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# The Role of Transportation in School Access: A Case Study of the Geffen Academy

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The Geffen Academy

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# The Role of Transportation in School Access

## *A Case Study of the Geffen Academy*

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

By: Esteban Doyle

Client: The Geffen Academy

Faculty Chair of Committee: Evelyn Blumenberg

## 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 Department and of the Geffen Academy 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.

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## Executive Summary

This research project examines the impact of transportation on educational access. I examine the role that transportation plays in educational access, and how improving transportation can help to increase the socioeconomic and racial/ethnic diversity of private secondary schools in Los Angeles. To answer this research question, I use my client, the Geffen Academy, as a case study. The Geffen Academy is a private secondary school located in Westwood, on the Westside of Los Angeles. The school is affiliated with the University of California, Los Angeles (UCLA) and is designed to serve the students of UCLA staff and faculty as well as the general Los Angeles population. Although the school is able to provide tuition assistance to students, the school fears that inadequate transportation may be a barrier to enrolling a more socioeconomic and racially-diverse student body. The Geffen Academy wants to identify initiatives related to transportation the school can take to increase access to the campus.

To accomplish this task, I divide the research into six main steps. First, I describe the demographics of current Geffen Academy students and compare the student body to the student population of nearby public schools. Second, I compare the spatial distribution of current students with the spatial distribution of students who were admitted, but declined to enroll. Third, I use travel survey data of enrolled students to analyze travel patterns and identify desired mode choice. Fourth, I then assess the existing transportation access to the Geffen Academy, and compare this access to the spatial distribution of students and results of the travel survey. Fifth, I identify neighborhoods with low densities of enrolled students, and compare transportation options to the school. Finally, I report on my research of other independent schools in Los Angeles to gain insight on how competitor schools approach transportation as it relates to student body diversity.

From my analysis, I draw five main conclusions. The first is the Geffen Academy has large proportions of white and higher-income students. The second is that more low-income and non-white students come from the families of UCLA Staff than UCLA Faculty or non-UCLA affiliated families. The third is that there does not appear to be a noticeable difference in the spatial patterns of currently enrolled students, and students who declined admission, thus making it difficult to isolate the direct impacts of transportation on a family's decision to enroll or not enroll their student at the Geffen Academy. Fourth, most families of enrolled students are interested in carpooling. Finally, this analysis finds that public transit routes that serve the Geffen Academy only serve neighborhoods that already have high enrollment, and therefore carpooling may be a more efficient travel mode than traditional, fixed-route public transit.

Based on the findings from this analysis, I recommend to the Geffen Academy the following:

**1. Promote carpooling to lower the cost of driving for families.**

Due to intense traffic, even families who live relatively close to the Geffen Academy have long travel times to get their children to school. Carpooling can help reduce the cost of driving by allowing families to share expenses such as gas and rotate driving responsibilities. A majority of enrolled students travel by car, and carpooling is the preferred alternative mode choice among families who currently do not carpool. Therefore, making car travel more accessible to a greater number of families will greatly reduce transportation barriers.

**2. Improve data collection to identify the transportation needs of enrolled students and students who decline admission.**

The Geffen Academy currently has little data that is directly related to the transportation needs of students, and the data that exist are only for enrolled students, not students who declined admission. The Geffen Academy should continue to survey enrolled students regarding their travel behavior, and seek input from families regarding the types of investments families they want from the school to make travel easier. In addition, Geffen Academy needs to focus on collecting information on why students decline admission. It is possible that transportation is not as strong of a barrier to enrollment for low-income and non-white students as the school may think. Therefore, more research into identifying the specific barriers these students face is needed to increase the school's accessibility.

**3. Work with community-based organizations that focus on increasing access to independent schools among low-income and non-white students.**

There are several organizations that focus on helping more students from disadvantaged households enroll in independent schools in Los Angeles. Some of these organizations include A Better Chance and The Independent School Alliance for Minority Affairs. Developing a partnership with these organizations can help Geffen Academy reach more students and adopt best practices from other schools.



- 4. Create a dedicated transportation page on the school's website to assemble all transportation-related resources into one, easy to access webpage.**

Finding information regarding all possible travel options can be time-consuming and difficult. Therefore, Geffen Academy should develop a page on the school's website dedicated to transportation options. This webpage should include information on all travel modes such as transit, driving, carpooling, and bicycling. Information should include approximate costs, approximate travel times from select neighborhoods, and links to other resources such as local public transit agency websites.

- 5. Provide a school bus service to reach students who may not be able to access the school via driving or public transit.**

Existing public transit routes do not efficiently connect the Geffen Academy with many neighborhoods from which the school wants to increase enrollment. Providing a school bus gives the school the flexibility to send a bus to the homes of students who would benefit the most from bus travel.

- 6. Include transportation costs in financial aid calculations, and provide a transportation allowance to low-income families to cover travel expenses.**

According to the school's website on tuition assistance, the school includes a \$180 cost for public transportation. The school should increase the amount and allow families who qualify for tuition assistance to access that money to cover any transportation service that fits their needs the best. The money could be used for gas and vehicle maintenance, public transit passes, or using ridesharing services.

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# 1. Introduction

The Geffen Academy is a private, UCLA-affiliated middle and high school, located in the Westwood neighborhood of Los Angeles, California. The school is the result of a \$100 million donation from David Geffen (Gordon, 2015). The purpose of the school is in part to serve the children of UCLA staff and faculty, and attract new faculty and staff to UCLA who may be concerned about housing prices and the quality of existing schools in the neighborhoods in which they can afford to live (Gordon, 2015).

Currently, school administrators worry that because of the school's location in Westwood, the school may be inaccessible to students who live beyond a few miles of the school. The Westside of Los Angeles has predominately higher-income and white families, and therefore the school is concerned about socioeconomic and racial diversity in its student body. In this report I seek to identify transportation options that can help make it easier for a more diverse group of students to attend the Geffen Academy located in Westwood, Los Angeles. What does a "more diverse" student body mean? For the purposes of this research, diversity can be thought of as students coming from a broad range of geographic locations, racial/ethnic groups, and socioeconomic backgrounds, such that the student body reflects the population of the greater Los Angeles region.

I divide the research into six main steps. First, I research the demographics of current Geffen Academy students and compare the socioeconomic and racial profile of the student body to the student population of nearby public schools. Second, I compare the spatial distribution of current students with the spatial distribution of students who were admitted, but then declined to enroll. Third, I use travel survey data of enrolled students to analyze mode choice, travel patterns, and identify the top desired but not used travel mode. Fourth, I then assess the existing transportation access to the school, and compare this access to the spatial distribution of students. Fifth, I identify neighborhoods with low densities of enrolled students, and describe transportation options to the school. Lastly, I research other independent schools in Los Angeles and conduct several interviews with school administrators to gain insight on how other schools approach transportation as it relates to student body diversity.

From this analysis, I find that a fair amount of the current student body's diversity comes from the students of UCLA staff members. Geffen Academy should focus on UCLA staff for recruitment as these families already are overcoming transportation barrier while coming to work. Next, I find that there is no significant difference in the spatial distribution of enrolled and not enrolled students. Although this seems to suggest that transportation may not be a barrier, I think issues of selection bias make this finding difficult to interpret. My third finding is that while a majority of families drive

their student alone to school, a majority of families are interested in carpooling. My fourth finding is that public transit may not be helpful in recruiting students who do not already live near campus, and the school should instead focus on providing either a school bus or promoting carpooling. Finally, interviews from peer institutions reveal that working with community-based organizations can be a helpful tool in recruiting a diverse student body.

Based on my analysis, I recommend the following to the Geffen Academy:

1. Promote carpooling to lower the cost of driving for families.
2. Improve data collection to identify the transportation needs of enrolled students and students who decline admission.
3. Work with community-based organizations that focus on increasing access to independent schools among low-income and non-white students.
4. Create a dedicated transportation page on the school's website to assemble all transportation-related resources into one, easy to access webpage.
5. Provide a school bus service to reach students who may not be able to access the school via driving or public transit.
6. Include transportation costs in financial aid calculations, and provide a transportation allowance to low-income families to cover travel expenses.

These recommendations are meant to serve as an initial starting place for discussion among Geffen Academy staff to determine the appropriate next steps.

## 2. Literature Review

The purpose of this research project is to understand how transportation influences access to quality education for children. Previous studies have focused on how families choose which school to send their children to, and the barriers that exist for families choosing private schools (Buddin, et al., 1998; Goldring and Hausman, 1999). When it comes to student transportation, most of the existing research centers on travel mode to school, the relationship between active transportation and childhood obesity, and, related, evaluations of Safe Routes to School (McDonald, 2007). However, there is little research on the relationship between transportation access and school choice, and more specifically, the role of mobility improvements in providing families with better access to schools.

### 2.1 Who Attends Private Schools?

The education system in the United States is a mixture of public, private, charter, and magnet schools. According to the U.S. Department of Education (2018), 10.3 percent of all students attended a private school in 2015. The share of students in private schools has remained constant since 1999 (U.S. Department of Education, 2017). However, the split between public and private school varies greatly between regions and even across neighborhoods within cities (Kolko, 2014). Approximately 80 percent of private schools in the U.S. have a religious affiliation, and roughly 50 percent of religiously-affiliated private schools are Catholic. Therefore, metropolitan regions with the highest private school enrollments tend to be areas with a higher share of Catholic residents (Kolko, 2014).

Although the share of students enrolled in private schools has remained constant, there is a shift occurring in the demographic composition of students enrolling in private schools. Murnane and Reardon (2018) find that the share of private school students from the 90th percentile of family income (the top 10 percent) has remained steady since 1968, around 18 percent. Conversely, the share of students from the median family income and 10th percentile family income has decreased during this time (Murnane and Reardon, 2018). While affluent families have always sent their children to private schools at higher rates than lower-income families, the gap has widened over time, with fewer lower-income families sending their children to private schools today than in previous years.

One factor contributing to this growing income gap among private school students is the decrease in the number of Catholic schools. As I mention previously, Catholic schools are the predominate type of private school in the United States. Catholic schools historically were better able to serve students from middle- and low-income

families due to the schools' lower tuitions (Murnane and Reardon, 2018). However, Catholic schools have experienced rapid growth in tuition, 570 percent from 1970 to 2010 after adjusting for inflation (Murnane and Reardon, 2018). In addition to rising tuition, the child abuse scandals have left a negative image of the Catholic Church and Catholic schools, resulting in a decrease in enrollment, forcing many of these schools to consolidate or close down (Murnane and Reardon, 2018). Higher-income families are moving their children from Catholic schools to non-religious affiliated schools. These non-religious schools generally have higher tuitions, and therefore are less accessible to middle- and low-income families than Catholic schools. As a result, although Catholic schools still have the majority of private school enrollment, there has been increasing enrollment in private, non-religious schools, and this increase is almost exclusively from higher-income families (Murnane and Reardon, 2018).

In addition to differences in income, private school students are more likely to be white than public school students (Reardon and Yun, 2002; Betts and Fairlie, 2001). Reardon and Yun (2002) find that white students enroll in private schools at higher rates than African-American and Hispanic/Latino students across all incomes. The racial disparities vary across metropolitan regions and private school type. In a study of school districts in Louisiana, Bankston and Caldas (2000) find that schools with higher white student enrollment in private schools are in areas with larger percentages of students of color in public schools. Reardon and Yun (2002) find similar results in their national study, and add that private schools in large metropolitan regions are more segregated than schools in smaller cities and rural areas. Despite different private school enrollment rates by race, Betts and Fairlie (2001) argue that parent education and household income are the main factors behind the varying enrollment rates.

## 2.2 How do Families Choose a School?

In a city like Los Angeles with many school options, it is important to understand the factors that families consider in deciding to send their children to a public or private school. Among these factors, which are the most significant? Is transportation to and from the school one of these critical factors?

Buddin, et al. (1998) examined 1990 Public Use Microdata Samples of Census data for California and data from the National Longitudinal Survey of Youth to identify which factors increase the likelihood that a family would send their children to private school over public school. They discovered that while income is directly correlated with choosing private school, the relationship is small. For example, if the family income increased from \$20,000 to \$80,000 the predicted probability of selecting a private school only increased from 0.06% to 0.09% (Buddin, et al., 1998). The same

study describes other important factors such as the educational attainment of parents and number of children. Parents who have higher levels of education have a higher probability of choosing to send their children to private school. In addition, as the number of children in a family grows, parents have fewer resources to spend per child and are less likely to send their children to private school (Buddin, et al., 1998).

Goldring and Hausman (1999) conducted a similar study but rather than focusing on families who decided to send their kids to a private or magnet school, they also considered families who looked at different school alternatives but then decided to stay with their neighborhood school. The researchers administered a survey to parents in St. Louis to determine which factors were most important to them in choosing to send their children to a particular school. They found that over 70 percent of the parents in their sample sought at least some information about an alternative school in addition to their attendance-zone school. When looking at the specific reasons why parents choose to send their kids to a magnet school, Goldring and Hausman (1999) find that negative views of the attendance-zone school was a large factor. When it comes to transportation, 17 percent of all parents expressed some concern about transportation to the school. Those parents who had little to no concern about transportation were more likely to send their children to a magnet school further away than parents who had transportation concerns (Goldring and Hausman, 1999).

### 2.3 How do Children Travel to School?

Understanding student travel behavior is important to evaluating potential transportation solutions. Knowing what factors have the greatest influence on student travel will help determine how the Geffen Academy can improve access and mobility to the school.

How children travel to school has changed over the past several decades. Using national travel survey data, McDonald (2007) notes that the majority of children walked or biked to school in 1969, but now the share is closer to 10 percent. During the same time period, childhood obesity has seen a frightening increase. According to the Center for Disease Control and Prevention, the percentage of obese children and adolescents (2-19 years old) has tripled since the 1970s (Fryar, et al., 2014). Public health officials are interested in finding ways to increase children's physical activity. While the main effort has been to promote physical education classes, school sports, and recess, there is growing enthusiasm about the role of active transportation (i.e. walking and biking) to school as a means of obtaining regular physical activity (Tudor-Locke, et al., 2001). However, research linking active

transportation to school and weight loss in children is mixed (McDonald, 2007; Rosenberg, et al., 2012).

Existing literature on student travel behavior focuses on one of two questions: (1) which urban form or socioeconomic factors have the most influence on student mode choice, or (2) which policy approaches are most effective at promoting students to walk or bike to school.

The distance between where students live and where schools are located may be the most critical factor for choosing which mode to travel to school. The sharpest decline in active transportation to school occurred simultaneously as the average distance to school increased most noticeably (McDonald, 2007). McDonald argues that the walk travel time to school, which is directly related to distance, is the most “policy-relevant” factor (2008). In her analysis, McDonald finds that travel time with respect to choosing to walk to school has an elasticity of -0.75 (2008). Another study finds the same elasticity to be -0.66, and bike travel time with respect to choosing to bike to school has an elasticity of -2.63 (Ewing, et al., 2004). This latter finding suggests that students are especially sensitive to increases in bike travel time, likely due to the fact that longer bike travel times translate to longer distances compared to walking travel times (Ewing, et al., 2004).

The availability of sidewalks on routes to school has a significant impact on a child’s probability of walking to school. One study found that a 10 percent increase in average sidewalk coverage yields a 4.2 percent increase in the likelihood of walking to school (Ewing, et al., 2004). Surprisingly, the same study found that the built environment had no statistically-significant impact on biking rates (Ewing, et al., 2004). Another study analyzes how new improvements to the built environment (e.g. installing a painted crosswalk) might influence travel behavior. The study finds that students who passed an improvement project on their route to school showed a 15 percent increase in walking or biking compared to four percent among students who did not pass by these improvement projects (Boarnet, et al., 2005).

The important question is how children’s travel behavior differs from adults. Blumenberg, et al. (2012) find that economic factors still dominate travel behavior among all people. In their study of Québec children, Pabayo and Gauvin (2008) find that children from higher-income households are less likely to walk to school than children from lower-income households. Beyond economic factors, gender and nationality also appear to affect children’s travel. Girls and children of immigrants are less likely to walk to school than boys and children of native-born parents, respectively (Pabayo and Gauvin, 2008).



Age is clearly related to children's travel. Pabayo and Gauvin (2008) find that the share of students who walk to school declines with age. However, the relationship between age and walking is not linear. Pabayo and Gauvin (2008) compared walking rates between 9, 13, and 16 year olds and find that the share of walking decreases with age. Another study focuses on children in Kindergarten through 6th grade and finds that the share of students who walk to school actually increases with age (Wilson, et al., 2010). This intuitively makes sense. Parents of very young children are more likely to drive their children to school until the children are old enough to travel on their own, and then once the children are old enough to drive themselves, they will walk less to school. Household structure also plays a role. An additional person in the household increases a child's likelihood of walking or riding the bus to school by 1.8 and 1.5 respectively (Wilson, et al., 2010).

## 2.4 Summary of Findings from the Literature

- Previous research shows that as Catholic schools decrease in popularity, more students are attending non-parochial, or independent, schools. These independent schools tend to have higher tuition costs, and as a result, attract more higher-income and white students than others (Murnane and Reardon, 2018).
- When considering where to send their children to school, Goldring and Hausman (1999) finds that 70 percent of families at least considered sending their children to a school other than their neighborhood school. Higher-income and more educated families are more likely to send their children to private school than other families (Buddin, et al., 1998).
- There is limited research on how children travel, and most existing research is interested in active transportation to school as a means of combating childhood obesity (McDonald, 2007). Studies generally show that the most critical factor in how children travel to school is the distance between where children live and their school (McDonald, 2007).

### 3. Methodology

There are six major parts of the analysis:

1. Description of the demographics of current Geffen Academy students and compare the student body to the student population of nearby public schools.
2. Comparison of the spatial distribution of current students with the spatial distribution of students who were admitted, but then declined to enroll.
3. A travel survey of enrolled students to analyze travel patterns and travel mode choice.
4. Identification of existing transportation access to the school by mode, and compare this access to the spatial distribution of students.
5. Identification of neighborhoods with low densities of enrolled students, and describe transportation options to the school.
6. Research on other independent schools in Los Angeles to gain insight on how other schools approach transportation as it relates to student body diversity.

**Step 1.** I use student data from the Geffen Academy to analyze the demographics of the current student body. Then, I use enrollment data from the California Department of Education to analyze the gender and racial makeup of three nearby public high schools, and compare the demographics of these schools with those of the Geffen Academy. This analysis highlights where the Geffen Academy is currently lacking with regards to student diversity.

**Step 2.** I use geographic information software (GIS) to geocode student addresses to develop a “coverage” map of the school. To protect students’ identities, I aggregate the number of students per zip code, and color code zip codes with enrolled students. I then create radial zones from the Geffen Academy to capture 25 percent, 50 percent, 75 percent, and 100 percent of all enrolled students within that distance. I conduct this same procedure for both currently enrolled students, and students who were admitted, but declined to enroll (“not enrolled”). This part of the analysis shows where the highest and lowest concentrations of both types of students live within Los Angeles County. By comparing the spatial distribution of enrolled and not enrolled students, I highlight any noticeable patterns or differences that may be attributable to transportation.

**Step 3.** I worked with the Geffen Academy to conduct an online survey of currently enrolled families regarding their children’s travel behavior to school. This survey collected information on mode choice, travel time, travel distance, and preferred alternative mode.

**Step 4.** I use the spatial distribution of enrolled and not enrolled students from Step 2, and compare the distribution with existing transportation infrastructure, primarily public transit and highways. I look to see if areas with low enrollment densities are also areas with less access to the Geffen Academy, than areas with higher enrollment densities.

**Step 5.** I again use the spatial distribution of enrolled students to identify low enrollment density areas on which the Geffen Academy can focus its student recruiting efforts. I then compare the spatial distribution of enrolled students to neighborhood-level demographics. I obtain household income and racial demographics from the 2017 American Community Survey, Five-Year Estimates. With these data, I compare where students live to the racial and income distribution of households in Los Angeles County. Once I identify low enrollment neighborhoods, I use Google Maps to estimate travel times from the neighborhood to the school by different modes.

**Step 6.** I collected data on the transportation services that other peer-schools provide. I then conducted semi-structured interviews with admissions staff at two of the peer-schools to learn how the administration thinks about transportation as it relates to student diversity. This final part of the analysis provides insight on the types of services the Geffen Academy can provide to improve their recruitment efforts.

### 3.1 Data

The Geffen Academy provided data on two types of students: currently enrolled and admitted but did not enroll, who I refer to as “not enrolled students.” Although the Geffen Academy plans to have students in grades sixth through twelfth, the school is in its second year of operating, and currently only has students from sixth through tenth grades. Therefore, I do not differentiate students by age for this analysis. There is only complete demographic and socioeconomic information on currently enrolled students. Table 1 below shows the variables available for each type of student and the information that the student group contributes to the research goal. For privacy concerns, the school did not provide household income for students. However, since tuition-assistance is based on household income, I use this information as a proxy for income level.

Data on nearby public school enrollments come from the California Department of Education. I use the QuickQuest tool to search for enrollment numbers for public high schools in Los Angeles County for the 2017-2018 school year. The Geffen Academy uses different racial and ethnic categories than the California Department of Education. Therefore, I combine some categories to make direct comparisons.

I worked with Geffen Academy staff to conduct the travel survey for enrolled students. The school sent the survey by email and administered it via *SurveyMonkey*. The survey included thirteen questions. See Appendix A for more details on the survey and list of questions.

Neighborhood demographic data by census tract are from the 2017 American Community Survey, Five-Year Estimates.

*Table 1. Available Data by Student Type*

Student Type	Available Information from the Geffen Academy	Relevance to Research
Enrolled	<ul style="list-style-type: none"> <li>• Current Grade</li> <li>• Year Entered School</li> <li>• Graduation Year</li> <li>• Gender</li> <li>• Race/Ethnicity</li> <li>• Tuition-Assistance</li> <li>• Parent/Guardian UCLA Affiliation</li> <li>• Home Address</li> <li>• Previous School Attended</li> <li>• Travel Survey</li> </ul>	Describe the existing student body, and show which neighborhoods are over-represented, and which neighborhoods are under-represented
Not Enrolled	<ul style="list-style-type: none"> <li>• Home Address</li> <li>• Previous School Attended</li> </ul>	Highlight potential target neighborhoods to focus on for transportation interventions

### 3.2 Limitations

A critical limitation with these data is a selection bias among students. Families may consider transportation to the Geffen Academy before applying, and families who determine that the transportation costs are too high may never even apply to the school. Therefore, the data exclude those students. Furthermore, among the not enrolled students, the data do not indicate the reason that the student declined

admission. Therefore, the spatial analysis cannot determine if transportation is the main barrier to enrollment at the Geffen Academy.

As I mention previously, data on household income levels are not available for students due to privacy concerns. I use tuition assistance receipt as a proxy for low-income. Unfortunately, this approach means I only have a binary variable for income, and I lose specificity. In addition, tuition assistance is determined not only by income, but other family factors. Therefore, it is possible to have two families with the same household income, but only one receives tuition assistance.

With regard to the travel survey, 215 responses were collected (33%). Respondents were not required to answer every question and, therefore, there are 154 of 215 (72%) incomplete surveys. Furthermore, I am unable to survey students who are not enrolled and cannot capture their travel behavior.

Despite this limitations, the available data allow for an in-depth analysis of spatial patterns among enrolled and not enrolled students, and can highlight potential areas of improvement for Geffen Academy with regards to transportation.

## 4. Findings & Analysis

The following sections detail my analysis and main findings.

### 4.1 Demographics of the Geffen Academy

I begin this analysis by examining the demographics of currently-enrolled students at the Geffen Academy to see how they compare to nearby schools. The Geffen Academy provided data on student sex, race and ethnicity, UCLA affiliation, and receipt of tuition assistance.

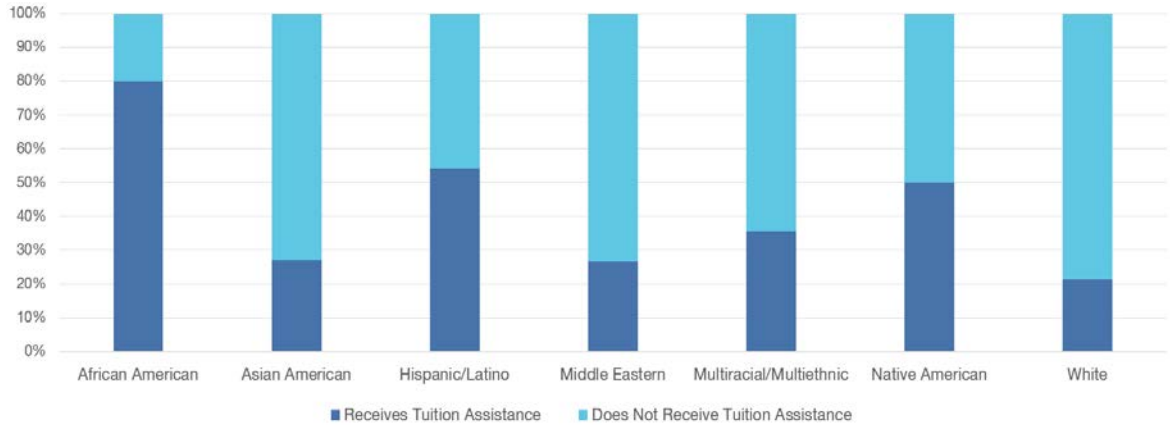
As of the 2018-2019 school year, the Geffen Academy has approximately 400 enrolled students. The student body is majority male at 56 percent. Racially, the school is nearly 50 percent non-Hispanic white. Table 2 below shows the racial/ethnic demographic composition of enrolled students. Students generally come from higher-income households as nearly 70 percent do not receive tuition assistance. These findings are consistent with previous studies that show private schools have high percentages of high-income and white students (Murnane and Reardon, 2018; Reardon and Yun, 2002).

*Table 2. Distribution of Students by Race/Ethnicity*

Race/Ethnicity	Percent of Students
African American	5%
Asian American	13%
Hispanic/Latino	6%
Middle Eastern	4%
Multiracial/Multiethnic	20%
Native American	1%
Non-Hispanic White	49%
N	372

Figure 1 below compares the tuition assistance by race and ethnicity. Nearly 80 percent of African American students and more than 50 percent of Hispanic/Latino students receive some tuition assistance. Conversely, 20 percent of white students receive financial aid.

Figure 1. Tuition Assistance by Race/Ethnicity



A unique feature of the Geffen Academy is its affiliation with UCLA. As I mention previously, one of the reasons David Geffen donated money to build the school is to serve the children of UCLA faculty and staff (Gordon, 2015). According to enrolled student data, only 30 percent of students have parents/guardians who work for UCLA. Among the 30 percent, a slight majority of students come from UCLA faculty. Table 3 shows the composition of UCLA affiliation between faculty and staff.

Table 3. UCLA Affiliation Among Students of UCLA Employees

UCLA Affiliation	Percent of Students
One Parent/Guardian – Faculty	53%
One Parent/Guardian – Staff	42%
Two Parents/Guardians – Both Faculty	3%
Two Parents/Guardians – Faculty & Staff	2%
N	111

Students from UCLA faculty and staff are an important group of students. The Geffen Academy assumes that these students are dropped off by their parents/guardians as they travel to the UCLA campus for work. Transportation may be less of a barrier for these students as their parent/guardian already is making a trip to Westwood. Furthermore, the Geffen Academy believes the diversity among UCLA faculty and staff can help with diversity among Geffen Academy students. Therefore, it is important to understand the demographic makeup of these students. Table 4 below shows the UCLA Affiliation by race/ethnicity. Among Hispanic/Latino students, 50 percent have at least one parent/guardian who works for UCLA, and more than a quarter have a parent/guardian who is a UCLA staff member. This finding matches with expectations. However, among African American students, 80 percent do not have a parent/guardian at UCLA.

Table 4. UCLA Affiliation by Race/Ethnicity

Race/ Ethnicity	UCLA Affiliation					N
	No Affiliation	One Parent/ Guardian – Faculty	One Parent/ Guardian – Staff	Two Parents/ Guardians – Both Faculty	Two Parents/ Guardians – Faculty & Staff	
African American	80%	10%	10%	0%	0%	20
Asian American	51%	33%	14%	2%	0%	49
Hispanic/ Latino	50%	21%	29%	0%	0%	24
Middle Eastern	87%	7%	7%	0%	0%	15
Multiracial/ Multiethnic	66%	17%	16%	1%	0%	76
Native American	100%	0%	0%	0%	0%	4
White	77%	12%	10%	1%	1%	183

Figure 2. Tuition Assistance by UCLA Affiliation

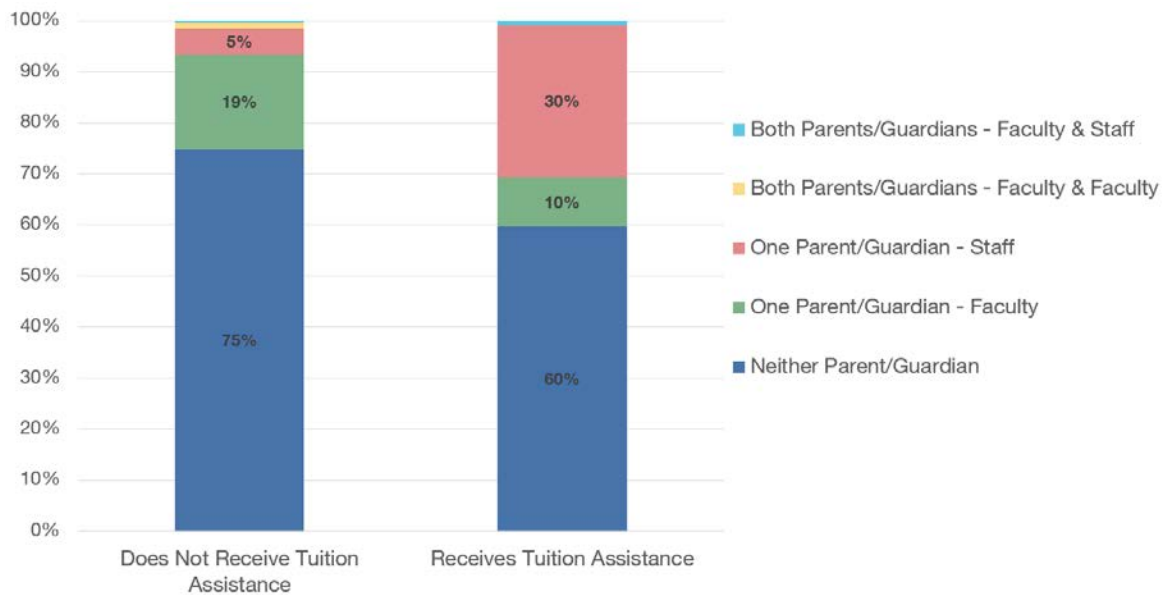




Figure 2 above shows the breakdown of tuition assistance by UCLA affiliation. Among students who do not receive tuition assistance, 75 percent are not affiliated with the university. Among students who do receive tuition assistance, 40 percent come from families who work for UCLA. However, there are differences by type of UCLA employment. Twenty percent of higher-income students come from faculty, whereas 30 percent of low-income students are from UCLA staff members. These data mirror the findings in Figure 1 and Table 4. There are higher rates of tuition assistance among African American and Hispanic/Latino students as well as students of UCLA staff. Recruiting more students from UCLA staff members appears to be a crucial component of promoting racial and economic diversity at the Geffen Academy.

## 4.2 Demographic Comparison with Nearby Schools

I compare the demographic composition of the Geffen Academy with other schools to see if Geffen is similar or different. Since the Geffen Academy is a private school, students come from various parts of the Los Angeles region. This contrasts with traditional neighborhood schools, where mostly students who live within the attendance boundary attend. Unfortunately, specific demographic data on private school enrollments are difficult to access. Therefore, I analyze the demographics of three public schools in close proximity to the Geffen Academy.

To identify the public schools for this analysis, I used the locations of enrolled students and aggregated them by zip code. I then selected the top five zip codes by enrollment and overlaid the zip codes with the school attendance boundaries from the Los Angeles Unified School District (“LAUSD”). From this, I identified three schools: University High School Charter, Palisades Charter High School, and Alexander Hamilton High School. The first two schools are charter schools, and while they accept students from elsewhere, according to their charters, both schools prioritize students who live within their boundaries (Palisades Charter High School, n.d.; University High School Charter, n.d.). Alexander Hamilton High School is a traditional neighborhood school that enrolls students who live within its attendance boundary, and the school has a magnet and advanced study school for children who live outside of the attendance boundary (Alexander Hamilton High School, n.d.). These three schools are interesting comparisons to Geffen because of their proximity and because all three schools have students who live nearby and far away. Furthermore, because these three schools are near Geffen, it is possible that some families may have considered all of these schools when deciding where to send their children. Demographic data from the three public schools come from the California Department of Education for the 2017-2018 school year. Table 5 below shows the share of students by sex for all four schools. Among the schools, the Geffen Academy has the highest proportion of male students. I am not sure why the male population

is high at Geffen Academy. However, it is important to note that total enrollment at Geffen is substantially smaller than these other schools, and the school is not at full capacity. As the school fills its classes, it is possible that by simply having more students, the Geffen Academy student population might better reflect the general population and have a more even sex ratio.

*Table 5. Gender of Enrolled Students*

School	Total Enrollment	Percent Male	Percent Female
The Geffen Academy	372	56%	44%
Alexander Hamilton High School	2,637	46%	54%
Palisades Charter High School	3,056	50%	50%
University High School Charter	1,564	53%	47%

*Figure 3. Race and Ethnicity of Enrolled Students*

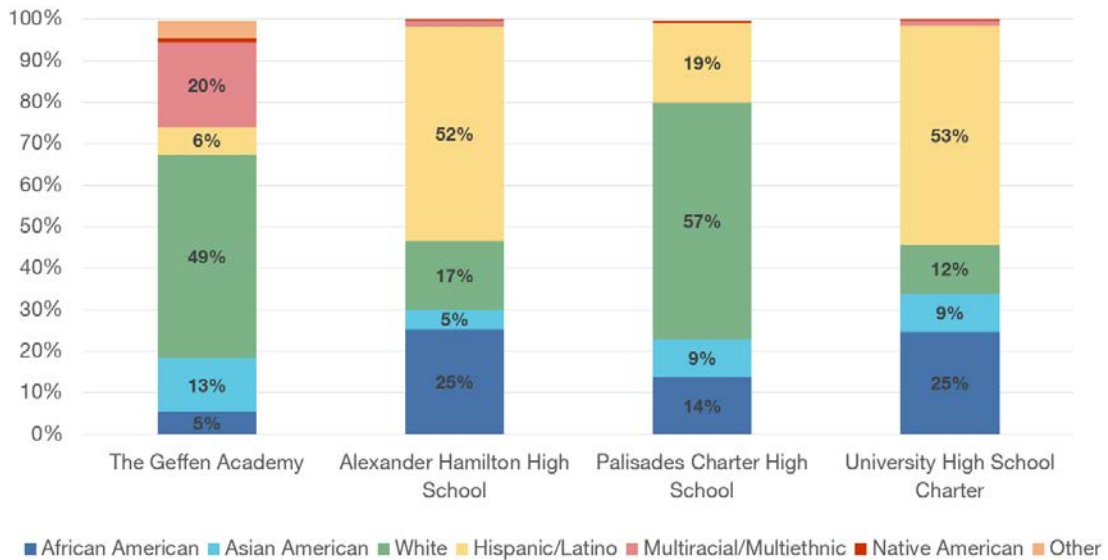


Figure 3 above shows the distribution of race and ethnicity of enrolled students for all four schools. Among the four comparison schools, the Geffen Academy has the lowest percent of Hispanic/Latino and African American students. However, Geffen has a higher proportion of multiracial/multiethnic and Asian American students than the other schools. Furthermore, Geffen is the only school that does not have a single racial/ethnic group that is a clear majority of students. This finding contrasts with

Palisades Charter High School, which has 57 percent non-Hispanic white students, and Alexander Hamilton High School and University High School Charter, where 50 percent of students are Hispanic/Latino.

Finally, I compare the transportation services at each of these schools. Since these schools are near each other, all four face similar transportation barriers for students who do not live on the Westside of Los Angeles. Table 6 below shows the types of transportation services for all four schools. Information comes from each school’s respective website. All three of the nearby schools provide some type of transportation. Alexander Hamilton High School and University High School both have magnet schools within them. The Los Angeles Unified School District offers students transportation to magnet schools if they live outside a two-mile radius for elementary school, and a five-mile radius for middle and high schools.<sup>1</sup> It appears that only Palisades Charter High School offers direct transportation to any student who attends the school. I was unable to determine why Palisades Charter High School provides this service and how the school funds it. Interestingly, Palisades Charter High School has the highest percentage of white students, and the second lowest percentages of Hispanic/Latino and African American students. This finding suggests that there are likely other barriers besides transportation for non-white students who want to attend Palisades Charter High School. However, there are no data on which students use the transportation services at Palisades Charter High School provides, and therefore, it is possible that the school may have lower percentages of Hispanic/Latino and/or African American students without the bus and carpool services.

*Table 6. Transportation Services of Nearby Schools*

School	Transportation Services Provided
The Geffen Academy	None
Alexander Hamilton High School	School Bus <ul style="list-style-type: none"> <li>Los Angeles Unified School District provides transportation for students enrolled in the magnet school and live 5 or more miles away</li> </ul>

<sup>1</sup> Los Angeles Unified School District. *Transportation Programs*. <https://achieve.lausd.net/Page/2727>

Palisades Charter High School	<p>Carpool<sup>2</sup></p> <ul style="list-style-type: none"> <li>Organized by the school’s Parent Teacher Student Association (“PTSA”)</li> <li>Families can fill out an interest form on the school’s website and the PTSA will match families together</li> </ul> <p>School Bus<sup>3</sup></p> <ul style="list-style-type: none"> <li>Ten routes in the morning and seven routes in the afternoon</li> <li>Two sets of later afternoon routes with three routes each</li> <li>\$2,150 for 2018-2019 school year</li> <li>Scholarship/Financial Aid is available</li> </ul>
University High School Charter	<p>School Bus</p> <ul style="list-style-type: none"> <li>Los Angeles Unified School District provides transportation for students enrolled in the magnet school and live 5 or more miles away</li> </ul>

### 4.3 Spatial Distribution of Students

To assess how transportation access might influence access to the Geffen Academy, I examine the spatial distribution of enrolled students and compare this distribution to not enrolled students. The hope is to identify any significant differences in the spatial distributions. While this analysis alone cannot determine if transportation is a significant barrier, it can potentially highlight any neighborhoods where there appears to be concentrations of students applying, but not enrolling.

Figure 4 and Figure 5 show the spatial distribution of enrolled students and not enrolled students, respectively. The concentric circles represent an increasing a proportion of students who live within a certain distance from the Geffen Academy, in increments of 25 percent (e.g. the region between each circle is 25 percent). For both types of students, more than 50 percent live within five miles of the school. However, a larger share of enrolled students live closer to Geffen than the not enrolled students.

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<sup>2</sup> Details at: [https://www.palihigh.org/apps/pages/index.jsp?uREC\\_ID=661185&type=d&pREC\\_ID=1181189](https://www.palihigh.org/apps/pages/index.jsp?uREC_ID=661185&type=d&pREC_ID=1181189)

<sup>3</sup> Details at: [https://www.palihigh.org/apps/pages/index.jsp?uREC\\_ID=1172401&type=d&pREC\\_ID=1617162](https://www.palihigh.org/apps/pages/index.jsp?uREC_ID=1172401&type=d&pREC_ID=1617162)

Figure 4. Spatial Distribution of Enrolled Students

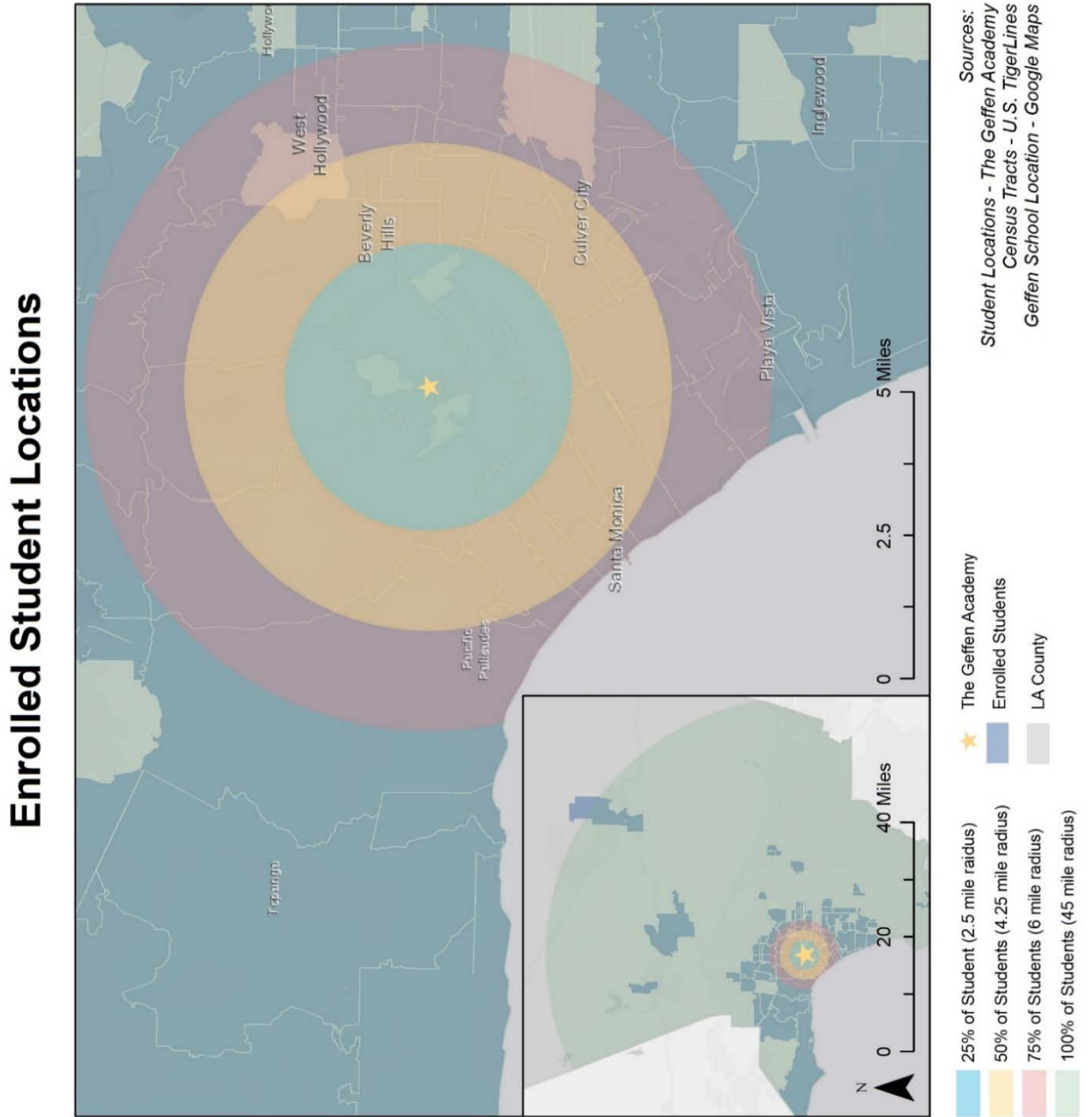
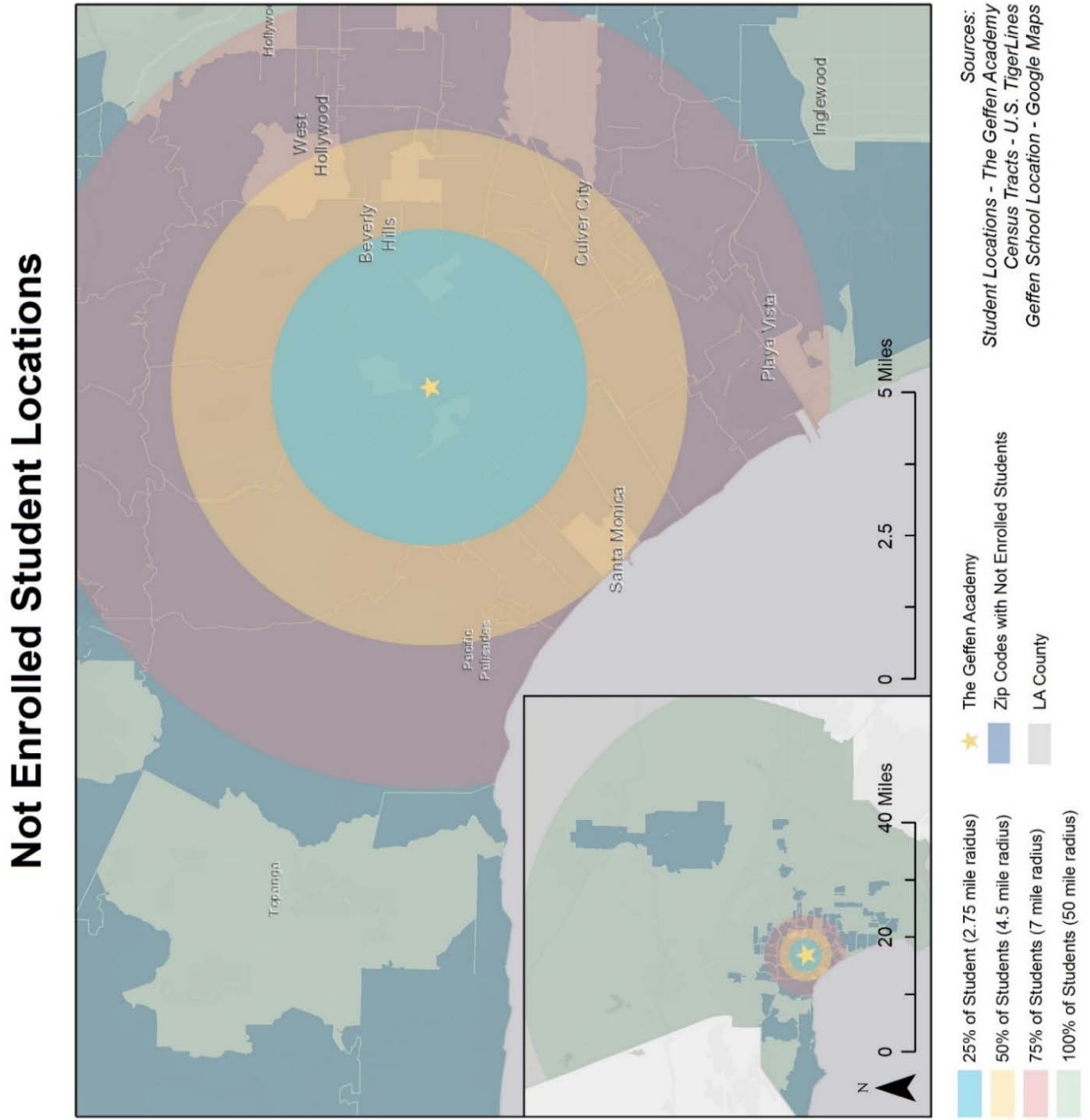


Figure 5. Spatial Distribution of Not Enrolled Students



When I observe the county wide maps in Figure 4 and Figure 5, I notice subtle differences in the zip codes of enrolled and not enrolled students. For example, with enrolled students, the zip codes with students appear to be more clustered and have few “gaps” between them. This is in contrast with not enrolled students, where more of the zip codes with students are isolated. Furthermore, with not enrolled students, the radii of each circle representing 25 percent of the students are slightly larger than the radii for enrolled students. Lastly, there appear to be more not enrolled students in central and south LA than enrolled students. These maps demonstrate that while the differences between the distributions are small, there is evidence that not enrolled students, on average, live further away from the Geffen Academy than enrolled students. Although these data do not show why these students did not enroll, the fact there are many not enrolled students who live far away suggests that transportation may be a barrier, or the students decided to attend a closer school to reduce their travel costs.

#### 4.4 Travel Survey of Enrolled Students

While the spatial analysis is helpful in understanding where students live, there is no information on how students travel to Geffen Academy. Identifying the travel patterns of enrolled students can shed light on some of the transportation challenges families face. To answer questions of how students travel, I worked with staff at the Geffen Academy to conduct a travel survey of enrolled students. The staff sent the survey via email to the parents/guardians of enrolled students. Staff asked families with more than one child enrolled at Geffen Academy to respond based on their oldest child. The survey received 215 responses (33% response rate). More detailed information on the survey questions can be found in Appendix A.

Responses are relatively even among all grade levels, with slightly more responses of children in 9<sup>th</sup> grade than the others, which may be a result from asking families to respond based on their oldest child.

Table 7 below shows the mode choice of enrolled students. As I expected, driving alone is the most common mode, followed by carpool, and then public transit. The survey gave respondents an opportunity to specify their response if they selected “Other.” Most of the “Other” response were children in the car with siblings or using different modes to travel to school and from school.



*Table 7. Mode Choice of Enrolled Students*

Mode	Share of Students
Drive Alone	57%
Carpool <sup>4</sup>	26%
Public Bus	11%
Other	4%
HopSkipDrive <sup>5</sup>	2%
Walk	< 1%
N	215

As discussed in Section 4.1, the Geffen Academy has roughly 30 percent of enrolled students from families of UCLA employees. Among respondents of the travel survey, 34 percent reported that a household member works at UCLA, and of those 34 percent, 85 percent travel to UCLA with their Geffen Academy student. As mentioned earlier, low-income students and students of color tend to come from households with a UCLA staff member more so than other households. Thus, I am particularly interested in how students from UCLA-affiliated households travel to the Geffen Academy. Table 8 below shows the mode choice for this group of students. Interestingly, more students in this group are driven by their family than the general student body, and none use public transit. I suspect that part of the reason may be that work schedules and the Geffen Academy schedule do not align, and, therefore, parents/guardians drive to give them flexibility in dropping and picking up their children while traveling to and from work.

*Table 8. Mode Choice for Students from UCLA Households*

Mode	Share of Students
Drive Alone	67%
Carpool	24%
Other	8%
HopSkipDrive	2%
N	63

The travel survey asked parents/guardians to state the distance between their home and the Geffen Academy. I compared the stated distance with travel mode to see the relationship between mode choice and travel distance.

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<sup>4</sup> The survey differentiates between carpooling with Geffen Academy students and non-Geffen Academy students. For the purposes of this analysis, I combine both types of carpooling.

<sup>5</sup> HopSkipDrive is a transportation network company, like Uber or Lyft, that specializes in transporting children to school.



Figure 6. Mode Choice by Distance

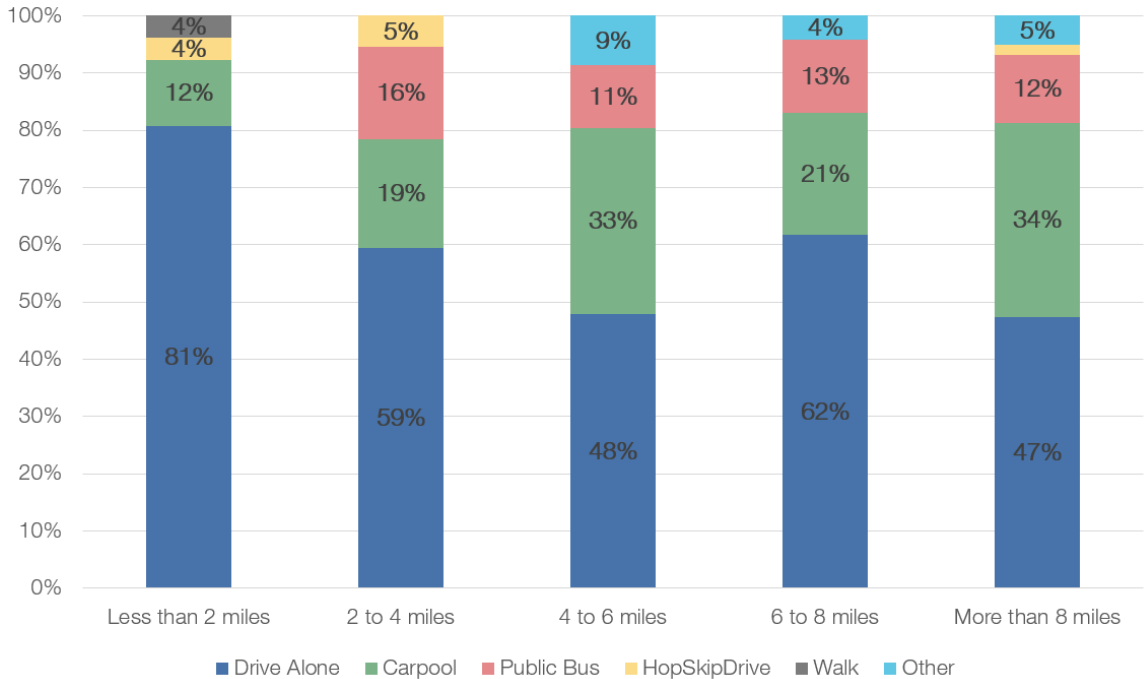


Figure 6 above shows the mode choice for students based on distance. As distance increases, the share of students who drive alone decreases, and the share of carpooling increases. This makes sense as parents/guardians who live further away from the school may not have the time to drive their children to Geffen Academy unless they work near the school. Therefore, these students likely carpool more than students who live nearby in order to split driving costs and responsibilities. Interestingly, transit has the highest share among students who live two to four miles away. This is likely a result of long travel times for transit. As the distance increases, there are generally more transfers needed to make a transit trip, and transfers increase travel time relative to driving.

Finally, the survey asked parents/guardians to state which mode they would most like their student to use that the student does not currently use. This question allows me to identify unmet demand for particular modes. The survey included eight mode choices from which to choose; respondents were asked to rank them from their top choice to bottom choice. Since this question was not required, and respondents did not have to rank all options, the response rate varies for each ranking. Therefore, I focus on the top three ranked modes. Table 9 shows for each mode, how many respondents ranked the mode as their first, second, or third choice. Respondents ranked carpooling as their top mode for first, second, and third choices. This finding

indicates that Geffen Academy should focus on promoting carpooling, which will help families save money.

*Table 9. Top Three Modes Parents/Guardians Want Student to Use*

Mode	Percent of Respondents Ranked as First Choice	Percent of Respondents Ranked as Second Choice	Percent of Respondents Ranked as Third Choice
Drive Alone	27%	8%	11%
Carpool	45%	53%	54%
Public Bus	16%	15%	11%
HopSkipDrive	4%	15%	15%
Walk	4%	3%	0%
Bike	3%	5%	6%
Skateboard	2%	1%	2%
N	165	118	87

The analysis of this travel survey shows that a majority of students are driven alone by their parents/guardians. A large majority of households with a UCLA employee travel with their student, but most of these students still travel by car. Driving alone is highest among families who live the closest to Geffen Academy, and as distance increases, families are generally more likely to carpool. Finally, although carpooling only makes up 26 percent of trips to school, many families are more interested in carpooling compared to other alternative modes.

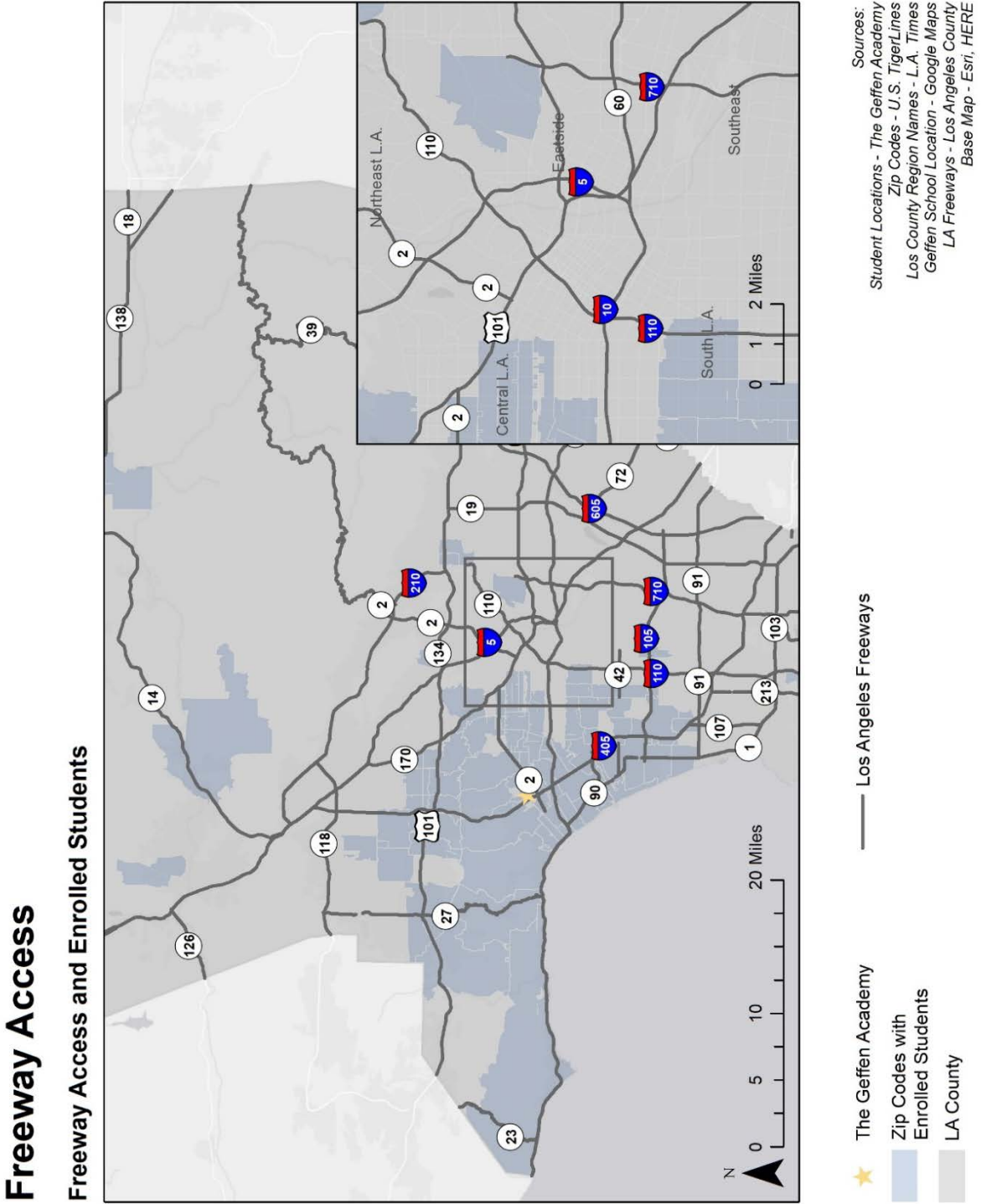
#### 4.5 Transportation Access to the Geffen Academy

The next step of this analysis is to investigate the transportation access to the Geffen Academy, and see how the spatial distribution compares with major transportation networks, in particular freeways and public transit.

First, I obtained the location of freeways in Los Angeles County from the Los Angeles County GIS portal. I mapped the freeways in the county and overlaid them on top of the zip codes of enrolled and not enrolled students. For public transit, I gathered data on bus routes from major transit providers in the county such as, the Los Angeles County Metropolitan Transportation Authority (“Metro”), the Los Angeles Department of Transportation (“LADOT”), and the Santa Monica Big Blue Bus (“BBB”). I only include bus routes that are within a half-mile radius of the Geffen Academy. Therefore, I only count direct bus lines to the school.

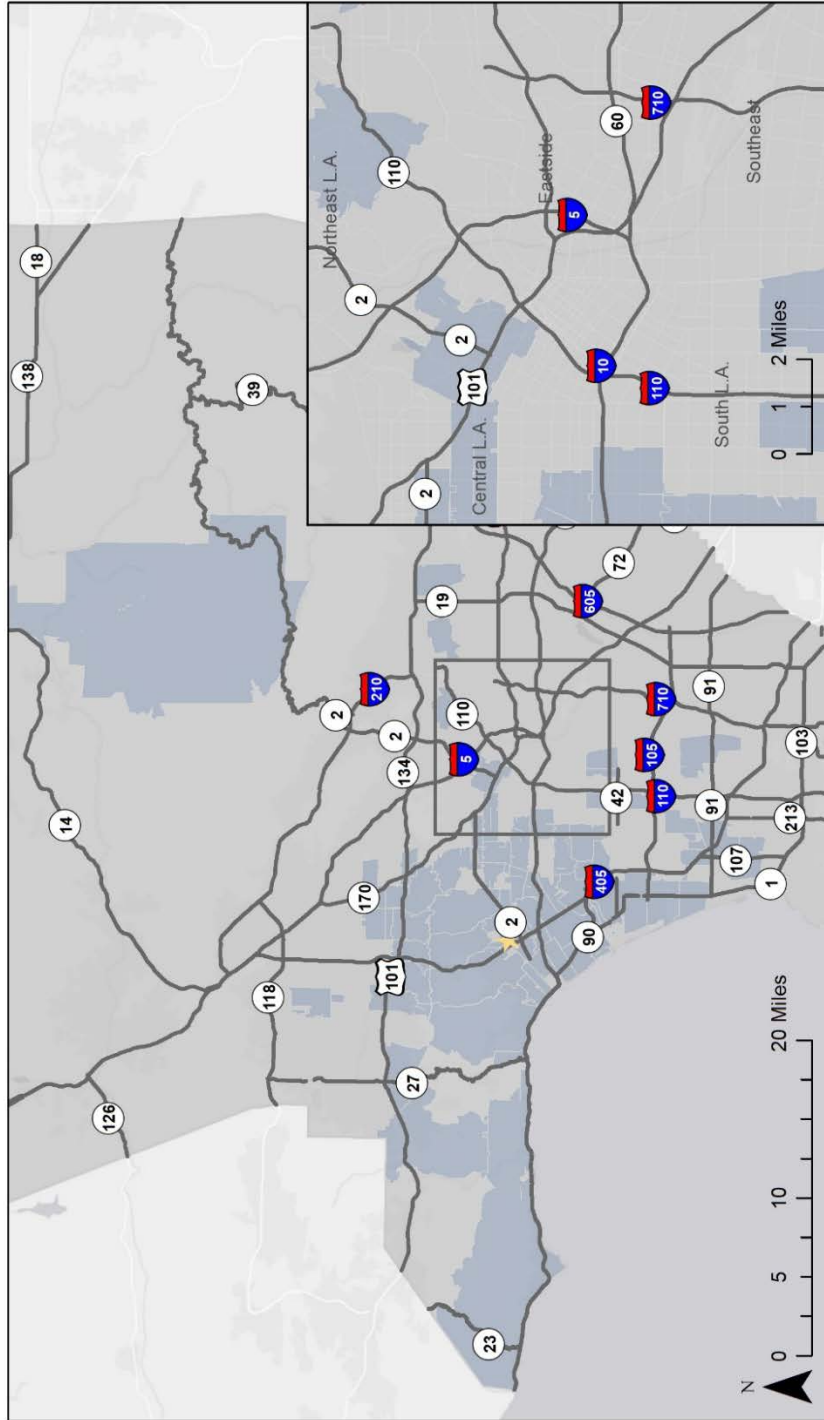
Figure 7 and Figure 8 show freeway access to the Geffen Academy for enrolled and not enrolled students, respectively. Freeways dominate the landscape in Los Angeles, and this is evident by the freeway coverage in both maps. There is little difference between enrolled and not enrolled students as both groups have access to the freeway network. Unfortunately, these maps do not take into account measures of congestion on the freeways. The presence of a freeway nearby is not useful to families if the travel time from their home to Geffen is exorbitant. Figure 7 and Figure 8 also provide a snapshot of a portion of central and south Los Angeles. This area has low densities of enrolled and not enrolled students, and could potentially be an area the Geffen Academy can focus their recruitment efforts. According to the maps, central and south Los Angeles have access to the Geffen Academy via Interstate 110 and Interstate 10.

Figure 7. Freeway Access for Enrolled Students



# Freeway Access

## Freeway Access and Not Enrolled Students



- ★ The Geffen Academy
- Zip Codes with Not Enrolled Students
- LA County
- Los Angeles Freeways

- Sources:
- Student Locations - The Geffen Academy
  - Zip Codes - U.S. TigerLines
  - Los County Region Names - L.A. Times
  - Geffen School Location - Google Maps
  - LA Freeways - Los Angeles County
  - Base Map - Esri, HERE

Figure 8. Freeway Access for Not Enrolled Students

Figure 9. Public Transit Access for Enrolled Students

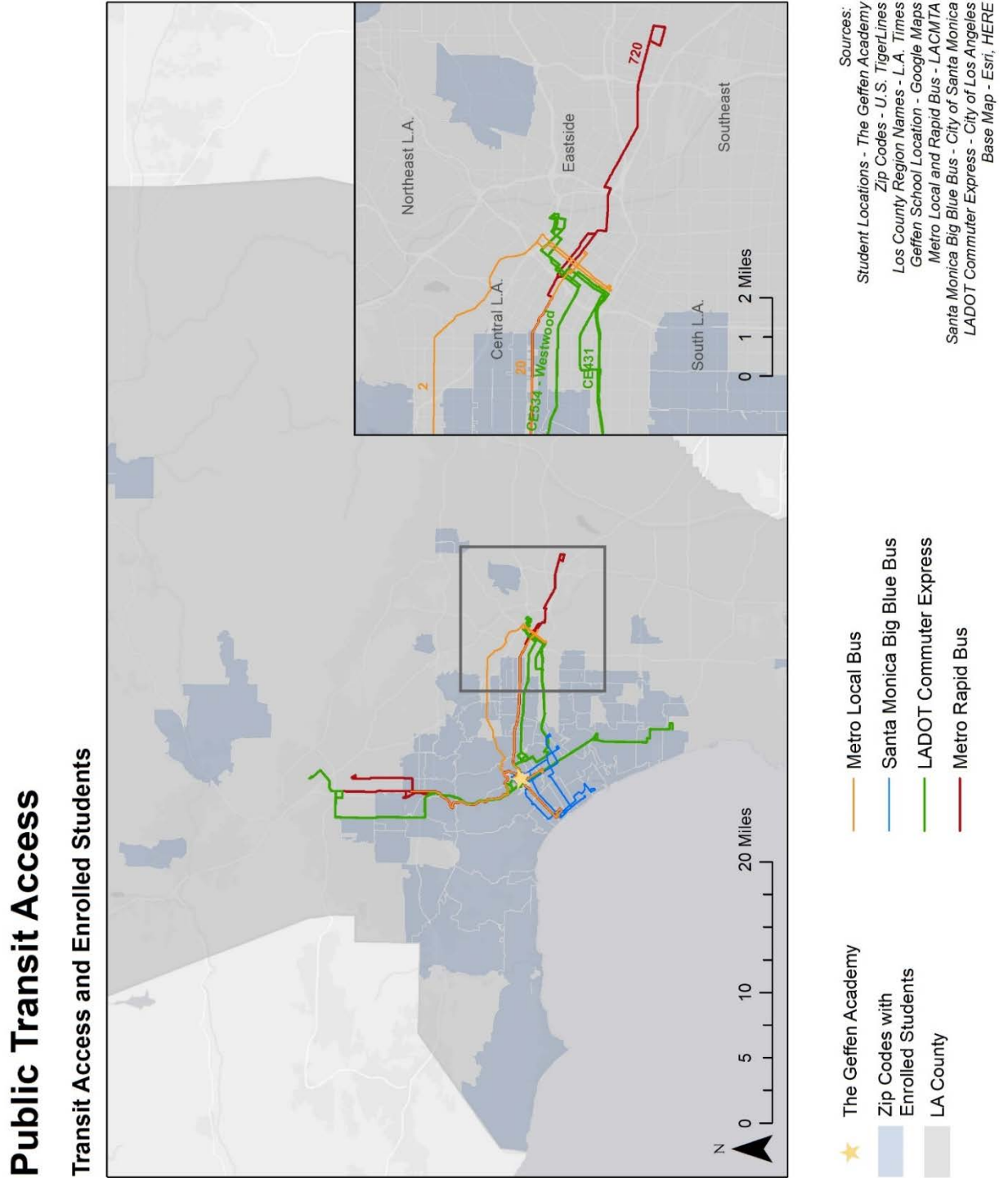
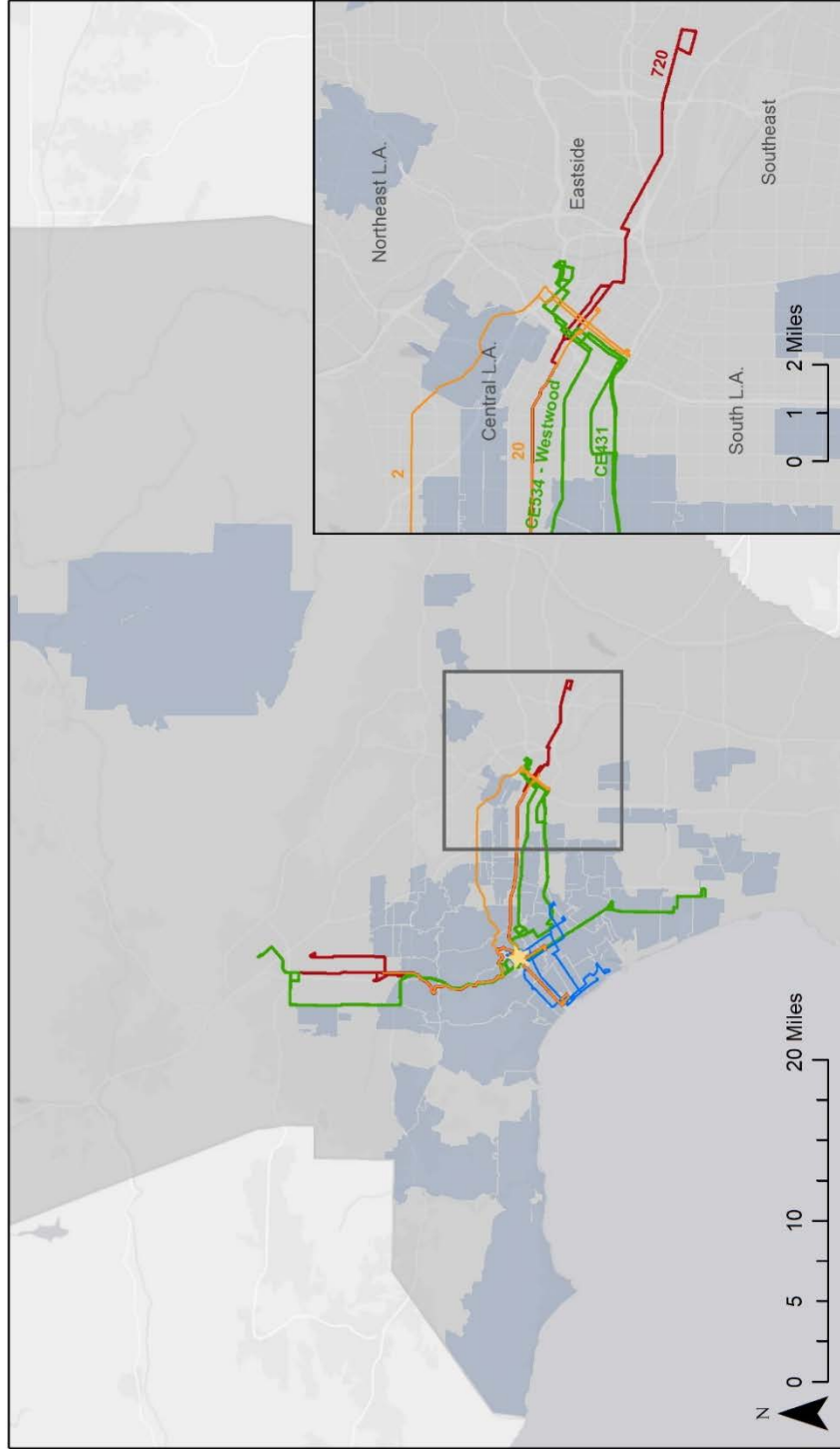




Figure 10. Public Transit Access for Not Enrolled Students

# Public Transit Access

## Transit Access and Not Enrolled Students



**Sources:**  
 Student Locations - The Geffen Academy  
 Zip Codes - U.S. TigerLines  
 Los County Region Names - L.A. Times  
 Geffen School Location - Google Maps  
 Metro Local and Rapid Bus - LACMTA  
 Santa Monica Big Blue Bus - City of Santa Monica  
 LADOT Commuter Express - City of Los Angeles  
 Base Map - Esri, HERE

Metro Local Bus  
 Santa Monica Big Blue Bus  
 LADOT Commuter Express  
 Metro Rapid Bus

The Geffen Academy  
 Zip Codes with Not Enrolled Students  
 LA County

I now turn my focus to public transit. Figure 9 and Figure 10 show public bus routes that intersect a half-mile radius of the Geffen Academy. Most of the routes are local buses, which primarily service the Westside of Los Angeles. This finding suggests that public transit best serves students who already live near the school. Hopefully transit access will improve with the completion of the Metro Purple Line Extension, which will have a station at Wilshire Blvd. and Westwood Blvd., and has an expected travel time of 25 minutes from Westwood to downtown Los Angeles.<sup>6</sup> However, there are several Metro Rapid and LADOT Commuter Express lines that extend well beyond where enrolled and not enrolled students live. For example, I highlight the same area of central and south Los Angeles as I did for the freeway analysis. This area encompasses most of downtown Los Angeles, and many bus lines converge here. The Metro Rapid 720 extends towards the eastside and travels all the way toward the Geffen Academy.

The freeway access maps do not indicate that areas with low or no enrollment at Geffen are without freeways. The highway and interstate network in the region is extensive, and perhaps the only limiting factors to accessing the Geffen Academy are a family's access to a vehicle and travel time. Conversely, for public transit access, existing bus routes primarily serve areas where enrolled students live. Limiting factors for transit access are the lack of direct bus routes in different areas as well as travel time. The Geffen Academy is unable to address travel time, but can help families access vehicles through carpooling and subsidies, and can increase transit access by providing its own bus service.

## 4.6 Identifying Low-Enrollment Neighborhoods and Transportation Options

The map in Figure 4 shows the concentrations of enrolled students. I compared the distribution of students to neighborhood racial and economic factors, to see if the distribution of enrolled students is higher in predominately white and higher-income neighborhoods. I believe that the Geffen Academy has high proportions of non-Hispanic white students and higher-income students in part due to the neighborhood the school resides in. In addition, this analysis allows me to identify where low-enrollment neighborhoods are that have high proportions of non-white and low-income students that are important areas for the Geffen Academy to focus recruitment efforts on.

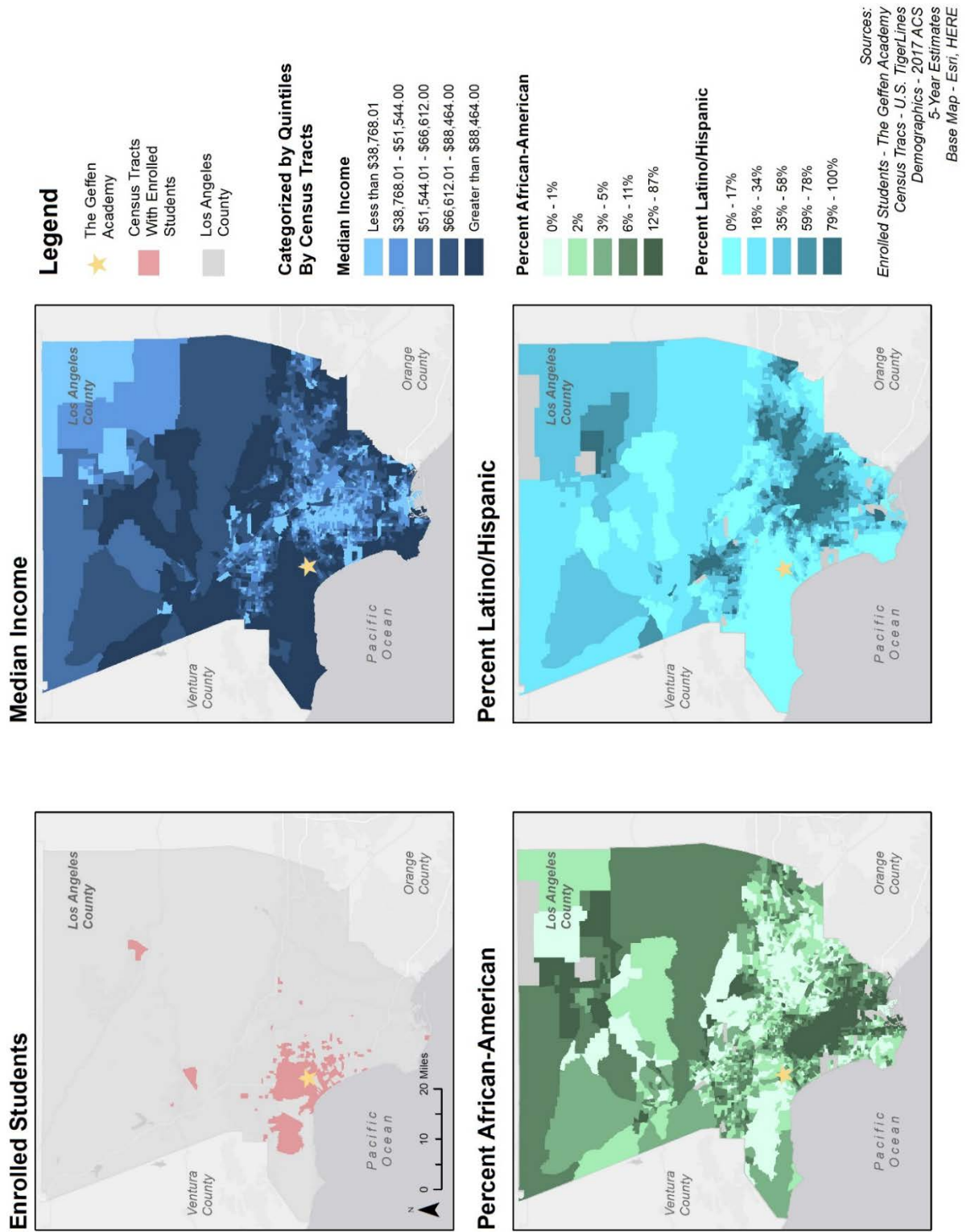
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<sup>6</sup> Los Angeles County Metropolitan Transportation Authority. *Purple Line Extension*. <https://www.metro.net/projects/westside/>



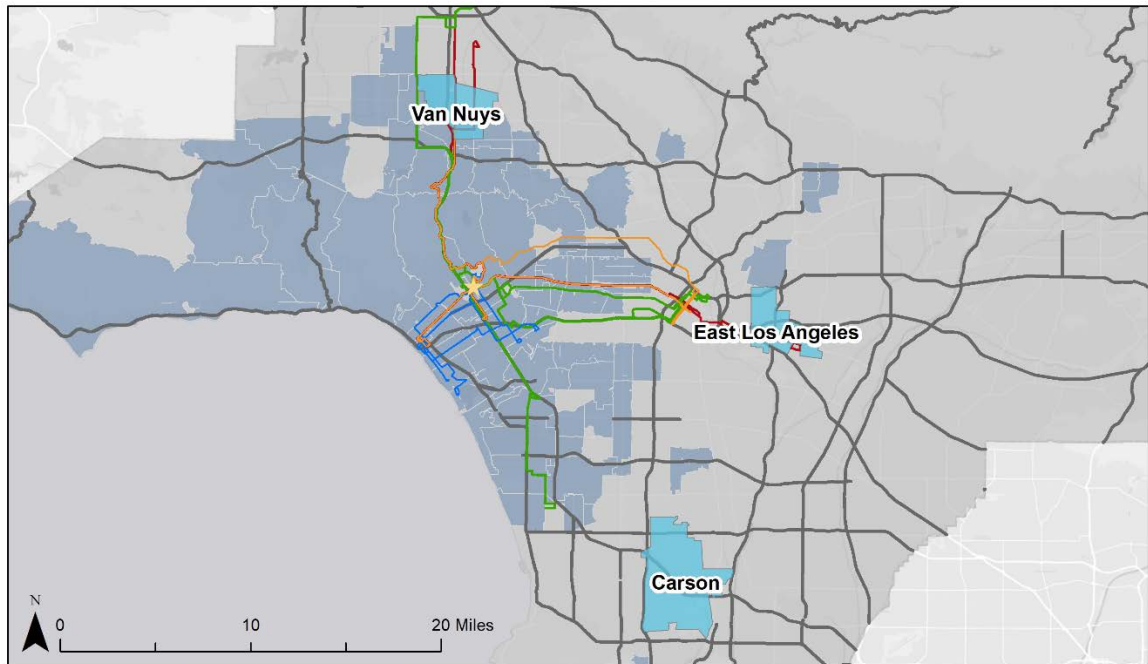
Figure 11 compares the spatial distribution of students and select demographic characteristics. As I expected from the demographics of the student body (where 70 percent of student do not receive tuition assistance), most enrolled students live in census tracts with median household income in the top income quintile. Enrolled students also tend to reside in census tracts with low percentages of African Americans and Hispanics/Latinos. This finding also matches the racial demographics of the student body. Higher percentages of low-income, African American, and Hispanic/Latino households are in the central, southern, and eastern parts of the county, as well portions of the San Fernando Valley.

Figure 11. Distribution of Enrolled Students and Select Demographic Characteristics



My next step is to analyze the transportation options from different neighborhoods to the Geffen Academy, and compare different travel modes by travel time. I selected one neighborhood from the San Fernando Valley, South LA, and East LA. Figure 12 identifies the selected neighborhoods: Van Nuys, East Los Angeles, and Carson. These neighborhoods represent areas with low densities of enrollment at the Geffen Academy, and each have unique transportation advantages and barriers.

Figure 12. Selected Neighborhoods for Travel Analysis



I chose a central location in each neighborhood, and used Google Maps to estimate the travel time by car and public transit to the Geffen Academy. The school day at the Geffen Academy is from 9 AM to 4 PM. In Google Maps, I used Monday, June 3, 2019 as my test date. I set 7 AM as the departure time from home, and 4 PM as the departure time from the Geffen Academy to reflect a standard school day. For the travel routes, I selected the shortest travel time, assuming this is the decision most parents/guardians would make. The results are included in Table 10 below.

The table demonstrates that there is a wide range of travel times not only between modes, but even for the same mode. Both East Los Angeles and Van Nuys are accessible to Geffen by a direct bus route, although the travel times on the bus are around an hour. This chart provides evidence that travel by car is often faster, but there appears to be more variation in the expected times. This variation is likely due to the fact that Google Maps will re-route a car to use different streets if congestion is bad. Conversely, the transit uses a fixed-route, and Google Maps likely bases the travel time on the transit agency’s published schedule.

*Table 10. Travel Time Analysis for Select Neighborhoods*

Neighborhood	Travel Time (Route)			
	To School		From School	
	By Car	By Public Transit	By Car	By Public Transit
East Los Angeles	<b>50 to 100 min.</b> (I-10 W)	<b>98 min.</b> (Metro 720)	<b>50 to 110 min.</b> (I-10 E)	<b>113 min.</b> (Metro 720)
Van Nuys	<b>30 to 60 min.</b> (Beverly Glen Blvd)	<b>73 min.</b> (Metro 164 to Metro 788)	<b>30 to 65 min</b> (I-405 N)	<b>71 min.</b> (Metro 788)
Carson	<b>50 to 110 min.</b> (I-405 N)	<b>101 min.</b> (Torrance Transit 3 to Metro 550 to Metro Expo Line to Metro 788)	<b>50 to 100 min.</b> (I-405 S)	<b>96 min.</b> (Santa Monica BBB R12 to Metro Expo Line to Metro Silver Line)

This analysis suggests that students generally will have shorter commutes by car than by public transit. In fact, travel time by transit ranges from 0.9 to 2.4 times longer than the same trip by car. While this finding is not surprising, it does speak volumes to the differences in access between cars and public transit. Even in neighborhoods with direct transit lines, such as East Los Angeles and Van Nuys, students would experience longer transit commutes compared to travel by automobile. As mentioned in Section 4.5, there is transit access to Geffen Academy that mostly serves students who already live near the school. As this analysis shows, students who live further away from Geffen can take transit, but their travel time will be significantly longer than driving. These longer travel times can take away from students’ time to sleep, eat, do homework, and other school-related activities. In fact, one study found that for each additional minute in commute time to school, students lose 1.3 minutes of sleep on

average (Voulgaris, Smart, and Taylor, 2017). Since the Geffen Academy has no jurisdiction over public transit service, students may benefit more from School efforts to make car travel more accessible to a greater number of students.

#### 4.7 Examples from Peer Schools

For the final part of my analysis, I collected data on other independent schools in the Los Angeles region, and compare the types of transportation services they offer. With the assistance of non-profit organizations, such as the Los Angeles Independent Schools, and staff from the Geffen Academy, I developed a list of 18 independent schools that primarily serve 7th through 12th grade. Table 11 below lists the 18 different schools, their tuition for 2018-2019, any religious affiliation, if they provide any transportation service, and the cost of that transportation service to families. I obtained all the information from each school’s respective website.

Almost three fourths of the schools offer some type of transportation service, specifically bus service. The cost of the bus service varies with one school having no additional cost, to other schools charging more than \$3,000. As I note above, I obtained all of the information from the schools’ websites; it was interesting to note where the transportation information was located on the school website. Of the 13 schools that stated they provide bus service, four schools listed their bus information specifically under the tuition and financial aid section. This location suggests that these schools think about transportation as a cost families consider when they evaluate schools.

*Table 11. Transportation Services for Peer Institutions*

School	Tuition (2018-2019)	Religious Affiliation	Transportation Services	Transportation Costs
The Archer School for Girls	\$40,800	None	Bus and Carpooling <sup>7</sup>	\$4,100 (bundled with other facility fees)
Berkeley Hall School	\$35,470 (Grades 7-8)	Christian Science	Bus	\$3,300 round trip

<sup>7</sup> In order to receive approval from the City of Los Angeles, the school needs to comply with a Transportation Management Plan that limits the number of trips to the campus. Seventy-six percent of students are required to travel by bus, and all others must use transit, active transportation, or carpooling. See more details at <https://www.archer.org/about/campus-master-plan/21st-century-campus/transportation>

Brawerman Elementary School of Wilshire Boulevard Temple	\$25,050	Jewish	Not Stated	N/A
Brentwood School	\$44,085	None	Bus and Carpooling <sup>8</sup>	No additional cost
Crossroads School for Arts & Sciences	\$41,063	None	Bus and Parking Priority for Carpooling	\$1,000-\$1,500
de Toledo	\$39,000 <sup>9</sup>	Jewish	Bus	Not Stated
Harvard-Westlake	\$38,400	None	Bus	~ \$3,000 <sup>10</sup>
Loyola	\$20,550	Catholic	Bus	\$1,900
Marlborough	\$41,150	None	Bus	\$3,000 round trip \$1,500 one-way
Marymount	\$36,385	Catholic	Bus	Included in Tuition
Milken	\$42,900	Jewish	Not Stated	N/A
Mirman School	\$34,872	None	Bus	\$3,300
New Roads School	\$40,655	None	Not Stated	N/A
Shalhevet	\$38,380	Jewish	Not Stated	N/A
Vistamar	\$37,400	None	Bus	\$2,500 round trip \$1,500 one-way
Wildwood School	\$39,950	None	Bus <sup>11</sup>	\$2,750
Windward Schools	\$40,718	None	Bus	Not Stated
The Willows Community School	\$33,870	None	Not Stated	N/A

Similar to the comparison with the nearby high schools, it is important to note that the Geffen Academy has a smaller enrollment than most of these schools. For this research, I am interested in how these schools use transportation as a means for promoting diversity among their student body. The data in Table 11 do not address

<sup>8</sup> School is required to bus at least 40% of students to satisfy requirements of the school's conditional use permit. See <https://www.bwscampus.com/transportation/program-2019-2020>

<sup>9</sup> Cost for 2019-2020 School Year

<sup>10</sup> Obtained from personal interview (J. Jones, personal interview, February 12, 2019).

<sup>11</sup> The school is required to mitigate travel demand to satisfy requirements of the school's conditional use permit. See <https://www.wildwood.org/page.cfm?p=1739>



my main research focus. Therefore, I conducted semi-structured interviews with admissions staff at several of the schools listed above to understand how the school thinks about transportation. I interviewed staff from two schools, the Jean & Jerry Friedman Shalhevet High School and Harvard-Westlake.

Shalhevet is a small, co-ed, Jewish middle and high school. The school has approximately 265 students (N. Weiss, personal interview, February 1, 2019). Due to the school's religious affiliation, the student body is primarily white/Jewish. However, there is a small African American and Asian student population (N. Weiss, personal interview, February 1, 2019). According to the admissions office, approximately 70 percent of students come from the Beverlywood neighborhood, although some students come from parts of the San Fernando Valley (N. Weiss, personal interview, February 1, 2019). In terms of transportation, Shalhevet previously considered providing bus service, but concluded that there were not enough students to justify the costs (N. Weiss, personal interview, February 1, 2019). While the majority of students are dropped off by their parents, many families carpool to school, and the admissions office helps match families to form carpools. Even some of the older students who have access to cars drive other students to school, although some families have raised concerns about trusting students to drive each other (N. Weiss, personal interview, February 1, 2019).<sup>12</sup> Ultimately, the school does not place a high priority on student transportation. As the admissions staff explain to me, the school has a long waitlist and some families are specifically looking for Jewish schools; therefore, if the family wants to send their children to this school, they will "figure it out" (N. Weiss, personal interview, February 1, 2019).

Although Shalhevet is closer in student population to the Geffen Academy, Shalhevet's Jewish affiliation means the school has a different target student body than Geffen. Another independent school in Los Angeles that is similar to the Geffen Academy, although much larger and older, is Harvard-Westlake.

Harvard-Westlake is a co-ed middle and high school, with two separate campuses. The middle school is in the Holmby Hills neighborhood of Los Angeles, just east of UCLA's campus. The high school is in Studio City. Although the admissions office did not know the exact percentage of students of color, they did know that the proportion of white students has declined while the percentage of African American and Hispanic/Latino students has increased (J. Jones, personal interview, February 12, 2019). To address concerns of diversity and inclusion in the student body, the

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<sup>12</sup> According to the California Department of Motor Vehicles, within the first year after obtaining a driver's license, minors cannot transport passengers under 20 years old unless accompanied by a licensed parent/guardian, a California driver 25 years old or older, or a certified driving instructor. See details at [https://www.dmv.ca.gov/portal/dmv/detail/pubs/brochures/fast\\_facts/ffd119#dlrestrictions](https://www.dmv.ca.gov/portal/dmv/detail/pubs/brochures/fast_facts/ffd119#dlrestrictions)

admissions office has one staff member who works specifically with organizations such as A Better Chance to try to recruit a more diverse student body.<sup>13</sup> The admissions office identified three main barriers to recruiting more low-income and students of color. The three barriers, in order of perceived magnitude, are the Independent School Entrance Exam, the geographic location of the school, and tuition (J. Jones, personal interview, February 12, 2019). Along with many other independent schools, Harvard-Westlake uses the Independent School Entrance Exam as a metric for evaluating applications. Students who attended independent elementary schools generally prepare for this exam in school, and, therefore, generally have an advantage over students from public schools (J. Jones, personal interview, February 12, 2019). The second barrier is the geographic location of the school. Long travel times due to congestion mean that most families who live further away from the school do not want to apply to Harvard-Westlake. Furthermore, the school is concerned that students who have long commutes may be tired and perform poorly in classes compared to students with shorter commutes (J. Jones, personal interview, February 12, 2019). The final barrier is tuition. However, the admissions office believes tuition is a less of a barrier than other factors since the school offers substantial financial aid; the school emphasizes to potential students that if they are admitted, the school will work hard to ensure that the student can afford to attend (J. Jones, personal interview, February 12, 2019).

With regards to transportation, the school does provide bus service. The service costs approximately \$3,000 per year, but if a family receives any amount of financial aid, the bus service is included in the aid package (J. Jones, personal interview, February 12, 2019). Although the bus service is useful (60 percent of middle school students use the bus), the bus does not solve all problems. Many families struggle to get their children to one of the existing bus stops. Another concern is after-school activities. While there is a late bus, some extracurricular activities go beyond the late bus time, and then students need to make other arrangements to get home (J. Jones, personal interview, February 12, 2019). For the high school students, there is limited parking available, and the school intends to develop incentives to promote more carpooling among students. The school does not formally organize any carpooling, but some teachers and staff members volunteer to drive students to school who live near them (J. Jones, personal interview, February 12, 2019). Finally, the school has occasionally provided funding for rideshare services such as Uber and HopSkipDrive. These services are extremely costly to the school and requests for funding are considered on a case-by-case basis (J. Jones, personal interview, February 12, 2019).

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<sup>13</sup> A Better Chance is a national organization that focuses on promoting educational achievement among students of color. See details at <https://www.abetterchance.org/about/mission-history>



It is clear from this analysis that the Geffen Academy is not alone in its transportation challenges. Larger schools are fortunate enough to be able to provide bus service in a cost-effective way. Other schools are small and in high demand such that the school does not prioritize transportation services.

#### 4.8 Main Takeaways

From this analysis, there are four main takeaways. First, the Geffen Academy has a large proportion of white students, especially when compared to nearby schools, and a majority of higher-income students. The second is that more low-income and non-white students come from the families of UCLA Staff than UCLA Faculty or non-UCLA affiliated families. The third is that there does not appear to be a noticeable difference in the spatial patterns of currently enrolled students, and students who declined admission, thus making it difficult to isolate the direct impacts of transportation on a family's decision to enroll or not enroll their student at Geffen Academy. Finally, this analysis finds that public transit routes that serve the Geffen Academy only serve neighborhoods that already have high enrollment; therefore, transit may not be a sufficient, low-cost option for the families the Geffen Academy wants to recruit.

## 5. Recommendations

The demographic and spatial analysis show that Geffen is more homogenous than other nearby schools, and despite having students from many different areas, most students live within a five-mile radius of the school. The not enrolled students have nearly the same spatial distribution as enrolled students. However, these data are not sufficient to determine the impact of transportation as a barrier. Research and interviews with other independent schools highlight important considerations regarding transportation services. From this analysis, I identify several key issues to address:

1. Limited information about the transportation concerns of families
2. Lack of information about transportation options
3. High cost of providing transportation services
4. Long commute times to reach the school
5. Limited public transit options

I recommend the following interventions to address one or more of the above issues.

### 5.1 Promote Carpooling

*Description* Carpooling can be an effective way to provide transportation options, particularly for families that do not live in high enough densities for the effective provision of public transit or school bus service. In addition, the freeway access analysis suggests that many families can access the school in a reasonable travel time if they have access to a vehicle.

The Geffen Academy currently publishes a list of families interested in carpooling, and then families need to take the initiative to reach out to each other to form carpools (J. Hoyt, personal communication, October, 2018). There is potential to improve this system and better promote carpooling.

*Advantages*

- Low cost to the school
- Can promote friendship among students and families in the carpool
- Carpooling to the school already exists

*Disadvantages*

- Scheduling is limited by the parent who is driving

- Requires that students live in close proximity to other students, or on the route to/from school
- Requires that families trust their children to travel with other parents
- Requires volunteers to drive

## 5.2 Improve Data Collection

*Description* The Geffen Academy has spatial data on enrolled students. While this information is useful, this information does not necessarily reflect the transportation needs of families who do not enroll their children at Geffen. Furthermore, there are no data on why admitted students decline the offer to enroll at Geffen, and without knowing the specific reasons, it is difficult to determine if transportation is a major barrier.

To address this concern, I recommend that the Geffen Academy staff asks families to fill out a survey when they decline admission, and in the survey asks families to state the reason for making their decision. The survey question should be a checklist of potential reasons, and ask families to rank the reasons from most important to least important. The survey also should include a free response section to allow families to provide greater detail. See Figure 13 for an example of the survey.

*Advantages*

- Low cost to develop and collect the data
- Provides evidence of which factors are the most important factor to families. These data may reveal that transportation is not as significant a barrier compared to other issues
- May potentially highlight other barriers to enrolling that the Geffen Academy staff has not identified
- Survey results can be used as justification for investments in transportation services

*Disadvantages*

- Selection bias still exists as this survey still does not collect information from families who never apply to Geffen in the first place
- The usefulness of the survey relies on a large sample of families completely filling out the questions

- Requires Geffen staff to allocate time and resources to analyze survey responses

Figure 13. Example Survey Questions for Declining Admission

1. Please rank the reasons for not enrolling your child at the Geffen Academy	
<i>Rank the reasons in terms of importance with "1" as the most important</i>	
<u>Reasons</u>	<u>Rank</u>
<b>School tuition and other costs are too high</b>	<input type="text"/>
<b>School does not offer transportation services</b>	<input type="text"/>
<b>Travel time between home to the school would be too long</b>	<input type="text"/>
<b>Other:</b> _____	<input type="text"/>
2. Please provide more detail on your rankings below	
<input style="width: 100%; height: 40px;" type="text"/>	

### 5.3 Work with Community-Based Organizations

*Description* There are several community-based organizations in Los Angeles County that focus on helping children from low-income and minority families apply to independent schools. Reaching out and working with these organizations may help the Geffen Academy connect with more students than the school can do by itself. The admission team at Harvard-Westlake works with some of these organizations, and that relationship has been beneficial to the school (J. Jones, personal interview, February 12, 2019). Some of these organization include A Better Chance and The Independent School Alliance for Minority Affairs.

*Advantages*

- No cost to the school
- Relies on the resources of other organizations
- Reach more students than Geffen can do alone

*Disadvantages*

- Requires that the Geffen staff initiate and maintain relationships
- Does not directly address transportation needs

## 5.4 Create a Transportation Page on the School's Website

*Description*

The school's website is a quick and easy way to provide information about the school to the general public. Having a section on the website dedicated to transportation shows that the school is aware that transportation may be a concern for some families, and that the school has organized all resources relevant to transportation in one location.

Some of the other independent schools in Los Angeles County have a section of their website dedicated to transportation services. Of the schools that have a dedicated section, most simply show the cost of the bus service the school provides and a bus route. I think this is an opportunity for the Geffen Academy to stand out and make a detailed transportation page that shows all the travel options available, not just services the school itself may provide. Palisades Charter High School is one example that I think does a good job of summarizing the different transportation options.

See their website at:

<https://www.palihigh.org/apps/pages/transportation>

The Geffen Academy can use their website to show transportation options from specific neighborhoods in the region. Ideally this would contain all the public transit options, and driving directions. The school can also post a link on the website for enrolled students to find carpools with other students.

*Advantages*

- Creates one central location for the school to post all transportation related information that is easily accessible by parents

- Informs perspective students who might be interested in applying about all their transportation options
- Gives a reference for staff to refer families to when dealing with questions regarding transportation
- Suggests to applicants that the school is aware of transportation concerns, and has put in effort to address those concerns.
- Uses the existing school website

*Disadvantages*

- Requires staff time and resources to create and update the information
- Information will be general and not applicable to everyone
- Requires families to have internet access

## 5.5 Provide Bus Service

*Description*

When looking at peer institutions, some independent schools provide their own transportation in the form of a school bus. Existing public transit may not serve the needs of neighborhoods and communities from which the Geffen Academy wants to recruit. Therefore, providing a bus can provide more access to these potential students.

*Advantages*

- Provides a safe option to travel to school
- Routes can be set to serve where students live
- Parents who do not work near Westwood do not need to make a detour to drop off their children

*Disadvantages*

- Expensive
- Requires a high student density to be cost-effective
- School needs to address needs of students on financial aid
- Fixed bus schedules limit the type of before and after school activities in which students can participate
- Geffen Academy will need to promote/advertise the bus service so more families are aware that the service exists

## 5.6 Provide Transportation Allowance for Low-Income Families

*Description* The specific transportation needs of individual families vary greatly depending on household income, home address, work address, availability of a personal vehicle, and other factors. A direct way of helping families is to give students a personal transportation allowance.

The school can include a set cost for transportation in the overall cost of attendance (tuition plus other fees). Then, families who qualify for financial aid can receive an allowance for transportation services. Families can use this money to purchase services that best help them, either paying for gas to drive their children to school, buying a public transit monthly pass, or occasionally using services like HopSkipDrive (a rideshare service, like Uber, that is specifically designed to serve children going to school).

*Advantages*

- Reduces the need to provide a school bus or other transportation services
- Easy to administer
- Families are able to use the money in the most cost-effective way for them

*Disadvantages*

- Expensive
- More financial resources alone may not help families overcome certain distance barriers

## 6. Conclusion

This research project looks at transportation as it relates to school access. For this project, I use the Geffen Academy as a case study to see how transportation barriers impact enrollment at the school for low-income and non-white students. I evaluate student demographic data and determine that Geffen Academy has a large proportion of white students and higher-income students. I find that a majority of Geffen Academy's non-white and low-income students come from the families of UCLA staff. After assessing the spatial location of enrolled and not enrolled students, I find that there is no meaningful difference in the location of the two groups. However, most enrolled students live near the school. This finding suggests that transportation may be a barrier for some students who want to enroll at Geffen Academy. The results of the travel survey show that while most families drive their children alone to school, there is great interest in carpooling. When looking at access to the school by travel mode, public transit primarily serves neighborhoods of students who already live near the school. Furthermore, when looking at travel times for a sample of low-enrollment neighborhoods, transit can take 1.25 to 2.8 times longer than driving. Assessing the transportation services of peer schools suggest that Geffen Academy should consult with community-based organizations to help with recruitment of historically-disadvantaged families.

As a result of my analysis, I make six recommendations to the Geffen Academy to help them improve transportation access.

1. Promote carpooling to lower the cost of driving for families.
2. Improve data collection to identify the transportation needs of enrolled students and students who decline admission.
3. Work with community-based organizations that focus on increasing access to independent schools among low-income and non-white students.
4. Create a dedicated transportation page on the school's website to assemble all transportation-related resources into one, easy to access webpage.
5. Provide a school bus service to reach students who may not be able to access the school via driving or public transit.
6. Include transportation costs in financial aid calculations, and provide a transportation allowance to low-income families to cover travel expenses.



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## Appendix A: Travel Survey of Current Students

On April 23, 2019, the Geffen Academy sent a travel survey to the families of currently enrolled students. The survey was conducted via *SurveyMonkey*. Families with more than one student enrolled at the Geffen Academy were instructed to respond based on their eldest child.

Figure 14 below includes the message sent to families inviting them to respond to the survey.

*Figure 14. Invitation to Respond to Travel Survey*



[Home](#) | [Calendar](#) | [Login](#)

Tuesday, April 23, 2019

Dear Geffen Academy Families,

As part of our ongoing research into transportation and its impact on our student body, we would like to ask for your assistance in completing a survey.

This year, in partnership with a UCLA graduate researcher, Esteban Doyle, we kindly ask you to fill out the survey in order to evaluate the data year-over-year and glean how we might leverage alternative transportation methods.

The survey will collect where you live and how you commute and should take approximately 5 minutes to complete.

*If you have more than one child, please answer according to your eldest.*

### [TRANSPORTATION SURVEY](#)

-  
We thank you for your participation,

*The Diversity, Equity, and Inclusion Committee*  
Geffen Academy at UCLA

Geffen Academy at UCLA | 11000 Kinross Ave. Los Angeles, CA 90095 |  
[contact@geffenacademy.ucla.edu](mailto:contact@geffenacademy.ucla.edu) | (310) 794-9877

The survey included thirteen questions regarding grade level, home zip code, and travel behavior. Descriptions of each question and the answer format are presented in Table 12 below.

*Table 12. Travel Survey Questions*

Question Number	Question	Question Marked as Required?	Answer Format
1	What is/are your student(s) grade level(s) this year?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• 6<sup>th</sup></li> <li>• 7<sup>th</sup></li> <li>• 8<sup>th</sup></li> <li>• 9<sup>th</sup></li> <li>• 10<sup>th</sup></li> </ul>
2	What is your home zip code?	Yes	Free response
3	Does a member of your household travel to UCLA daily?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
4	If Yes, does your Geffen Academy student travel to UCLA with that household member?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>

5	How does your student travel to Geffen Academy most often?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• By private car with no other Geffen Academy students</li> <li>• By private car with other Geffen Academy students</li> <li>• By private car with other students attending nearby schools</li> <li>• By car with HopSkipDrive</li> <li>• Walk from home</li> <li>• Bicycle from home</li> <li>• Skateboard or scooter from home</li> <li>• By public bus</li> <li>• Other (please specify)</li> </ul>
6	If your student travels by bus, which one?	No	Multiple choice <ul style="list-style-type: none"> <li>• Metro Bus</li> <li>• Santa Monica Blue Bus</li> <li>• Culver City Bus</li> <li>• Other (please specify)</li> </ul>
7	What is your bus route number?	No	Free response
8	What is the approximate distance from your home to Geffen Academy?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• Less than 2 miles</li> <li>• 2-4 miles</li> <li>• 4-6 miles</li> <li>• 6-8 miles</li> <li>• More than 8 miles</li> </ul>
9	When does your student typically <b>arrive</b> at Geffen Academy most mornings?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• 7:30-8:00am</li> <li>• 8:00-8:30am</li> <li>• 8:30-8:45am</li> <li>• 8:45-9:00am</li> </ul>
10	How long does it take you to get <b>to</b> Geffen Academy on most <b>mornings</b> ?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• Under 20 minutes</li> <li>• 20-40 minutes</li> <li>• 40-60 minutes</li> <li>• More than 60 minutes</li> </ul>

11	When does your student typically <b>leave</b> Geffen Academy most days?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• 4:00-4:30pm</li> <li>• 4:30-5:00pm</li> <li>• 5:00-5:30pm</li> <li>• 5:30-6:00pm</li> <li>• After 6pm</li> </ul>
12	How long does it take you to get <b>home</b> from Geffen Academy on most days?	Yes	Multiple choice <ul style="list-style-type: none"> <li>• Under 20 minutes</li> <li>• 20-40 minutes</li> <li>• 40-60 minutes</li> <li>• More than 60 minutes</li> </ul>
13	Which travel option does your student currently not use, but would be interested in using?	No	Rank choice <ul style="list-style-type: none"> <li>• By private car with no other Geffen Academy students</li> <li>• By private car with other Geffen Academy students</li> <li>• By private car with other students attending nearby schools</li> <li>• By car with HopSkipDrive</li> <li>• Walk from home</li> <li>• Bicycle from home</li> <li>• Skateboard or scooter from home</li> <li>• By public bus</li> </ul>