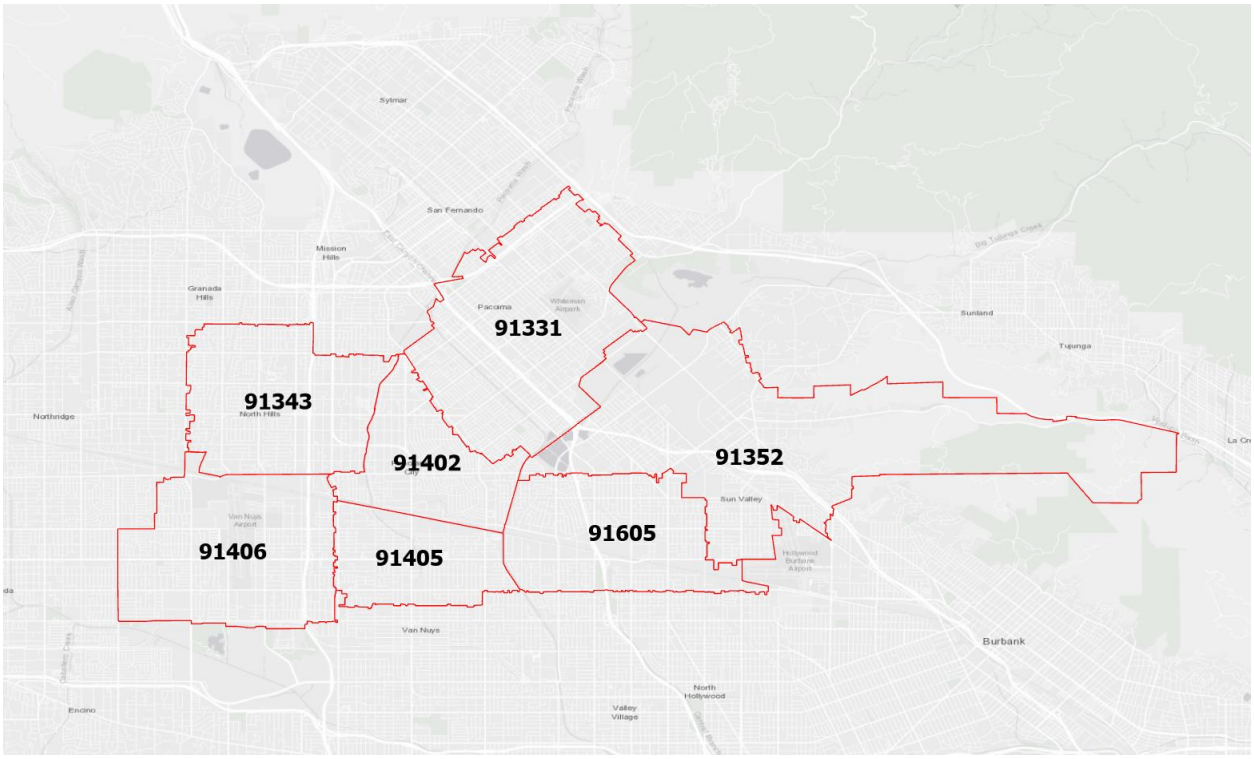
    *Calculates average number of cars per individual who is able to drive in a household. Do not round.*

    **If > 1, the participant <u>does not</u> qualify for the survey.**
    **If < 1, then proceed to the next question.**
5. Have you completed the written consent form for this project? [insert link to written consent for]
    - Yes
    - No

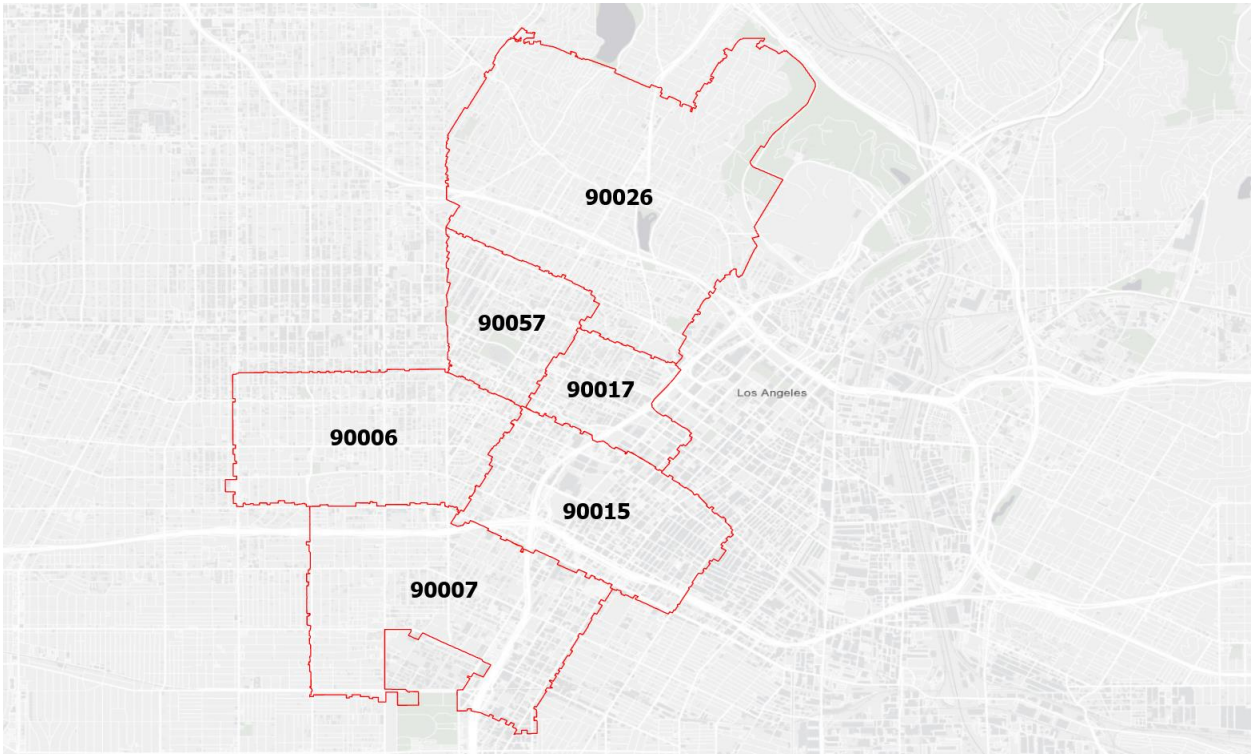
    **If "No", the participant may NOT take the survey.**

**<u>Study Area Maps for Screening Questions (depending on neighborhood)</u>**

**Panorama City and Pacoima Zip Codes:**




**Macarthur Park and Westlake Zip Codes:**




## Survey Questions

Thank you for agreeing to take our survey!

**Please note:** By continuing to complete this survey, you attest to being 18 years of age or older.

1. How much do you agree or disagree with the following statements: "**It is generally easy for me to get where I need to go**."
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree
2. [Optional] Please briefly explain your answer from the previous question.

**Car Access:**

3. Are you financially able to purchase a vehicle?
    - No
    - Yes, I choose not to purchase a vehicle even though I can afford it
    - Yes, but it will significantly impact my budget for other necessities (food, housing, etc.)
4. Do you plan to purchase or finance a vehicle in the next year?
    - No
    - Yes, I plan to purchase a new gasoline powered car
    - Yes, I plan to purchase a used gasoline powered car
    - Yes, I plan to purchase a new or used electric car

**Transportation Patterns:**

5. What types of transportation do you use in a typical month? Please select all that apply. [Use skipping logic for following questions in this section]
    - I drove my own car, truck, or van
    - I got a ride from someone I know (carpool)
    - I borrowed a car from someone I know (family, friends, acquaintances)
    - I drove a shared car from a carshare program (Zip Car, Getaround, BlueLA, etc.)
    - I used ridehail (Uber, Lyft, taxi, etc.)
    - I took the bus
    - I took the train
    - I used my own bike
    - I used a bikeshare/scootershare service (Metro bikeshare, Bird, Lime, Spin, etc.)
    - I walked
    - Other: _____
6. In a typical month, how often do you use your own **car**?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week

- Nearly every day
- (I do not own one)

7. In a typical month, how often do you **give a ride to someone you know** (friends, family, and/or acquaintances)?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
    - (I do not own one)
8. In a typical month, how often do you **get a ride from someone you know** (friends, family, and/or acquaintance)?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
9. In a typical month, how often do you typically **borrow a car from friends, family, and/or acquaintances?**
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
10. In a typical month, how often do you **lend your car to friends, family, and/or acquaintances**?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
11. In a typical month, how often do you typically **use a car-sharing service** (Zipcar, BlueLA, an informal arrangement with some other group)?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
12. In a typical month, how often do you typically use **ridehail services** (Uber, Lyft, taxi, etc.)?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week

- Nearly every day

13. In a typical month, how often do you typically ride the **bus**?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
14. In a typical month, how often do you typically ride the **train**?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
15. In a typical month, how often do you typically ride **your own bicycle**?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
16. In a typical month, how often do you typically ride **your own scooter or skateboard**?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
17. In a typical month, how often do you typically use **bike-sharing or scooter-sharing services** (i.e. Metro Bike Share, Bird, Lime, Spin, etc.)?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day
18. In a typical month, how often do you typically **walk** to your destination (not including when you walk to public transit)?
    - Less than once a week
    - About once a week
    - 2-3 times a week
    - 4-5 times a week
    - Nearly every day

**Transportation Experience:**

19. What kind of concerns do you have when you travel by **car, truck, van, carpool and/or ridehail (Uber, Lyft, taxi, etc.)**? Please mark all that apply:

- I am worried about cars and oncoming traffic
- I am worried about reckless driving
- I am worried about finding parking
- I am worried about gender-based/sexual harassment or violence
- I am worried about finding a safe spot to be dropped off
- The road is hazardous and unkept
- There is a lot of traffic getting to my destination
- Gas is expensive
- My car is not reliable
- My car is being borrowed when I need it
- Rideshare services (like Uber and Lyft) are expensive
- Carshare stations are far
- I do not travel by car
- I have no concerns
- Other (please explain):

20. What kind of concerns do you have when you travel by **train**? Please mark all that apply:
    - The train station is too far from home
    - The train station is too far from my destination
    - I do not feel safe getting to the train station during the day
    - I do not feel safe waiting for the train during the day
    - I do not feel safe while riding the train during the day
    - I do not feel safe getting to the train station at night
    - I do not feel safe waiting for the train during at night
    - I do not feel safe while riding the train during at night
    - I am worried about gender-based/sexual harassment or violence
    - I am worried about cars and oncoming traffic getting to/from the station
    - The sidewalk is hazardous and unkept getting to/from transit
    - I wait a long time for the train
    - There are no places to sit/rest at the train station
    - I can't find a seat on the train
    - It takes too long to get to my destination
    - Available transit does not go where I need to go
    - I have to make many transfers
    - The train fare is expensive
    - I do not use the train
    - I have no concerns
    - Other (please explain):
21. What kind of concerns do you have when you travel by **bus**? Please mark all that apply:
    - The bus stop is too far from home
    - The bust stop is too far from my destination
    - I do not feel safe getting to the bus during the day
    - I do not feel safe waiting for the bus during the day
    - I do not feel safe while riding the bus during the day
    - I do not feel safe getting to the bus at night

- I do not feel safe waiting for the bus at night
- I do not feel safe while riding the bus at night
- I am worried about gender-based/sexual harassment or violence
- I am worried about cars and oncoming traffic getting to/from the bust stop
- The sidewalk is hazardous and unkept getting to/from the bust stop
- I wait a long time for the bus
- The bus is unpredictable
- There are no places to sit/rest at the bus stop
- There is no shelter from the heat or rain while I wait for the bus
- I have a hard time boarding the bus
- I can't find a seat on the bus
- It takes too long to get to my destination by bus
- Available bus service does not go where I need to go
- The bus makes too many stops
- There is a lot of traffic getting to my destination
- I have to make many transfers
- The bus fare is expensive
- I do not use the bus
- I have no concerns
- Other (please explain):

22. What kind of concerns do you have when you travel by **walking**? Please mark all that apply:
    - I do not feel safe walking during the day
    - I do not feel safe walking at night
    - I am worried about gender-based/sexual harassment or violence
    - I am worried about cars and oncoming traffic
    - The sidewalk is hazardous and unkept
    - There are no sidewalks on some streets
    - There are no curb cuts or ramps at some street intersections
    - There are no crosswalks or pedestrian crossings at some street intersections
    - There are no traffic signals at some street intersections
    - I wait a long time for my turn to cross the street (i.e. long red light, traffic signal does not change to 'walk' signal)
    - There is not enough time to cross the street
    - The street is too wide/long to walk across
    - Weather conditions (i.e. hot, cold, raining, etc. )
    - My destination is far by walking
    - I have health concerns that make it challenging to walk to my destination
    - I have no concerns
    - Other (please explain):
23. What kind of concerns do you have when you travel by **bicycle or scooter**? Please mark all that apply:
    - I am worried about cars and oncoming traffic
    - I am worried about reckless driving

- I am worried about finding parking for my bicycle/scooter
- I am worried about harassment or violence
- The road is hazardous and unkept
- Weather conditions
- There are no bicycle lanes or infrastructure to protect me from cars
- There are not enough bicycle lanes or infrastructure to protect me from cars
- Bikeshare and scooter share services are expensive
- I do not travel by bicycle or scooter
- I have no concerns
- Other (please explain):

24. In the past 30 days, how often did you have to reschedule an appointment because of a problem with transportation?
    - Often
    - Sometimes
    - Never
25. [Follow-up question] What kind of appointments did you have to reschedule because of a problem with transportation?
    - Work
    - School
    - Healthcare / Doctor's office
    - Visiting friends or family
    - Recreational activities, classes
    - Other:
26. In the past 30 days, how often did you skip going somewhere because of a problem with transportation?
    - Often
    - Sometimes
    - Never
27. [Follow-up question] What kind of trips did you skip because of a problem with transportation?
    - Work
    - School
    - Healthcare / Doctor's office
    - Visiting friends or family
    - Recreational activities, classes
    - Grocery shopping
    - Exercise
    - Other:
28. [Follow-up question] Please briefly describe why you are unable to make these trips.
    - [answer here]

**Transportation Programs & Resources:**

29. Are you aware of the BlueLA car sharing program? **[Macarthur Park respondents only]**
    - Yes, I have heard of the program
    - Yes, I have heard of the program and use BlueLA
    - No, I have not heard of the program
30. What are some other transportation services and programs you have heard of before? Any program you are interested in (regardless if you are eligible or not)?
    - Metro's Low Income Fare is Easy (Metro LIFE)
    - Metro Bike Share
    - Scooter (i.e. Bird Access, Lime Access, Spin Access, Lyft Community Pass)
    - Paratransit services (LADOT Cityride, Access Services, (look up the county paratransit services)
    - Metro Micro
    - Other:

**Demographic Characteristics**

1. What is your zip code?
    - [Answer here]
2. How long have you lived in your community?
    - [Answer here]
3. Do you have a driver's license?
    - Yes
    - No
4. How many cars does your household own or lease?
    - None
    - 1 car
    - 2 cars
    - 3 cars
    - 4+ cars
5. How old are you?
    - [enter age here]
6. How many people currently live in your household that are…?
    - Under the age of 5: __
    - 5 to 17 years old: __
    - 18 to 64 years old: __
    - 65 years old or older: __
2. Gender: How do you identify? (Check all that applies)
    - Man
    - Non-binary
    - Woman
    - Transgender woman
    - Transgender male
    - Prefer to self-describe, below: ___

3. Are you of Hispanic, Latino, or Spanish origin?
    - No
    - Yes
4. What is your race? Check all that apply.
    - White
    - Black or African American
    - American Indian or Alaska Native
    - Asian
    - Native Hawaiian or Other Pacific Islander
    - Multiple
    - Some other race
5. What is your total annual household income (include salary, pensions, dividends, and social security payments)?
    - $0 - $30,000
    - $31,000 - $60,000
    - $61,000 - $90,000
    - $91,000 - $120,000
    - $120,000 or more
7. Are you enrolled in any of the following programs:
    - Calfresh/SNAP
    - Medicaid or Medi-Cal
    - CalFresh, SNAP
    - SSI/SSP
    - CalWORKS, TANF, Tribal TANF
    - Federal public housing assistance
    - LIHEAP (low-income energy assistance)