



GARDEN GROVE

Safe Routes to School: Phase I Master Plan



March 2019
FINAL



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City of Garden Grove

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1. Introduction

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1.1 PLAN PURPOSE

The Garden Grove Safe Routes to School: Phase 1 Plan serves as step one towards improving the everyday lives of Garden Grove students by initiating the Safe Routes to School (SRTS) movement in the City of Garden Grove. Safe Routes to School is an international movement that strives to increase the number of children walking or biking to school by removing barriers that prevent them from doing so. SRTS programs address problems such as childhood obesity, air quality, and traffic congestion around schools.

This Plan provides engineering recommendations for infrastructural improvement; guidance for educational, encouragement, evaluation, and enforcement programs; and strategies to implement the recommendations and programs that are supportive of the Safe Routes to School Vision.



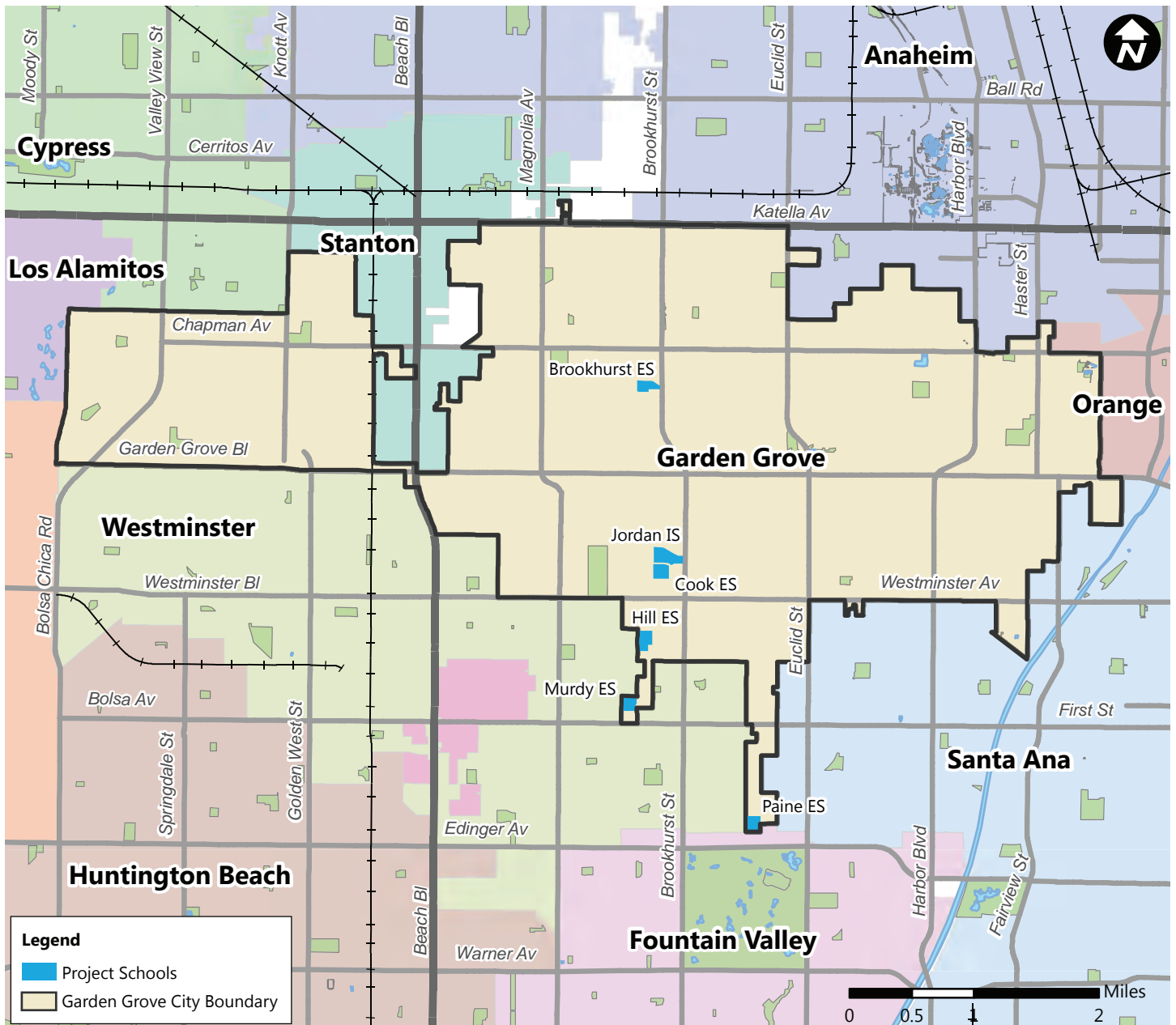


Figure 1-1: Map of School Locations

As the first phase of developing a SRTS program in the City of Garden Grove, this Plan focuses on six schools from the Garden Grove Unified School District (GGUSD). These are: A. J. Cook Elementary, Donald S. Jordan Intermediate, Thomas Paine Elementary School, Brookhurst Elementary, John Murdy Elementary, and Merton E. Hill Elementary. The schools were selected using a needs-based criterion which include student participation in free or reduced lunch programs, income, the number of bicycle and pedestrian collisions, and the schools readiness to participate in the planning process. The City hopes to expand the program to other schools throughout the city as time progresses.



1.2 SIX E'S OF SAFE ROUTES TO SCHOOL PLANNING

The success of a Safe Routes to School program lies upon the 6 "E's": Evaluation, Education, Encouragement, Enforcement, Engineering, and Equity. The 6 "E's" ensure that the program takes a multi-prong and well-rounded approach towards achieving its goals.

Evaluation- The evaluation effort of the studied areas allows program participants to develop a set of baseline conditions that can be used to gauge project success in future years. These conditions include documenting existing traffic and pedestrian-related conditions, listening to parent concerns, identifying existing travel patterns, and evaluating safety hazards such as pedestrian and bicycle collisions and crime.

Engineering- Proper pedestrian and bicycle infrastructure are needed for pedestrians and bicyclists to reach their destinations in a safe, and comfortable, manner. Lack of infrastructure such as sidewalks and bicycle lanes, forces pedestrians and bicyclists to travel in the street along with motor vehicles, putting them in harm's way.

Education- Educational programs can equip students,

parents, and the greater Garden Grove community with the knowledge, skills, and confidence to bike and walk to their desired destinations. Examples of education programs include Pedestrian Rodeos and Bicycle Safety Trainings.

Encouragement- Encouragement programs can inspire students, parents, and the Garden Grove community to try walking and biking. Through programs such as Walk and Bike to School Days and Walking School Buses & Bike Trains, program participants are encouraged to get out of their car and onto their feet and bikes.

Enforcement- Enforcement strategies help ensure that motorists, bicyclists, and pedestrians adhere to traffic laws within the vicinity of the school. Community enforcement programs such as student safety patrols and crossing guard programs can assist local law enforcement officers on this effort.

Equity- The Safe Routes to School program should ultimately be an endeavor that strives to be inclusive, particularly for disadvantage communities, low-income communities, communities of color, and other communities facing challenges that prevent them from walking and bicycling safely to school.

1.3 BENEFITS OF SAFE ROUTES TO SCHOOL

This Plan will benefit the students and the greater Garden Grove community in several ways.

Improve Accessibility to Schools- SRTS will provide pedestrian and bicycle infrastructure recommendations that address gaps in local active transportation networks. This will aid not only those that currently rely on walking and biking as a vital mode of transportation with better infrastructure to continue doing so, but also promote and encourage more people to consider walking and biking as a feasible mode of transportation to schools.

Create Safer and More Comfortable Environments for Walking and Biking- More pedestrian and bicycle infrastructure will improve community safety while enhancing the walking and biking environment needed in a manner that will encourage additional trips to be taken by these modes.

Improve Children's Health- Students who walk and bike to school on a regular basis get more daily physical exercise. Merely walking one mile each way to school can amount for two-thirds of the 60 daily minutes of exercise recommended by the Centers for Disease Control.

Improve Student's Academic Performance- Children making a habit of physical activity are likely to boost their academic performance. The California Department of Education has found that increases in physical fitness scores among state middle-schoolers correlate with higher Stanford Achievement Test scores, across socioeconomic strata and academic levels.

Improve Public Health- Public health in surrounding communities can benefit from the reduction of vehicle emissions and noise levels when students shift their mode of travel from automobiles to walking and biking.

Reduction in Greenhouse Gas Emissions- Safe Routes to School can reduce the need for daily short-distance automobile trips. This in turn will reduce greenhouse gas emissions from vehicle usage.

Did You Know?

Stakeholders who were involved in this project include staff from the City, GGUSD, and Schools, as well as, elected officials and community organizations.

60 people participated in the Walk Audit for Brookhurst Elementary.

Economy – SRTS can have a positive economic impact by reducing the need for a family motor vehicle and saving parents’ money on fuel that they would normally expend driving their children to school.

1.4 GOALS OF THE GARDEN GROVE SAFE ROUTES TO SCHOOL: PHASE 1 PLAN

The Garden Grove Safe Routes to School: Phase I Plan has four overarching goals:

1. Improve Safety- Creating safer walking and biking conditions
2. Improve Public Health- Identifying and encouraging active transportation options
3. Improve Connectivity- Identifying locations for infrastructural improvements
4. Improve Drop-Off & Pick-Up- Analyzing each school for site-specific application of strategies

1.5 GARDEN GROVE SAFE ROUTES TO SCHOOL PARTNERS

The Plan offered a rare opportunity for the City of Garden Grove, Garden Grove Unified School District (GGUSD), County of Orange, and the community to work together on a Plan that will improve safety, public health, connectivity, and school drop-off & pick-up. City council members, staff from the City of Garden Grove Planning Department, Public Works Department, and Police Department, as well as, representatives from Orange County Health Care Agency and nearby municipalities attended community outreach events and meetings to not only listen to community members, but also provide their support for this Plan. GGUSD staff played an active role in identifying areas for improvement, implementing recommendations located within school boundaries, and assisting with marketing the community events. GGUSD staff includes the district staff, board members, principals, teachers, and crossing guards. Lastly, community members, comprised mostly of parents and members from local organizations, took time off their busy schedules to offer their valuable opinions. The project afforded different groups to come together, identify challenges and opportunities, and distribute responsibilities to respective individuals/ groups so everyone can achieve a common goal.

1.6 HOW TO USE THIS PLAN

The Plan is comprised of six chapters that allow readers to easily navigate from one section to another. Chapter 1- Introduction and Chapter 2- Planning Process introduce the project and the community outreach process. Chapter 3- SRTS Toolbox provides an array of engineering infrastructure and programming ideas that can be applied at schools. Meanwhile Chapter 4 through 9- SRTS by School delves into each school and offers a discussion of school characteristics, current infrastructure and programming conditions, and engineering and programming recommendations. The Plan concludes with Chapter 10- Implementation Plan which offers strategies for implementation.



Together

We

Grow

with

Kindness



2. Project

Context

- 2.1 Introduction
- 2.2 Policy Context
- 2.3 Existing Conditions

2.1 INTRODUCTION

The City of Garden Grove is a bustling city located in northern Orange County, California. Garden Grove has a flat topography and Mediterranean weather, ideal for walking and biking. California State Route 22 passes through the city in the east-west direction. According to the 2017 Master Plan of Arterial Highways (MPAH) by Orange County Transportation Authority (OCTA), there are 11 principal, major, and primary arterials that run throughout the City. These include Chapman Avenue, Garden Grove Boulevard, Harbor Boulevard, Euclid Street, Brookhurst Street, and Magnolia Street. Municipalities that form a border with Garden Grove include the Cities of Anaheim, Stanton, Westminster, Fountain Valley, Santa Ana, Los Alamitos, and Orange.

The City boasts a population of 174,676, based on the 2012-2016 American Community Survey 5-Year Estimates. Of this population, 20% are school-age children and 12.5% are seniors. Garden Grove residents are comprised of nearly 15% White, 30% Vietnamese, and 16% of other races not categorized in the American Community Survey. The median household income is \$60,522, slightly below that of California's (\$63,783). The majority of residents drive alone to work (79%), while 13% of residents commute to work via carpool. Less than 3% of residents walk or bike to work.

2.2 POLICY CONTEXT

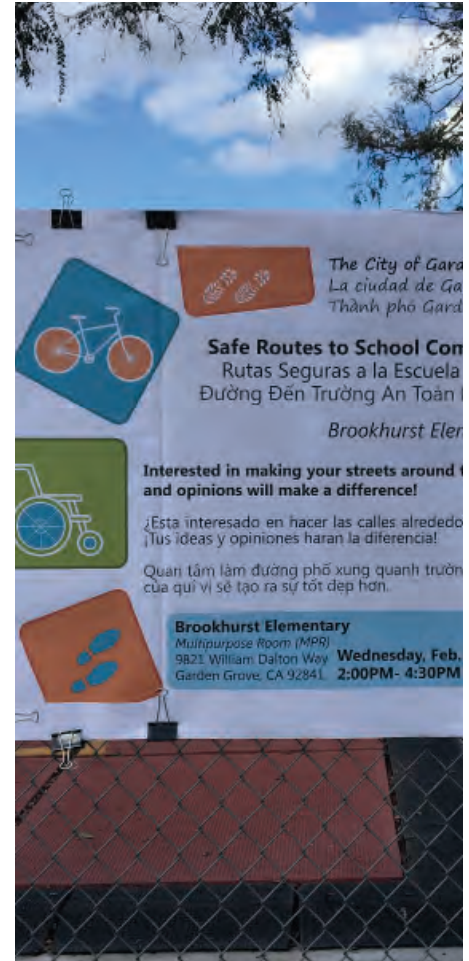
The Safe Routes to School plan builds upon previous efforts completed by the City, including plans, programs, and events, and integrates with neighboring, county-wide, and regional visions of a safer future for those on bikes and on foot.

Local Active Transportation Efforts

Garden Grove completed the [Active Streets Master Plan](#), which recommends infrastructure improvements for better walking and biking connectivity throughout Garden Grove, including a map of proposed bike corridors. The Plan shares SRTS goals of building a healthier and safer Garden Grove while also focusing on making the City more vibrant and engaging. An SRTS program in Garden Grove supports the following goals and objectives established in the plan:

- Goal 1, "Increase mobility and access for pedestrians and bicyclists to employment centers, schools, transit, recreation facilities, etc. for people of all ages and abilities."
- Objective 2.A, "Reduce the combined number of collisions, injuries, and fatalities involving people walking and bicycling by 50 percent from 2015 levels by 2025."
- Objective 4.A, "Establish and enhance safe routes to and from schools that will enable and encourage more students to walk or ride a bicycle or skateboard to/from school."
- Goal 5, "Improve accessibility for all people walking and bicycling through equity in public engagement, service delivery, and capital investments"

In conjunction with SCAG Go Human, Garden Grove hosted the [Re: Imagine Garden Grove Open Streets](#) event on an annual basis since 2014. People walking, biking, and skateboarding could explore a car-free, re-envisioned streets on and around Historic Main Street. The event included activities for school-aged children including arts and crafts and child-sized bikes.



There are several programs run by the local police. The [Neighborhood Traffic Unit](#), a division of the Community Policing Bureau, educates the community about traffic related topics. They complete safety presentations at schools on safe walking and biking behavior. The [Accident Reduction Campaign](#) focuses on preventing fatal pedestrian and bicycle collisions through strategic citations.

County & Collaborative Active Transportation Efforts

The Orange County Transportation Authority (OCTA) is currently preparing [OC Active](#), a county-wide bike and pedestrian plan. In association with this program, OCTA has completed a [Bikeway Corridors Improvement](#) Project to identify over 400 miles of recommended bikeway corridors to implement across the county. OCTA approved \$1.11 million for Garden Grove bicycle corridor improvements for all types of bikeways.

Garden Grove has partnered with the City of Anaheim in association with California Walks and the Alliance for a Healthy Orange County for the [Active Transportation Leadership Program \(ATLP\)](#). Six Garden Grove ATLP workshops were held, attended in total by 108 people who were taught advocacy strategies, best practice designs, and opportunities to engage with other major stakeholders. Programs like these help to build a core base of young leaders.

Orange County Health Care Agency (OCHCA) has sponsored *Walkability Audits* at schools in Orange County to promote healthier walking options for children. KOA and Community Now worked with OCHCA to sponsor the walkability audits at the program schools.

State and Regional Active Transportation Efforts

As the Metropolitan Planning Organization for the six-county Los Angeles Metropolitan region, the Southern California Association of Governments (SCAG) sponsors events and programs supporting walking and biking across the metropolitan region. The 2016 *Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)* sets a vision and shared goals towards helping to make active transportation more attractive in Southern California. Language included in the RTP/SCS indicates that Garden Grove SRTS efforts support the regional vision, including “Improved public health and a healthier environment, including improved air quality and improved health resulting from more opportunities to bicycle, walk or pursue other alternatives to driving.” SCAG also administers funding from the California Active Transportation Program, which recently sponsored \$440 million in funding through its Active Transportation grants. In response to increasing numbers of pedestrian fatalities, California established the month of September as *Pedestrian Safety Month*. The Garden Grove Police Department released a statement stating their intent to support associated programming.

Neighboring Cities

Three cities that neighbor Garden Grove overlap the attendance boundaries of schools analyzed in this report: City of Santa Ana, Westminster, and Fountain Valley. Fountain Valley has completed no significant active transportation plans or programs in the last ten years. Westminster recently released an update to their General Plan in 2016 including the *Mobility Element* that lays out a plan to change roadway design to a complete streets vision. Santa Ana is working on several active transportation planning documents, including completing the *Complete Streets Plan*, sponsoring the *Travel Safe, Share the Space* public awareness campaign which hosts regular events, and preparing a *Safe Mobility Plan* to reduce severe and fatal pedestrian and bicycle injuries. While these plans include priority corridors, they do not specify specific treatments that could overlap with Garden Grove Safe Routes to School.

Did You Know?

The six schools involved in this project enrolled 2,823 students in the 2017-2018 school year.

Of the students enrolled in the six schools, 2,051 (72.6%) participated in the Free or Reduced Price Meal Program.

The City collaborated with the neighboring jurisdictions such as Westminster, Santa Ana, and Fountain Valley to ensure that infrastructure recommendations are consistent with their future plans and policies.

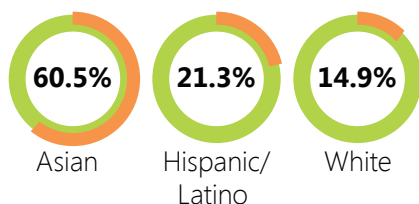
Garden Grove Safe Routes to School

Snapshot

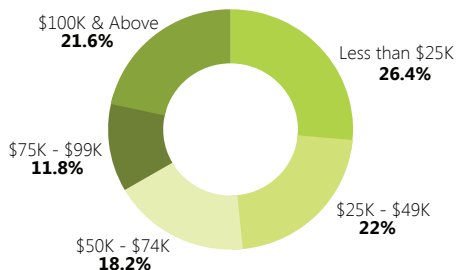
The six schools enrolled **2,823 students** in the 2017-2018 school year. Of these students, **2,051 (72.6%)** participated in the Free or Reduced Price Meal (FRPM).

COMMUNITY CHARACTERISTICS

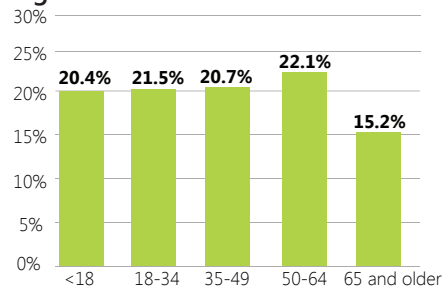
Race



Median Household Income

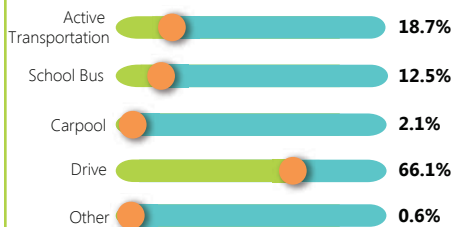


Age

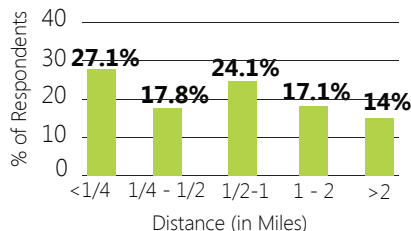


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



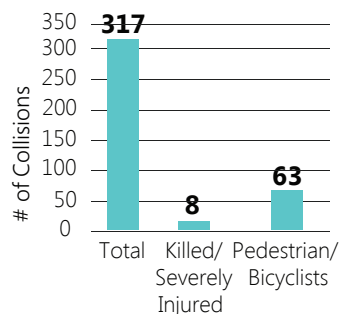
Input from the Community

"I am happy to allow my child to walk to school by himself, but I am uncomfortable as well. I know there was an issue of kidnapping and too much traffic on intersections."

"Some kids are too young to let them walk by themselves, and I don't think its safe, or when biking when kids are older."

SAFETY

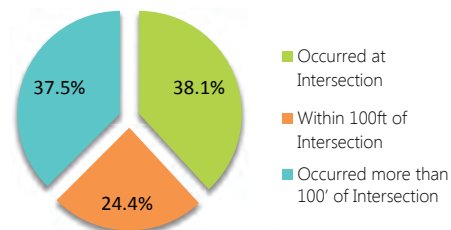
Transportation Collisions within 1/4 Mile Radius



Schools with Highest Collisions within 1/4 Mile Radius

- 1 A.J. Cook Elementary (23)
- 2 John Murdy Elementary (16)
- 3 Jordan Intermediate (15)
- 4 Brookhurst Elementary (8)

Collision Locations



2.3 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near the six studied schools. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children’s access to health care, and communities’ exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

*Data retrieved from American Community Survey 2016 Estimates

Race

	0.25 Mile
White	14.90%
African American or Black	0.70%
American Indian or Native Alaskan	0.90%
Asian	60.50%
Native Hawaiian or Pacific Islander	0.10%
Other	0.10%
Two or More	1.50%
Hispanic or Latino	21.30%

Median Household Income

	0.25 Mile
MHHI less than \$25,000	26.40%
MHHI \$25,000 - \$49,999	22.00%
MHHI \$50,000 - \$74,999	18.20%
MHHI \$75,000 - \$99,999	11.80%
MHHI \$100,000 - \$149,999	13.40%
MHHI \$150,000 or More	8.20%

Age

	0.25 Mile
Population under 18	20.40%
Age 18 - 34	21.50%
Age 35 - 49	20.70%
Age 50 - 64	22.10%
Age 65 or Older	15.20%

Language Capabilities

	0.25 Mile
English Only Households	24.40%
Spanish Speaking Households	14.70%
Limited English Speaking Housheolds	24.00%

Collision Type

	#	0.25 Mile
Pedestrian	24	7.60%
Bicycle	39	12.30%
Total Collisions	317	100%
Total Bicycle and Pedestrian	63	19.90%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	5	20.83%
Severely Injured	1	4.17%
Injury (Visible)	7	29.17%
Injury (Complaint of Pain)	11	45.83%
All Injured	19	79.17%
Property Damage Only	0	0%

Bicycle Injury Status

	#	0.25 Mile
Fatal	1	0.07%
Severely Injured	1	0.07%
Injury (Visible)	18	1.18%
Injury (Complaint of Pain)	19	1.25%
All Injured	38	2.50%
Property Damage Only	0	0%

Health and Environmental Factors

	0.25 Mile
Asthma	25th percentile
Cardiovascular Disease	35th percentile
Ozone	53rd percentile
PM 2.5	66th percentile
Diesel PM	48th percentile
Traffic Density	65th percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile of the schools, 317 collisions occurred between 2013 and 2017. Of those collisions, 63 (19.9%) involved a pedestrian or bicyclist. More than half of the pedestrian and bicycle collisions involved resulted in a complaint of pain, while 25% resulted in visible injuries, and another 12.6% led to victims with severe injuries or fatalities. The primary collision factor for collisions involving a bicyclist was the bicyclist riding on the wrong side of the road. Meanwhile, 86% of all pedestrian collisions involved either a pedestrian violation or occurred within the pedestrian right-of-way.

*Data retrieved from TIMS 2013-2017

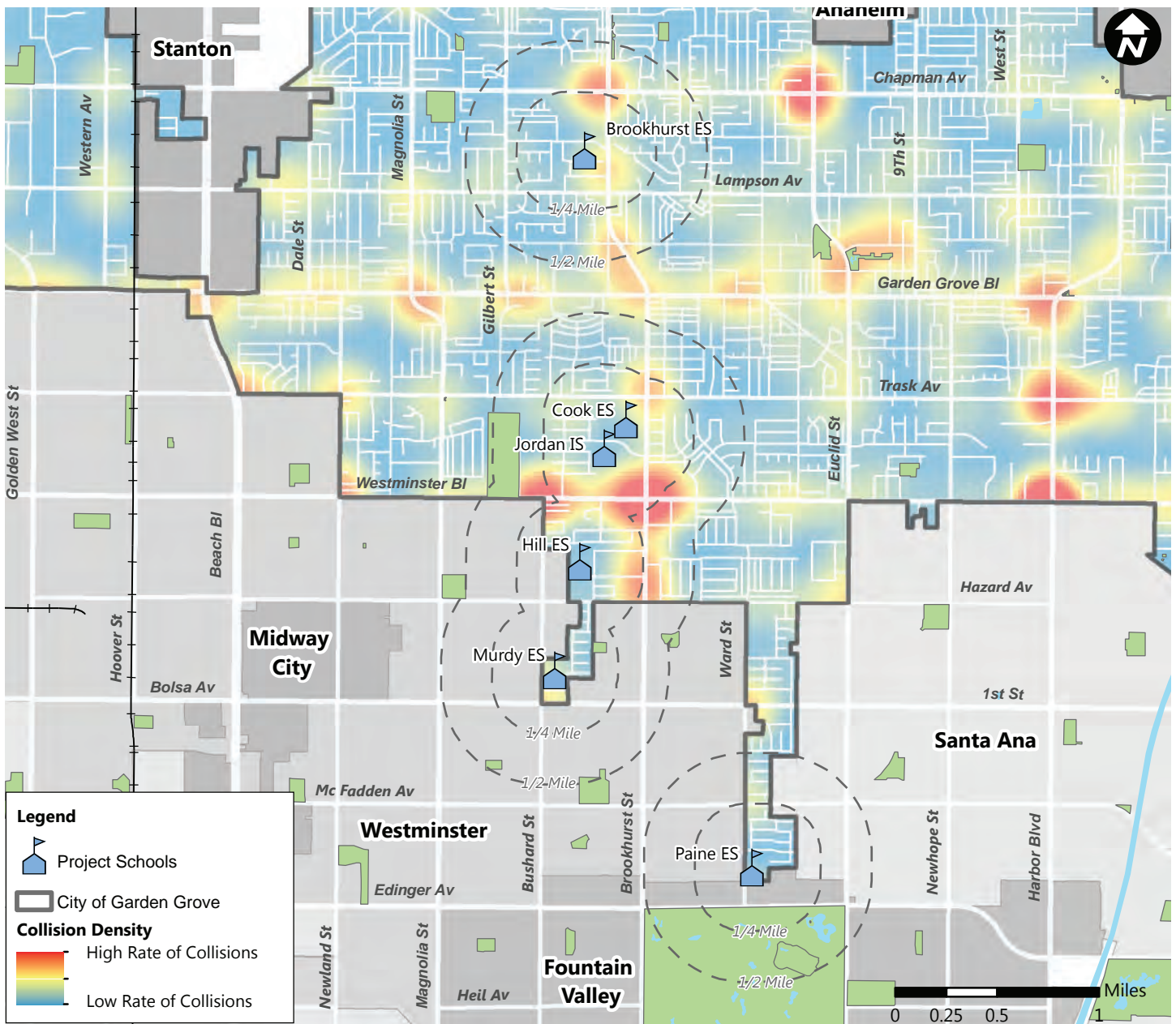


Figure 2-1: Heat Map of Pedestrian and Bicycle Collisions in Garden Grove

Median Household Income

Approximately 50% of households within a ¼ mile of schools have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$53,289, which is below the statewide median household income of \$63,783, the county-wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026.

*Data retrieved from American Community Survey 2016 Estimates

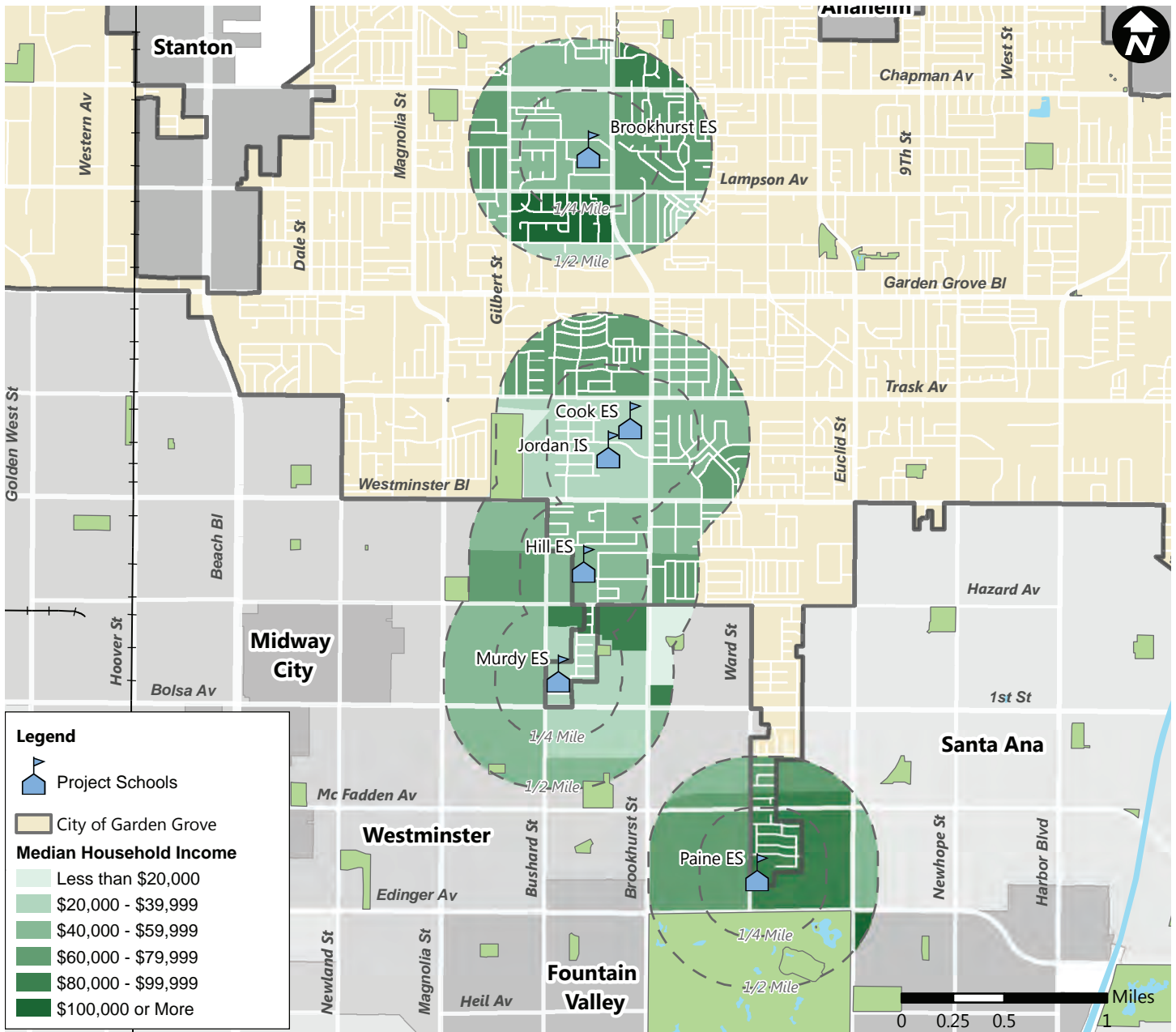


Figure 2-3: Map of Median Household Income

Population Younger Than 18 Years Old

Approximately 1 in 5 residents living in the ¼ mile area surrounding the schools are under the age of 18. This rate is just under the citywide population share of 23.1%. This rate is generally consistent throughout the project area, with only a few census block groups having significantly lower or high rates.

*Data retrieved from American Community Survey 2016 Estimates

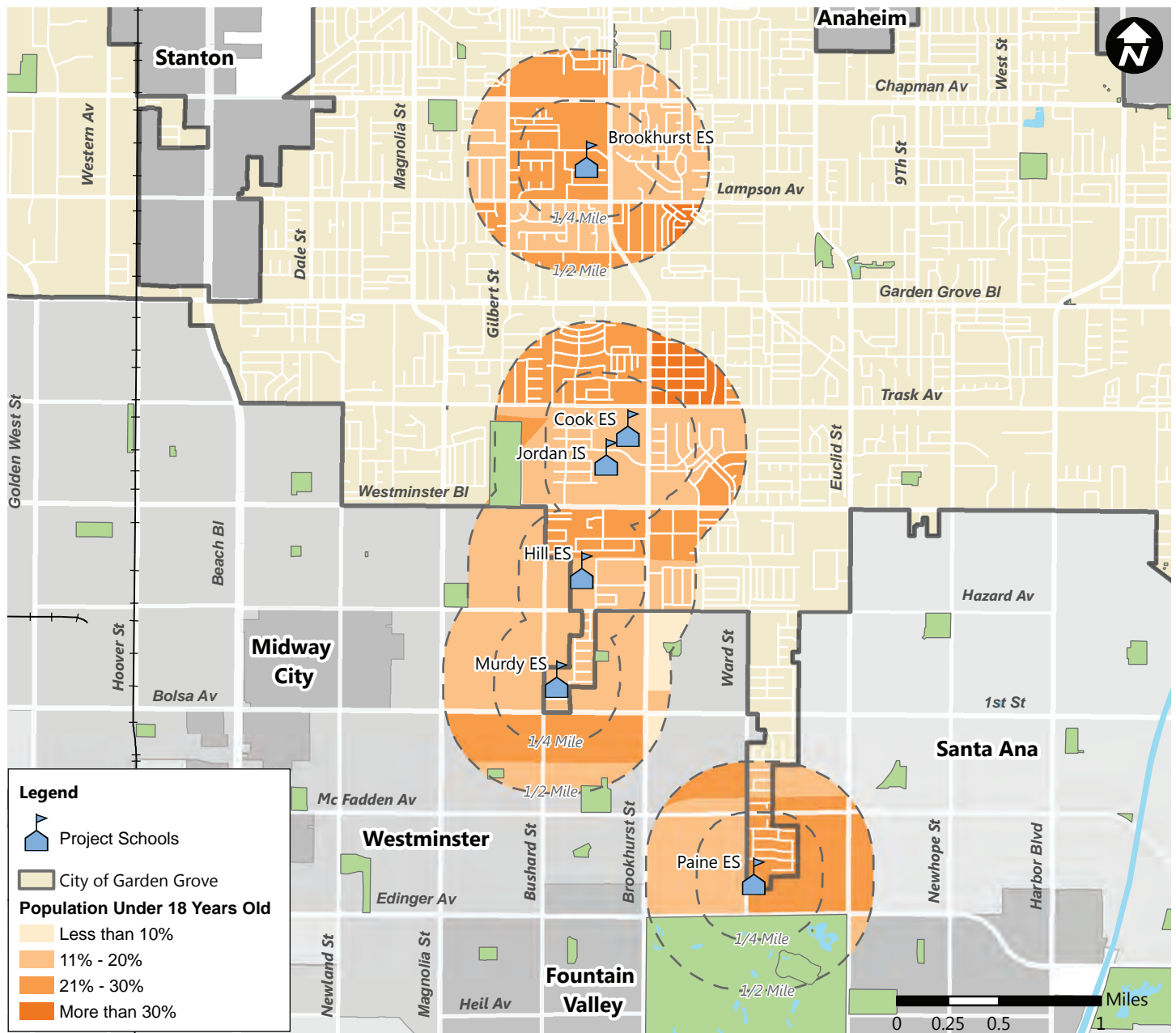


Figure 2-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Cook Elementary has a high rate of Asian and Hispanic residents. According to the 2016 American Community Survey, approximately 60% of households within a ¼ mile of the school are of Asian descent and nearly 21% of households are of Hispanic or Latino descent. Among all households in the area, nearly 1 in 4 households has limited English communication abilities.

*Data retrieved from American Community Survey 2016 Estimates

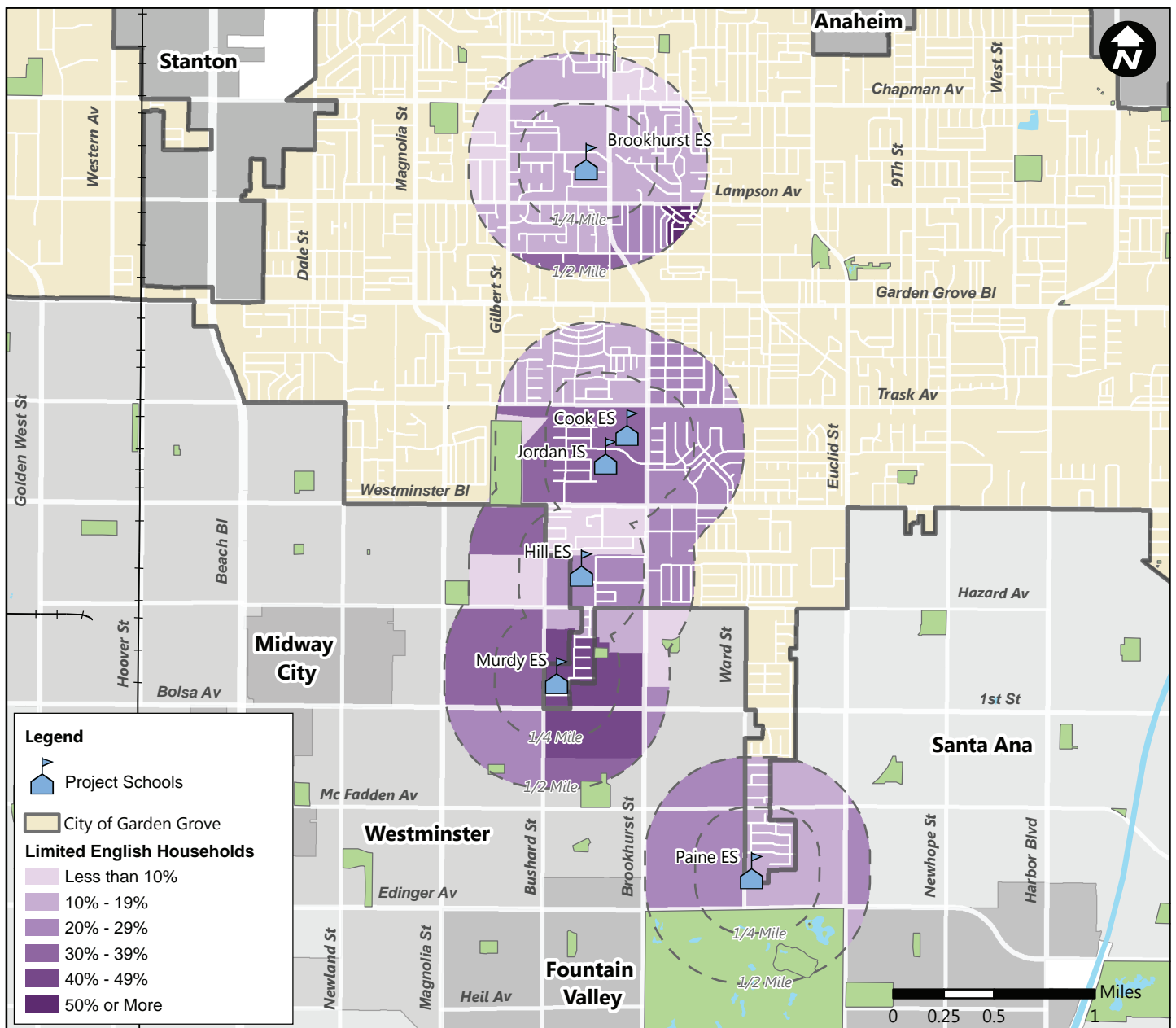


Figure 2-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding the schools are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the schools have an average percentile score of 25; Garden Grove community members fare better on this factor compared with 75% of state residents.

*Data retrieved from CalEnviroScreen 3.0

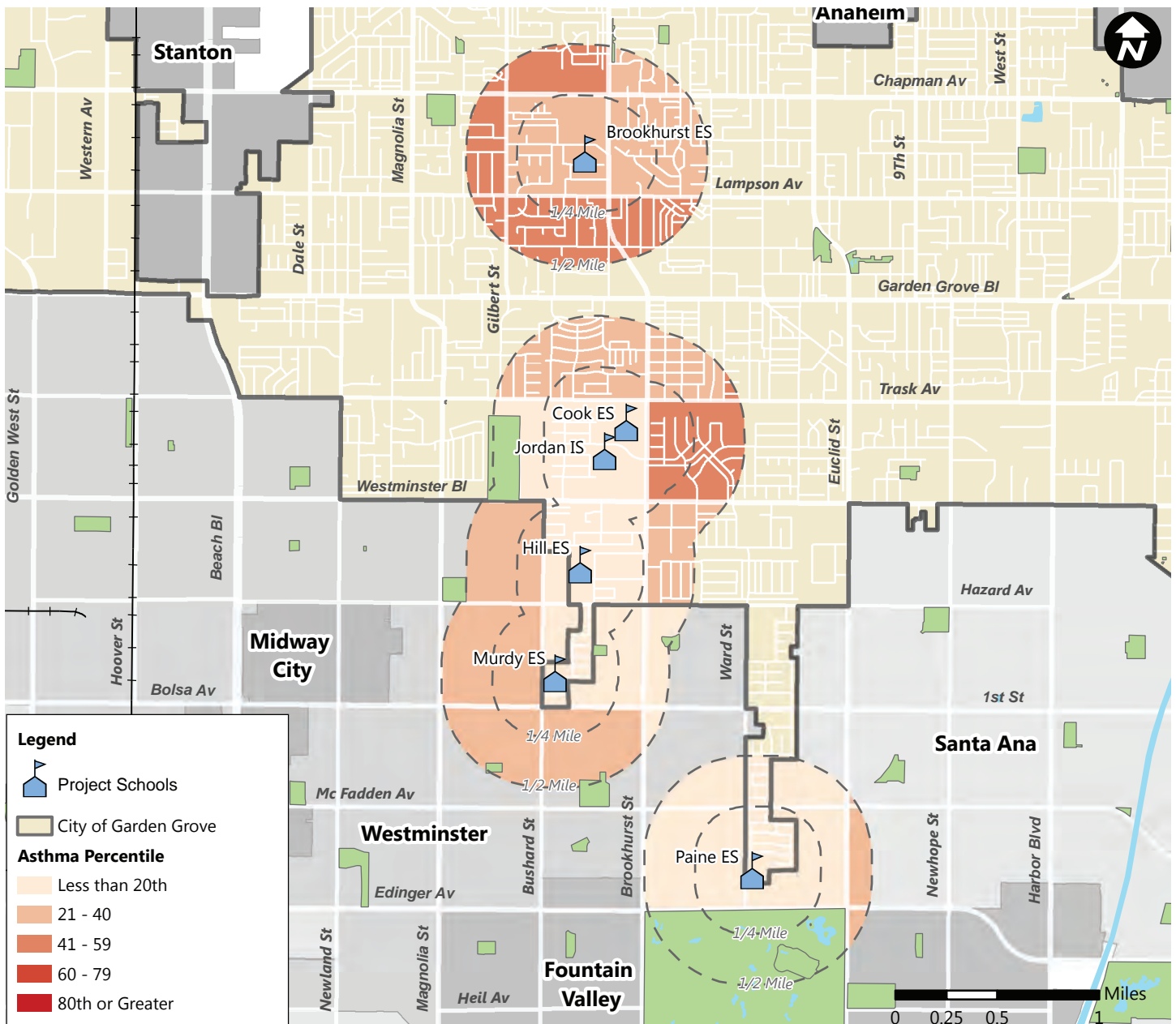


Figure 2-6: Map of Population With Asthma

Households With Cardiovascular Disease

The rates of Cardiovascular Disease-related hospital visits surrounding the schools rank in the 35th percentile compared to the rest of the state. According to CalEnviroScreen 3.0, some census tracts surrounding the school are ranked significantly higher, up to the 89th percentile. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood.

*Data retrieved from CalEnviroScreen 3.0

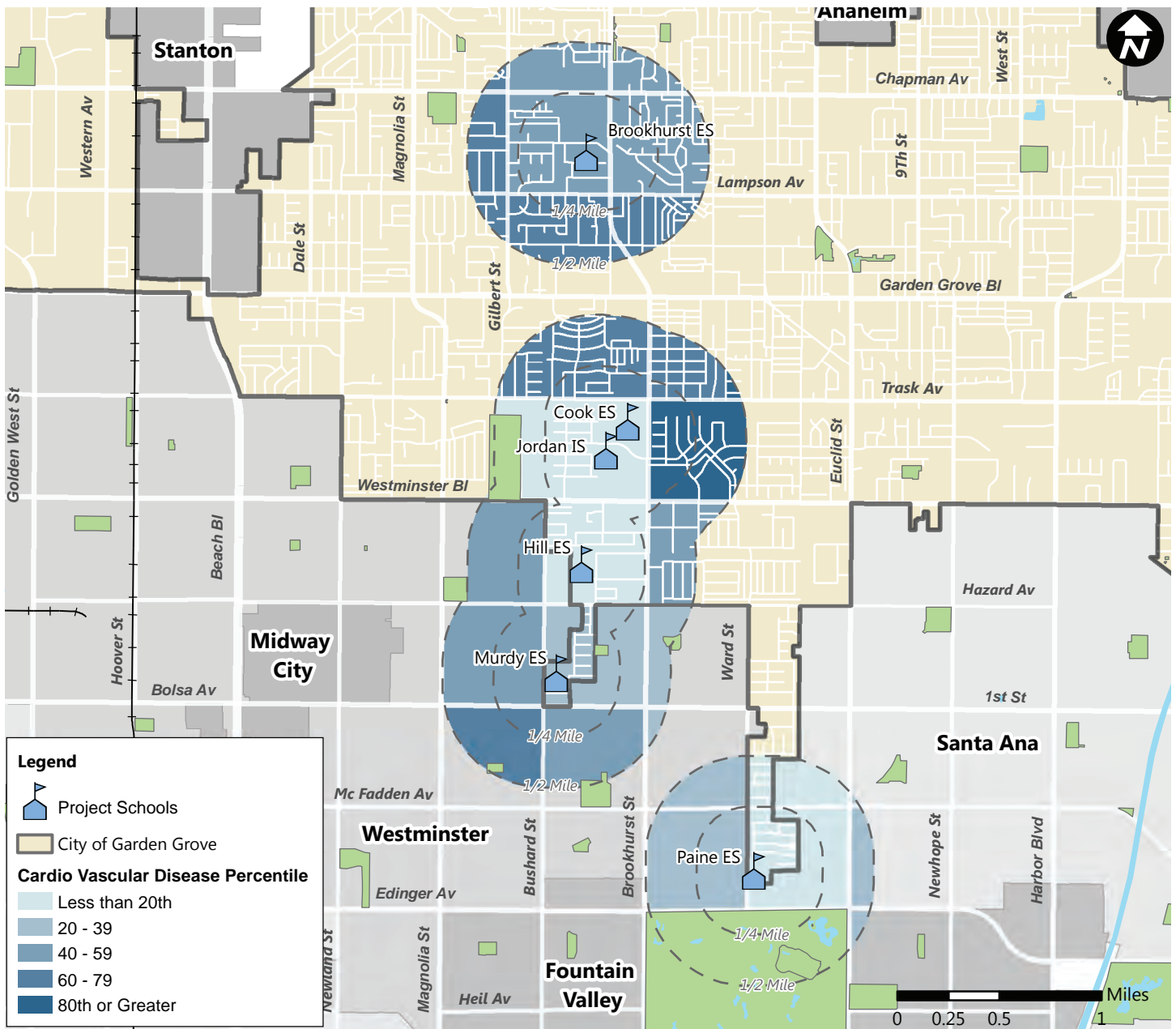


Figure 2-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. Most block groups in the study areas have a rate similar to the overall California average.

*Data retrieved from CalEnviroScreen 3.0

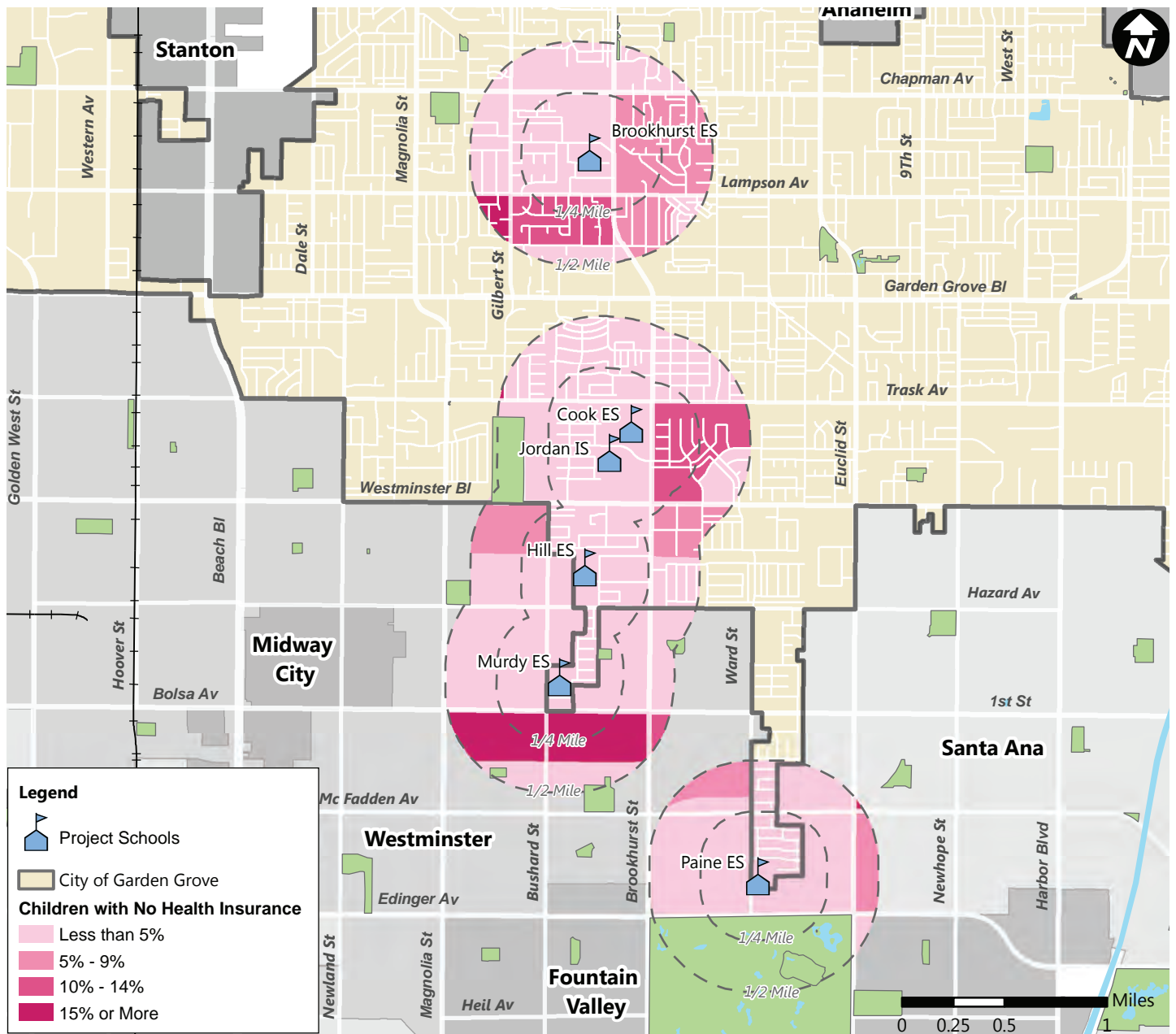
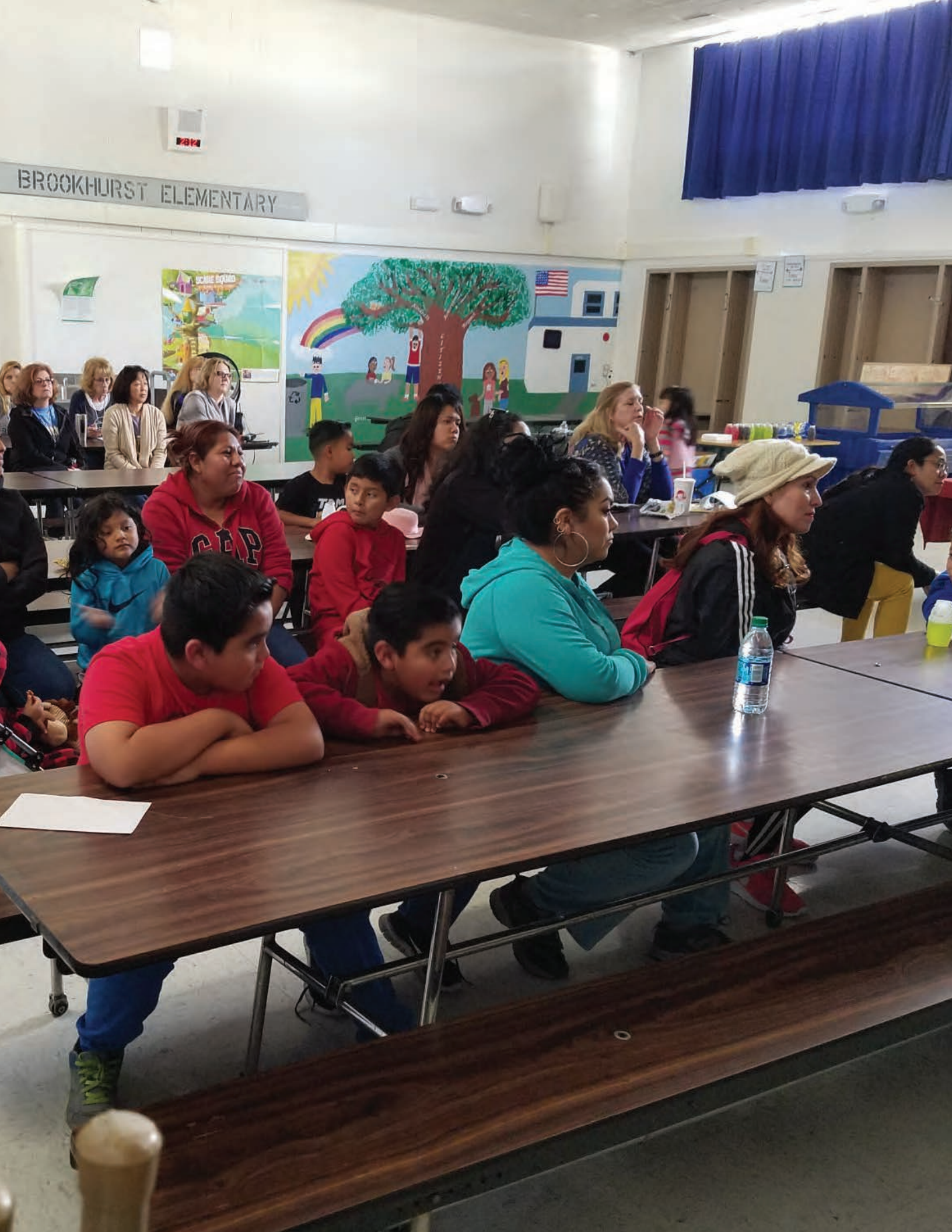


Figure 2-8: Map Of Children With No Access To Health Insurance

BROOKHURST ELEMENTARY



3. Community

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- 3.9 Coordination with Nearby Jurisdiction

3.1 INTRODUCTION

The Garden Grove community played a vital role in the development of this Plan. The community engagement process strove to fulfill two main purposes: 1) develop a Plan that reflects the needs of those that it serves, the Garden Grove Community, and 2) build relationships between key stakeholders that can implement the goals and objectives set forth in the Plan. The process involved the development of a project brand, six community workshops, one pop-up event, parent surveys, and ongoing coordination with nearby jurisdictions.

3.2 PROJECT BRANDING

Project branding is a useful tool for community outreach. Through the usage of a carefully selected set of color palette and the development of a unique logo, community members can easily associate the Project upon sight. The logo played an important role in unifying the community together towards the Project. The Project took place at six schools within the GGUSD district and the City of Garden Grove; the logo allows parents and community members from each school to understand that their participation in the community workshops at each school contributes to a greater purpose.

The Project Team also wanted to develop a project brand that can be useful for subsequent SRTS projects. As implied in the title of this Plan, Garden Grove Safe Routes to School: Phase 1 Master Plan, there could be multiple phases of the Garden Grove SRTS program. The development of a project brand for this first phase can assist future SRTS projects by unifying them under one already established and easily recognizable program.



Flyer distributed at schools.



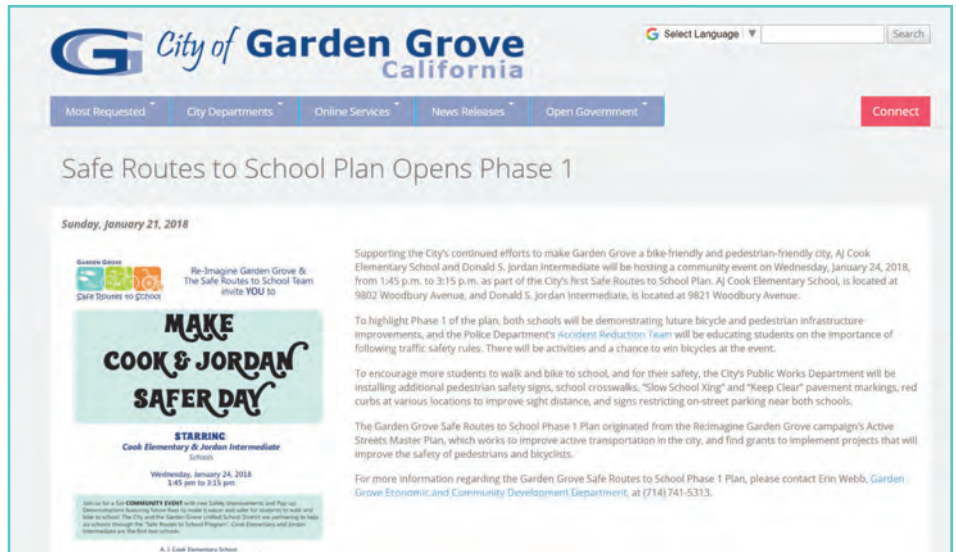
Flyer in Spanish and Vietnamese.

3.3 MARKETING & DISTRIBUTION

The Project Team explored and utilized many outreach methods to market the project and disseminate information to the community. Strong leadership from GGUSD and each school, aided with the assistance of the diligent administrative and teaching staff at the two entities, were instrumental in delivering paper flyers and electronic messages to parents. City staff promoted the Project through the City’s social media accounts. With the exception of one school, the Project Team conducted three on-site outreach events to promote each community workshop. The presence of the Project Team at the schools prior to each community workshop served as a reminder of the upcoming event, and reaffirmed the importance of it.



Poster mounted at a visible location at Brookhurst Elementary to inform parents and guardians about the upcoming event.



Project website.

3.4 COMMUNITY WORKSHOPS

As a part of the community engagement process, six community workshops were conducted to allow community members an opportunity to voice their comments and build relationships between key stakeholders. Community workshops were held between September 2017 and April 2018. More than 120 people attended the events.

At the events, city staff was available to provide instant feedback to any parents' concerns relating to the roadway and traffic operations, while GGUSD and/or school staff offered their expertise on considerations within the school boundaries. Furthermore, staff from the Orange County Health Care Agency (OCHCA) was present to assist in providing information on implementation of programs at each school.

Garden Grove's diverse demographic makeup ensured that each community workshop was unique in their own way. The first workshop was held at the Courtyard Center in conjunction with the Safe Routes to School National Partnership. This workshop served as the kick-off meeting for the series of community workshops. At the event, participants were introduced to the Project, the Project Team, and provided valuable feedback about areas that needed improvement.

Following the kick-off meeting, five community events were held for the six schools that took part in the Project. Given their close proximity to each other, the workshop for Cook Elementary and Jordan Intermediate was a joint event. At the community workshops, event participants discussed programs that they would be interested in having at their school. They also participated in a Walking Safety Assessment where they walked around the vicinity surrounding the school to identify areas of concerns and opportunities for improvement. Comments gathered from the events were incorporated into this Plan.

3.5 MAKE COOK AND JORDAN SAFER DAY

Garden Grove Safe Routes to School partnered with RE:IMAGINE Garden Grove to host Make Cook and Jordan Safer Day. RE:IMAGINE Garden Grove is a City-wide initiative aimed at creating public spaces through innovative and exciting experiences, while promoting a bike-friendly and

Did You Know?

A.J. Cook Elementary enrolled 368 students in the 2017-2018 school, and yet the project team received 238 Parent Surveys. This represents 65% of the school population.



pedestrian-friendly city. The event was held on January 22, 2018 on a sunny afternoon at A. J. Cook Elementary and Donald Jordan Intermediate. It showcased newly installed safety improvements, demonstrated potential infrastructure improvements, and kicked-off programming initiatives. The City and GGUSD implemented new traffic signs, pavement markings, pedestrian signal modifications, new red curbs, and school access improvements in response to comments received from the community workshop. The event featured pop-up demonstrations of new crosswalks and curb extensions for participants to experience the proposed infrastructure improvements prior to actual installation. Event attendees also had an opportunity to participate in a pedestrian rodeo to learn about pedestrian safety, forming walking school buses to walk to and from school from nearby destinations, and talked to police officers about police enforcement. Altogether, more than 150 people attended the event.

3.6 PARENT SURVEYS

The City distributed surveys in English, Spanish, and Vietnamese to parents and guardians at the six schools to afford them an additional opportunity to voice their concerns. In collaboration with GGUSD and school staff, the City distributed the “Parent Survey About Walking and Biking to School” form developed by the National Safe Routes to School Center to parents and guardians. The survey gathered information such as the distance from

a student's home to school, travel mode distribution, and parent perceptions regarding walking and biking to school. Collectively, the City received 1,161 surveys from this effort.

3.7 ARRIVAL AND DEPARTURE TALLIES

The City also collaborated with GGUSD, school staff, and students to collect travel mode data using the "Safe Routes to School Students Arrival and Departure Tally Sheet". The tally was conducted by teachers in classrooms at the six schools over the course of three consecutive days (Tuesday- Thursday) in a single week with the aim of understanding students' travel mode. Students participate in this activity by raising their hands to indicate the mode of travel they took to reach school that particular day. Altogether, the City collected 85 tallies across the six schools.

3.8 GEOGRAPHIC INFORMATION SYSTEM (GIS) WEB APPLICATION

The project team developed a project specific Geographic Information System (GIS) Web Application for community members who could not attend the meetings. The application allowed community members to send pictures and comments to a GIS-based website where their comments and observations were geocoded. The application was accessible through a web link and a QR code that was included in the flyers.

3.9 COORDINATION WITH NEARBY JURISDICTIONS

The Project required coordination with nearby jurisdictions such as the City of Santa Ana, Fountain Valley, and Westminster to ensure support for project recommendations. Roadways in front of and near schools such as Thomas Paine Elementary, John Murdy Elementary, and Merton Hill Elementary share a border with these cities. Engineering recommendations along these corridors will need the support of Garden Grove and each respective adjoining city. Additionally, program recommendations will impact the residents in these cities. Many students from Santa Ana, Fountain Valley, and Westminster attend Thomas Paine Elementary, John Murdy Elementary, and Merton Hill Elementary.





BLIND
PERSON
AREA

OTA

4. SRTS Toolkit

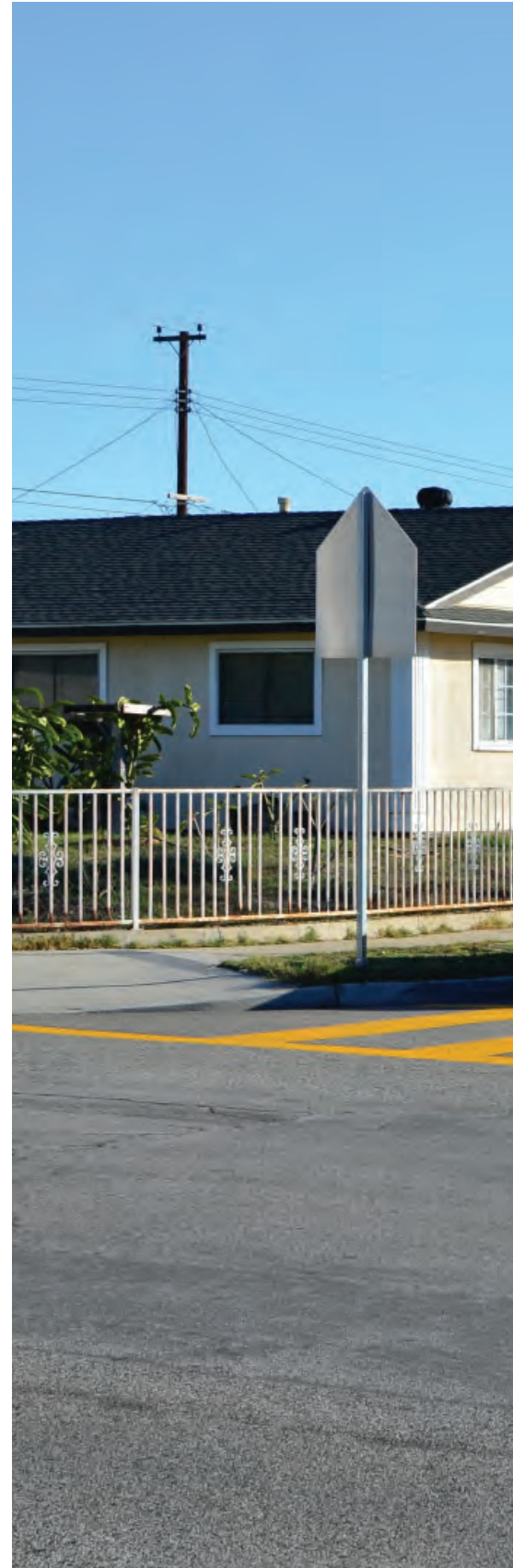
- 4.1 Introduction
- 4.2 Existing Conditions Analyses
- 4.3 School Zone Traffic Control Guide
- 4.4 Engineering Toolbox
- 4.5 Programming Toolbox

4.1 INTRODUCTION

The Safe Routes to School (SRTS) Toolkit presents a series of tools to assess the existing conditions at each school and explore potential improvements for each school. The Toolkit is comprised of four components:

1. Baseline Data Analyses
2. School Zone Traffic Control Guide
3. Engineering Toolbox
4. Programming Toolbox

These four components will be discussed in greater details in the upcoming sections.





4.2 EXISTING CONDITIONS ANALYSES

The first step towards a successful Safe Routes to School Plan is to understand the existing conditions at each school. In this Plan, the Project Team analyzed data from four categories to achieve this goal: demographic statistics, travel behavior, health and safety, and environment and infrastructure conditions. The analyses form the basis of establishing a set of baseline data that city officials, school staff, district staff or other stakeholders can perform evaluations to measure against in order to measure the success of the SRTS Plan.

Demographic Statistics

Demographic characteristics such as student enrollment, income, and student participation in free or reduced lunch provide a general understanding of the population that the SRTS program serves. Demographic statistics were drawn from 2016 American Community Survey, while student enrollment information was retrieved from California Department of Education. Since the purpose of the demographic characteristics is to give a general overview of the student population, data collected and analyzed do not count toward baseline performance metrics for future evaluations.

Health & Safety

One of the Project's goals is to improve health and safety. For this project, health and safety were measured in two ways: pedestrian and bicycle collisions and health risk indicators. Pedestrian and bicycle collisions were collected from the Transportation Injury Mapping System (TIMS) database to understand locations of where pedestrians and bicyclists have conflicts with motorists. Health risk indicators such as obesity and asthma rates help gauge the health of students attending each school. Health data was retrieved from the California Department of Education.

Travel Behavior

Prior to developing strategies that will promote more walking and biking, the Project Team must understand how people are getting to and from school. Two forms of surveys were conducted to assess student travel behavior: a parent survey and a student tally. The parent survey is a comprehensive document that is intended to capture an in-depth understanding of student travel behavior, along with the potential to shift their student to walk or bike more. Surveys were announced at the end of the community workshop, and were sent out to parents one to two weeks after the workshop at each school. The student tally strove to understand which mode of transportation students take on a typical day. GGUSD teachers provided their assistance on this effort.

Environment & Infrastructure

Analyses of the environment and existing infrastructure show physical locations that can benefit from engineering improvements. Field observations were conducted at each school to identify any pedestrian and bicycle infrastructure that did not adhere to the Manual on Uniform Traffic Control Devices (MUTCD) or Americans with Disabilities Act (ADA) standards, document the roadway condition, and observe pedestrians', bicyclists', and motorists' behaviors. To supplement field observations, the Project Team held Walking Safety Assessments (WSA) as part of the community events. At the WSA, event participants walked around the vicinity of each school, and identified issues of concerns to the team that can be addressed.



4.3 SCHOOL ZONE TRAFFIC CONTROL GUIDE

Pedestrian safety depends upon public understanding of accepted methods for efficient traffic control. This principle is especially important in the control of pedestrians, bicyclists, and vehicles in the vicinity of schools. Neither pedestrians on their way to or from school nor other road users can be expected to move safely in school areas unless they understand both the need for traffic controls and how these controls function for their benefit. A uniform approach to school area traffic controls assures the use of similar controls for similar situations, which promotes appropriate and uniform behavior on the part of motorists, pedestrians, and bicyclists.

The California Manual on Uniform Traffic Control Devices (CA-MUTCD), Part 7 sets forth basic principles and prescribes standards that shall be followed in the design, application, installation, and maintenance of all traffic control devices and other controls required for the special pedestrian conditions in school areas. This section of the Garden Grove SRTS Master Plan will provide an overview of these guidelines for markings and signage requirements that will be recommended for all six schools within their respective school zones and along designated school routes. The following icon-key sections help explain and denote the different types of traffic control devices that can be utilized in school zones and surrounding areas.



SIGNAGE

Road signs are used to provide regulations, warnings, and guidance information to road users. School signs help advise road users that they are approaching a school zone/crosswalk or whether there is a reduction in the posted speed limit.



MARKINGS

Markings have defined and important functions in a proper scheme of school area traffic control. Often, they are used to supplement the regulations or warnings provided by traffic signs, signals, or other devices. In other instances, they are used alone to produce the necessary traffic controls.





School Warning Signage

Assembly A (CA)

SW24-1
(CA)SW24-1



W16-5P



OR

W16-6P



- Shall be used on streets with prima facie 25 Miles Per Hour (MPH).
- Shall be posted adjacent to school grounds/ boundary.
- Posted up to 500 feet in advance of school boundary.
- Conventional size 36" X 48" unless otherwise determined by engineer.

Crosswalk Warning Signage

Assembly B (CA)



SW24-2(CA)

Assembly E (CA)



SR4-1

Shall be posted at uncontrolled yellow crosswalks adjacent to schools or crosswalks along school routes.

- Shall NOT be posted if crosswalk is controlled by STOP Sign, YIELD Sign, or Traffic Signal.
- Can be posted at white crosswalks.
- ASSEMBLY B: Conventional size 36" X 48" unless otherwise determined by engineer.
- ASSEMBLY E: Conventional size 90" x 24" unless otherwise determined by engineer.

School Speed Limit Signage

Assembly C (CA)

SR4-1 (CA)



- Shall be used on streets with speed limit prima facie 25 MPH and posted adjacent to school grounds/ boundary to indicate reduced speed.
- May be posted up to 500 feet in advance of school boundary.
- Conventional size 36" X 72" unless otherwise determined by engineer.

School Advance Warning Signage

Assembly D (CA)

SW24-3 (CA)



S1-1



W16-2aP



- Shall be posted on street in advance of a school crosswalk.
- Shall be used in advance of Assembly B, C or E.
- Conventional size 36" X 48" unless otherwise determined by engineer.



Crosswalk Markings



Traditional Parallel Line Crosswalk



High Visibility Crosswalk with Ladder Design

- Marked crosswalks adjacent to schools (within 600 feet) shall be yellow.
- If one leg of the crosswalk is yellow, then all shall be yellow.

Pavement Markings



- Shall be used in advance of all yellow school crosswalks.
- Shall NOT be used where the crosswalk is controlled by Stop, Yield or Traffic Signals.
- XING shall be placed at least 100 feet in advance of the school crosswalk.
- Shall be yellow.
- Installed in a single lane.
- May be used at remote locations along school routes, but pavement markings shall be white outside the school zones.

Figure 7B.1. School Area Signs
(2014 California MUTCD Chapter 7C)

4.4 ENGINEERING TOOLBOX

This section provides a set of engineering tools that can be employed to achieve the goals set forth in the City of Garden Grove Safe Routes to School Plan. Many guidelines and engineering design standards were considered when providing recommendations. These include, but are not limited to, Federal Highway Administration (FHWA), California Manual on Uniform Traffic Control Devices (CA MUTCD), and Caltrans Design Standards and Specifications. The icons below categorize the different recommendations types that can be chosen when selecting improvements from the Safe Routes to School Toolbox. These tools generally fall under three categories: Traffic Calming, Pedestrian, and Bicycle. Many of these improvements can be used in combination with others. Their use and intent are outlined below. Additionally, their relevance regarding this project is also highlighted on the following pages noting improvement benefits and considerations.



TRAFFIC CALMING

The purpose of traffic calming is to reduce the speed and volume of vehicle traffic to acceptable levels in order to reduce vehicle collisions, improve livability, and create a safer environment for students, bicyclists, and pedestrians. Recommended treatments depend on the context — including street type, vehicle traffic speed, and volume.



PEDESTRIAN

This set of tools focuses on enhancing pedestrian infrastructure. Providing and improving pedestrian facilities like sidewalks and crossing treatments can help create a more comfortable and safer experience for pedestrians. Dedicated pedestrian infrastructure helps to provide enhanced separation between vehicle traffic and student pedestrian traffic.



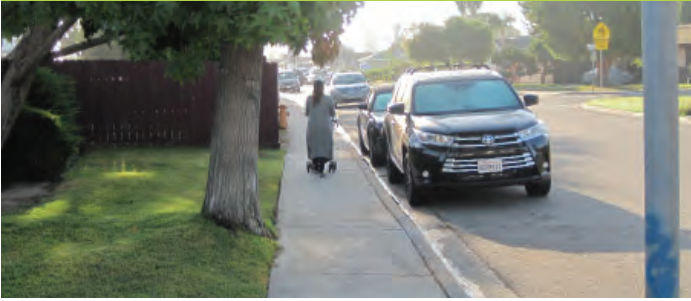
BICYCLE

Bicycle-related treatments in this toolbox include bikeway facilities, bicycle parking, amenities, signage, and intersection elements. While bikeway facilities can be classified into three categories—off-street, on-street, and shared street—these broad categories include more specific bikeway types. Recommended treatments depend on the context — including street type, vehicle traffic speed, and volume.





SIDEWALKS



Sidewalks provide dedicated space intended for use by pedestrians that is safe, comfortable, and accessible to all. Sidewalks are physically separated from the roadway by a curb or unpaved buffer space².

BENEFITS:

- Enhance connectivity and promote walking.
- Serve as the front steps to the city, activating streets socially and economically.
- Act as key corridors for people, goods, and commerce.
- Good pedestrian network connectivity and walkability can have a positive impact on land values.
- Can be maintained without replacement for 25 years or more (depending on context).

ADA CURB RAMPS



A curb ramp is a short ramp cutting through a curb or built up to it, designed and constructed to be accessible and to provide a route that people with disabilities can use to safely transition from a roadway to a curbed sidewalk and vice versa⁶.

BENEFITS:

- Without curb ramps, people who use wheelchairs and other mobility devices would not be able to independently access the sidewalk and street³.
- Allows accessibility to parents with strollers.

NOTE:

- Title II of the ADA requires state and local governments to make pedestrian crossings accessible to people with disabilities by providing curb ramps¹.

PEDESTRIAN REFUGE ISLANDS



A pedestrian refuge island reduces the pedestrian exposure time experienced in the intersection by providing a two-stage crossing process with a raised concrete island.

BENEFITS:

- Allow pedestrians to feel more safe and less exposed when entering the intersection³.
- Provides a midway physical barrier for crossings.

CONSIDERATIONS:

- Roadway would need to be able to accommodate the facility without impacting traffic flow.
- Length of the pedestrian crossing should warrant the facility.
- In uncontrolled mid-block crossing, would need to consider traffic control devices to complement it.



HIGH-VISIBILITY CROSSWALKS



High-visibility crosswalks provide a designated walkway for pedestrians to cross from one side of a street to the other³.

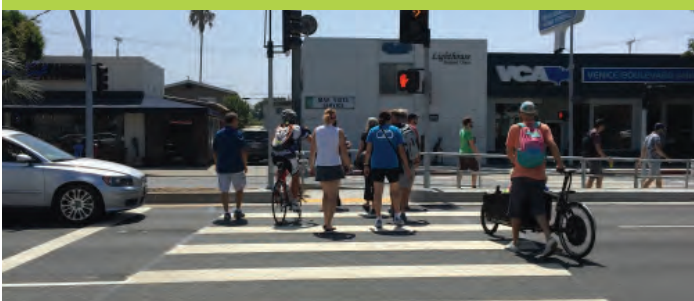
BENEFITS:

- More visible to approaching vehicles and have been shown to improve yield behavior³.
- Creates a more comfortable and safe crossing experience for pedestrians³.

CONSIDERATIONS:

- Overuse of implementation generally reduces effectiveness.
- Engineering judgment may be required to assess need.

MID-BLOCK CROSSINGS



Mid-block crosswalks facilitate crossings to places that people want to go but that are not well served by the existing traffic network³.

BENEFITS:

- Allow pedestrians to cross in the middle of a long block without walking all the way to a signalized intersection crosswalk.

CONSIDERATIONS:

- Pedestrian demand for the facility.
- May be supplemented with traffic control devices for optimal effect.

PUSH BUTTONS



Pedestrian push buttons are electronic buttons used by pedestrians to change traffic signal timing to accommodate pedestrian street crossings⁷.

BENEFITS:

- Activates the pedestrian phase of the traffic signal operation phase to provide pedestrians with sufficient time to cross a roadway.

CONSIDERATIONS:

- When used, they need to allow the appropriate time for pedestrian to cross the intersection.
- APS push buttons available which provide tactile arrows on the push button and sounds to alert the pedestrian of the activation of the pedestrian walk phase.



PEDESTRIAN SIGNAL HEADS



Pedestrian signal heads provide special types of traffic signal indications exclusively intended for facilitating pedestrian traffic - consisting of illuminated symbols of a walking person, upraised hand, and countdown timer⁸.

BENEFITS:

- Indicates to pedestrians when to cross, when not to cross, and how many seconds are left to cross.

CONSIDERATIONS:

- Need to have pedestrian push button to supplement it.
- Old signal heads should be upgraded to include a countdown timer.



CURB EXTENSION



Curb extensions visually and physically narrow the roadway, creating safer and shorter crossings for pedestrians while increasing the available space for street furniture, benches, plantings, and street trees.

BENEFITS:

- Increase the overall visibility of pedestrians³.
- Shortens pedestrian crossing distance³.
- Slows down motor vehicle speeds³.

CONSIDERATIONS:

- May require relocation of fire hydrants to maintain adequate curbside access in case of a fire.
- Additional consideration must be made when there are impacts on drainage.
- May result in loss of on-street parking.

CHICANES



Chicanes are offset curb extensions on residential or low volume downtown streets that slows traffic speeds³.

BENEFITS:

- Increase the amount of public space available on a corridor and can be activated using benches, bicycle parking, and other amenities³.

CONSIDERATIONS:

- May require relocation of fire hydrants to maintain adequate curbside access in case of a fire.
- Additional consideration must be made when there are impacts on drainage.
- May result in loss of on-street parking.

Rectangular Rapid Flashing Beacons (RRFBs)



Rectangular rapid flashing beacons (RRFBs), a type of active warning beacon, consist of two beacons which use a wig-wag flashing pattern to alert drivers to the presence of pedestrians in the road.

BENEFITS:

- Offers lower cost alternative to traffic signals and hybrid beacons.
- Increases driver yielding behavior at crossings when paired with standard crossing warning signs and markings.

CONSIDERATIONS:

- May also be used for priority bicycle route crossings.
- Usually implemented at high-volume pedestrian crossings.



SPEED FEEDBACK SIGNS



A dynamic message sign that uses radar or laser technology to determine the speed of an approaching vehicle and then displays the speed to the driver. If motorists are speeding, the sign flashes the exceeded speed along with 'SLOW DOWN' or 'YOUR SPEED'.

BENEFITS:

- Activates when drivers exceed posted speed limit by five miles per hour.
- Can be effective in reducing motorist speeds on wide roadways.

CONSIDERATIONS:

- A current speed survey is needed to determine the 85% speed for the roadway.
- Physical constraints include requiring a special type of pole, space for footing, and if the signs are not solar, a source of electricity.

ADVANCED YIELD LINES



Advanced yield lines are roadway markings that encourages drivers to slow down near a crosswalk.

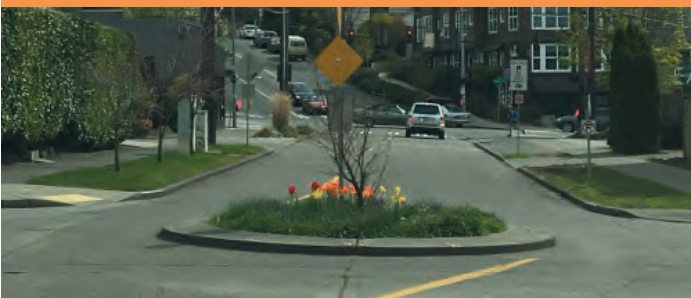
BENEFITS:

- Offer more visibility of pedestrians crossing the roadway.
- May reduce multiple-threat collision.

CONSIDERATIONS:

- Must be supplemented with a crosswalk that is 20-50' from the facility and R1-5 or R1-5a MUTCD signage.

TRAFFIC CIRCLE



Mini roundabouts and neighborhood traffic circles lower speeds at minor intersection crossings and are an ideal treatment for uncontrolled intersections³.

BENEFITS:

- Have been shown to increase safety at intersections³.
- Allows motorists and bicyclists to yield instead of making complete stops

CONSIDERATIONS:

- Careful attention should be paid to available lane width and turn radius³.
- May result in loss of on-street parking.



STRIPING



The use of centerline, edge line, and/or other psycho-perspective striping can be used to narrow vehicle travel lanes or create perceived visual barriers, which can reduce speed and increase driver awareness on local neighborhood roadways.

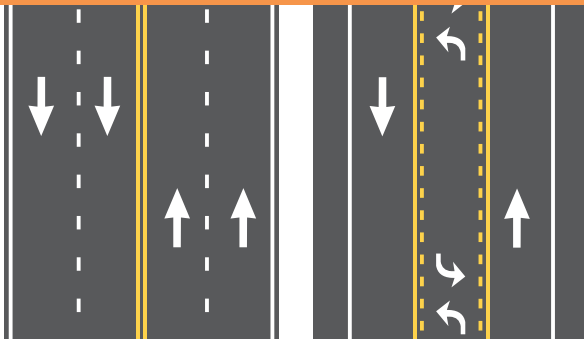
BENEFITS:

- Can be used to create bicycle lanes or delineate on-street parking (“Enhanced Shoulder”).
- Does not slow emergency vehicles.
- Improve separation/lateral offset between vehicles and pedestrians.

CONSIDERATIONS:

- Striping design consistency with CA-MUTCD standards shall be followed for driver understanding and protection from tort liability.
- Ideal implementation at roadways where curb to curb width is less than 40’ wide, and 85th percentile speed over 35 MPH.

LANE MANAGEMENT



Also known as roadway reconfiguration, lane management involves removing or narrowing motor vehicle lanes to accommodate parking and often times, the addition of bikeway facilities or transit stops. Lane management can transform a street that was formerly difficult for a bicyclist to travel. When bicycle lanes are striped, bicyclists are more visible and motorists know where to look for them.

BENEFITS:

- Reduces vehicle-to-vehicle conflicts.
- Improves safety by reducing vehicle operating speeds, decreasing crash severity of all users when they do occur¹⁰.
- Low-cost safety solution.

CONSIDERATIONS:

- Requires data analysis and engineering judgment to determine lane management applicability.
- Geometric and operational design features (e.g. turn lanes, traffic volumes, transit routes, etc.) should be carefully considered and applied during design reconfiguration.



OTHER TRAFFIC CALMING



Traffic calming features such as raised crosswalks, traffic diversions, and decorative crosswalks can be considered should the traffic calming features identified in the toolbox need additional support.

BENEFITS:

- Contingent on the specific traffic calming device, it can help calm traffic speed, improve pedestrian visibility, and/or make traveling along a corridor more difficult for motorists to travel through.

CLASS I: BIKE PATH



An off-street bikeway facility that is physically separated from any street or highway, commonly placed along roadsides such as waterways, utility corridors, flood control access roads, railroads, and the like that offer continuous separated riding opportunities.

BENEFITS:

- Provides a clear and designated path for bicyclists to use.
- Completely separated from roadways, serving both recreational and commuting purposes.

CONSIDERATIONS:

- May require right-of-way acquisition processes.
- More expensive than on-street bikeway.

CLASS II: BIKE LANE



A portion of roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

BENEFITS:

- Provides a designated portion of the street/roadway to bicyclists.
- Creates effect of reducing vehicle speed when vehicle lanes are narrowed.

CONSIDERATIONS:

- Bicyclists can still feel unsafe without any physical barrier between them and ongoing traffic.
- Minimum design width is 5 feet (against a curb).
- Bike lanes wider than minimum width is recommended to improve cyclist comfort.
- May create conflicts with parked vehicle doors.



CLASS II: BUFFERED BIKE LANE



An additional striped buffer that provides greater separation between bicyclists and vehicular traffic. Buffered bike lanes are recommended where roadway space allows.

BENEFITS:

- Provides a designated portion of the street/roadway to bicyclists.
- Buffered bike lanes can create a greater sense of safety compared to unbuffered bike lanes.

CONSIDERATIONS:

- Bicyclists can still feel unsafe without any physical barrier between them and ongoing traffic.
- Bicyclists can ride with the risk of being hit by car doors (“door zone”).

CLASS III: BIKE ROUTE & SHARED ROADWAY



Class III bikeways are designated roadways where bicycles and motor vehicles share a roadway. Design standards require specific signage, but additional enhancement can be provided by using shared roadway markings, or “sharrows”.

BENEFITS:

- Sharrows help indicate to motorists that the lane must and can be shared with bicyclists.

CONSIDERATIONS:

- Unexperienced bicyclists can feel pressured by faster driving motorists.
- Sharrows should not be used on streets with speed limits above 35 MPH.

CLASS III: BIKE BOULEVARD



A bicycle boulevard is a low-stress shared roadway Class III bicycle facility, designed to offer priority for bicyclists operating within a roadway shared with motor vehicle traffic².

BENEFITS:

- Increases comfort for bicyclists by reducing motorist speeds and volumes, if diversion is included.
- Connects residential roads to commercial corridors/community services.

CONSIDERATIONS:

- Diversion design often limits or restricts vehicle movements.
- The general expectation for bike boulevards includes high level features that may include beautification, traffic calming, and bicycle preferential treatments.

<http://www.bikelongbeach.org/>



CLASS IV: SEPARATED BIKEWAY/ CYCLE TRACK



A cycle track is a protected bikeway that includes a physical barrier between bicyclists and motor vehicle traffic. It combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane.

BENEFITS:

- Dedicates and protects space for bicyclists in order to improve perceived comfort and safety.
- Eliminates risk and fear of collisions with overtaking vehicles.

CONSIDERATIONS:

- Streets with high motor vehicle volumes and/or speeds.
- Consider transit stops to manage bicycle & pedestrian interactions.



SHORT-TERM BIKE PARKING



BIKE RACK - INVERTED U

Common style appropriate for many uses; two points of ground contact. Can be installed in series on rails to create a free-standing parking area in variable quantities.

Available in many variations.

BENEFITS:

- Supports bike upright without putting stress on wheels
- Accommodates a variety of bicycles and attachments
- Allows for locking of frame and at least one wheel
- Intuitive / user-friendly

CONSIDERATIONS:

- Site location should be visible from and close to the entrance of a destination



BIKE RACK - POST & RING

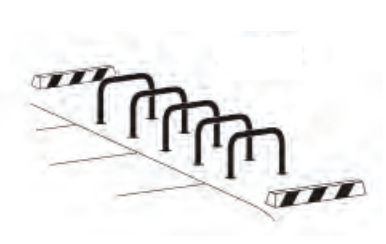
Common style appropriate for many uses; one point of ground contact. Compared to inverted-U racks, these are less prone to unintended perpendicular parking. Products exist for converting unused parking meter posts.

BENEFITS:

- Supports bike upright without putting stress on wheels
- Accommodates a variety of bicycles and attachments
- Allows for locking of frame and at least one wheel
- Intuitive / user-friendly

CONSIDERATIONS:

- Site location should be visible from and close to the entrance of a destination
- Bicycle more likely to tip over than with U-Rack.



BIKE CORRAL

Some cities with limited sidewalk space and strong bicycle activity place on-street "bike corrals" located in the street area adjacent to the curb. When replacing a single auto parking space, a corral can generally fit 8 to 12 bicycles.

BENEFITS:

- Supports bike upright without putting stress on wheels
- Allows for locking of frame and at least one wheel
- Intuitive / user-friendly
- Increases bicycle parking density in high-trafficked areas

CONSIDERATIONS:

- Can replace auto parking space(s), which can raise public opposition

Illustrations and language are part of the 'Essentials of Bike Parking', written and produced by the Association of Pedestrian and Bicycle Professionals (APBP)⁵.



LONG-TERM BIKE PARKING



BIKE LOCKERS

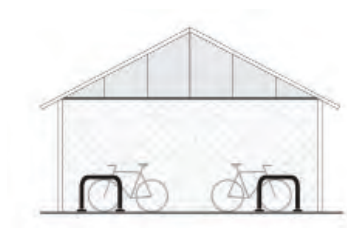
Bike lockers are covered storage units that typically accommodate one or two bicycles per locker, and provide additional security and protection from the elements. These are typically located at large employment centers, colleges, and transit stations.

BENEFITS:

- Offers extra security compared to standard bike racks
- Typically for bicycle storage lasting longer than two hours

CONSIDERATIONS:

- May require small user fee
- Only generally available at specific locations
- Maintenance and administration



BIKE STATIONS

Bicycle stations offer attended or automated long-term bicycle parking. Other services can also be available, such as bicycle repairs, sharing, rentals and retail sales.

BENEFITS:

- Provides a wide array of bicycle amenities to users
- Offers a comfortable and highly secure option for long-term parking

CONSIDERATIONS:

- Often requires membership
- Difficult to identify long-term revenue sources
- Annual operating cost = \$25,000 - \$150,000 (depending on facility size)

Illustrations and language are part of the 'Essentials of Bike Parking', written and produced by the Association of Pedestrian and Bicycle Professionals (APBP)⁵.

Cost Assumptions

Cost estimates are provided in each of the school chapters in this Plan for recommended infrastructure projects identified for each school area.

Unit costs for cost estimates are derived from KOA Corporation's extensive experience in providing engineering services to communities across Southern California.

Project costs are estimated to reflect actual cost of construction as accurately as possible. Cost assumptions include considerations for design, environmental, construction management, mobilization, and traffic control in order to provide as accurate of a cost for implementation as possible. While other project specific factors such as grading, acquisition costs, or landscaping may increase the actual cost of construction, an additional 15 percent contingency has been added to each project area to account for these factors that may arise during the design phase.

Works Cited

1. SANBAG Non-Motorized Transportation Plan (2015)
2. FHWA Small Town and Rural Multimodal Networks (December 2016)
3. NACTO Urban Design Bikeway Guide
4. LADOT Bike Program
5. Essentials of Bike Parking (APBP) (Sept 2016)
6. ADA Best Practices Tool Kit for State and Local Governments - Chapter 6
7. National Center for Safe Routes to School
8. MUTCD (CA)
9. San Francisco Better Streets
10. FHWA Safety Program - Road Diet Information Guide

4.5 PROGRAMMING TOOLBOX

Infrastructure improvements can be an effective means of improving roadway safety and comfort for pedestrians and bicyclists. However, to achieve the goals set forth in this Plan, programs that strive to change human behavior are needed to complement roadway control improvements. This section offers a set of programming strategies that are divided into 4 of the 6 E's of Safe Routes to School programming: Education, Encouragement, Enforcement, and Evaluation. The programming strategies discussed are all interconnected with the theme of Equity, often referred to as the sixth "E" in Safe Routes to School Programming.

This section begins with in-depth descriptions of three popular Safe Routes to School education and encouragement programs: Pedestrian and Bicycle Rodeos, Walking School Bus, and Walk and Roll to School Day. The section follows with additional programming strategies that the City, GGUSD, and/or individual schools can implement. Programming recommendations are primarily drawn from the Safe Routes to School Guide. For recommendations that are not part of the guide, the toolbox provides external references to refer to more information.



EDUCATION

Education can equip people with the knowledge, skills, and confidence to bike and walk to a desired destination. Through education strategies, community members can more effectively use the physical control improvements that were described in the previous section.



ENCOURAGEMENT

By investing in an encouragement strategy, the City, GGUSD, and/or individual schools can foster the community's interest towards active transportation trends. These can take place in the form of events, clubs, and activities that inspire walking, bicycling, or carpooling through fun activities or incentives.



EVALUATION

This plan evaluated baseline existing school area conditions which has served as the basis for many of the improvement recommendations. Continued program evaluation in the future will allow for progress monitoring of the impact that both programming and engineering improvements efforts have had on the City.



ENFORCEMENT

Enforcement efforts can be programmed to ensure that the community builds safe and responsible behaviors on the road, as well as, developing respect among all road users.





WALK AND ROLL TO SCHOOL DAY



What is a Walk and Roll to School Day?

Walk and Roll to School Days are organized events where students walk and bike to school. Upon arrival at the school, event organizers may have games and booths that encourage and educate students on walking and biking. Walk and Roll to School to School Days is a fun way to encourage walking and biking to school, and bring together communities and schools. The events can be coordinated to the specific needs of the community and can be simple or a large event.

Timeline for Walk and Roll Day

6-8 Weeks before event

Gather your team and set a date
Contact businesses and organizations for donations
Create a flyer
Create a paragraph for website, social media, and/or newsletter

4 Weeks before event

Recruit volunteers for your event
Inform staff of the event
Invite Fire/Police Departments to the event
Plan Walking School Buses and Activities

3 Weeks before event

Market your event
Create or obtain banners and/or posters to post around school site
Create "Walking School Bus" posters

2 Weeks before event

Hang banners and/or posters
Distribute copies of the flyer
Pick Up and Prepare/Organize donations/incentives

1 Week before event

Make sure your supplies and/or incentives are ready and/or organized
Send out reminders via email, call service, and/or social media

Day before event

Check in with your volunteers
Reminder announcement via loudspeaker

Day of event

Arrive 45 minutes to an hour before the event
HAVE FUN!!!!

After the event

Thank volunteers, participating businesses and organizations, and staff for participation



WALKING SCHOOL BUS

What is a Walking School Bus?

A walking school bus (WSB) is a safe and fun way for children to get physical activity as they travel to and from school with adult supervision. Each “bus” walks along a set route with one or more adults leading it, picking children up at designated stops along a predetermined route, and walking them to school. The process is reversed in the afternoons on the way home from school. It is that easy. You may find that families are already doing this with their children, and would be delighted to help more students get to school in this healthy, safe, and fun way!

SAFE ROUTES TO SCHOOL NATIONAL PARTNERSHIP

Start Your Walking School Bus

Step #1: Gather your team and create your plan. What program fits your team and school site?

Step #2: Choose the route. What is the safest route? Which route has the most students?

Step #3: Spread the word. Market your event to students, parents, community members, city and district officials, local businesses, and organizations.

Step #4: Get started. Take notes on the day of your event to create your own quick tip guide for your parent organization on site.

Step #5: Keep it Going. The more events you have the easier it will get.

Step #6: Evaluate your successes. Create a survey for leaders and students to add to your quick tip guide.

Resources

National Center for Safe Routes to School Training Modules:

http://apps.saferoutesinfo.org/training/walking_school_bus/modules.cfm

How to Start a Walking School Bus at Your School Toolkit by Safe Routes to School National Partnership:

<https://www.saferoutespartnership.org/resources/toolkit/step-step>





PEDESTRIAN AND BICYCLE RODEOS

What is a Pedestrian Rodeo?

A Pedestrian Rodeo is a low-cost safety event designed to engage and entertain children while providing safety skills and knowledge. This is a great first step in encouraging students to walk to and from school, and kicking-off your Safe Routes to School programming.

What is a Bicycle Rodeo?

A Bicycle Rodeo is an event with a specified course to help bicycle riders to build up their skills, to become better cyclists, and avoid typical crashes. It can be a large municipal event or a small neighborhood one, depending on your local support.

Organizing Your Rodeo

Bring Together Your Team! Your team can include local service organizations, parent-teacher associations, the traffic safety board, the health department, cycling clubs, law enforcement, and your neighbors.

Pick a Date and Location! Choose a location that is free of traffic, and has a flat, hard-surface. Plan the event in coordination with an existing scheduled event for maximum participation.

Spread the News! Send out your press releases, flyers, event pages and social media alerts.

Bring in Support! Contact your local businesses and organizations to support your efforts with in-kind donations and financial support.

Design your Layout! Lay out your rodeo; create your materials list; assign and train your volunteers; send out your permission slips

Go For It and Have Fun!





Pedestrian Rodeo Safety Station Ideas

- » Rules of the Road
- » Signs, Signs, Everywhere are Signs
- » Blind Spots
- » Stray Pets
- » Strangers & the Dangers
- » Stop! Look Left, Right, Left Again, Forward & Back

Bicycle Rodeo Safety Station Ideas

- » Bicycle Safety Check
- » Bike and Helmet Fitting
- » Starts and Stops
- » Scanning
- » Driveways and Intersections
- » Rules of the Road
- » Running the Course

Available Resources

Orange County Bicycle Coalition: A bicycle advocacy group that promotes bicycling as an everyday means of transportation and recreation, and advocates for cyclists and safety. www.ocbike.org

VeloViet Cycling Team: A non-profit club for cyclist enthusiasts of all levels. The team emphasizes promoting fun and safety on the bicycle. www.veloviet.com

O. C. Health Care Agency, Public Health: A department of the County of Orange that helps provide support and resources for Walking School Bus programs and more. www.ochealthinfo.com/w2s

An Organizer's Guide to Bicycle Rodeos, Cornell Bike: A guide to running a successful bicycle skills event for children. www.bike.cornell.edu/pdfs/Bike_Rodeo_404.2.pdf

The Orange County Wheelmen (OCW): The oldest bicycle club in Orange County with over 500 members. www.ocwheelmen.org

The Bicycle Tree: A volunteer-powered nonprofit working together to make Orange County a better place to be a bicyclist. www.thebicycletree.org



ENCOURAGEMENT

INTERNATIONAL WALK TO SCHOOL DAY

International Walk to School Day is an annual event held every year in October to celebrate walking and biking to school. The event began in 1997 in the United States, and has since expanded beyond the country's borders. The goal of the event is to encourage students to walk and bike to school. However, while the event goal is the same, there is no exact prescription on the type of event programs that need to occur. The event can be as simple or complex as event organizers like it to be.

<http://www.walkbiketoschool.org/>

WEEKLY WALK-TO-SCHOOL PROGRAM

The Weekly Walk-to-School Program encourages students to walk to and from school by providing them with small incentives. It can be a low-cost program; however, it does require PTA/PTO members, or parents to assist with program administration.

<http://www.actionforhealthykids.org/game-on/find-challenges/gymnasium-challenges/1221-walking-programs>

SAFETY EDUCATION ASSEMBLY

Safety education assembly program is both an encouragement and education strategy. There is a multitude of themes and activities that are available. The assembly can be as complex as inviting a police officer to discuss pedestrian and bicycle safety or engaging students in a simple yet fun activity of singing to safety songs.

DROP-OFF POINT PROGRAM

The Drop-Off Point Program would develop areas located near the vicinity of the school for parent/guardians to drop-off/ pick-up students. It allows students who live further away to walk/bike to schools, and eases traffic congestion at school drop-off zones.

BICYCLE TRAIN

A bicycle train is similar to a walking school bus where students meet at designated locations on a predetermined timetable. Instead of walking, however, students bike to school together. A bicycle train allows students living further away to participate in active transportation activities since students can travel further on their bicycle (as opposed to walking).

DROP-OFF VALET PROGRAM

The Drop-Off Valet Program also known as Assistants to Help Students In and Out of Vehicles Program involves volunteers helping students to quickly exit their parent/ guardian's vehicles. This program would work in coordination with SRTS efforts to define a drop-off zone for vehicles, and improve traffic flow. This in turn would provide vehicles with better visibility for pedestrians and bicyclists. This program is often used in coordination with SRTS efforts to calm pick-up and drop-off zones and provide more efficiency to the process.

GOLDEN SNEAKER WALKING CONTEST

The Golden Sneaker Walking Contest is a friendly competition between classrooms where students in a classroom compete to win a Golden Sneaker trophy (or other prizes). Each class will strive to have as many students walking and/or biking to and from school. At the end of the competition, the class that has the most participants wins the Golden Sneaker award or other prizes.



EDUCATION

PEDESTRIAN/ BICYCLE SAFETY SKILLS PROGRAM

The program involves teaching students how to safely cross the street and operate a bicycle. It can be two separate programs, focusing on pedestrian or bicycle trainings. It consists of both a sit-down discussion, as well as hands-on training where participants can apply their knowledge on the road. A certified instructor may be required; however, there are many programs available that offer free bicycle safety trainings.

EDUCATION CAMPAIGN

The safety education campaign seeks to educate motorists on the rights of pedestrians and bicyclists, and to educate pedestrians and bicyclists on safe behavior. The campaign could include messages on street banners related to speeding and yielding to pedestrians in crosswalks, or printed on maps, posters, bumper stickers, etc..



ENFORCEMENT

PROGRESSIVE TICKETING PROGRAM

The Progressive Ticketing Campaign utilizes a three-step process to enforce traffic behavior around the school. The first step involves raising awareness about unsafe traffic behaviors. It is followed by giving the public advance notifications about step three: ticketing to encourage them to adhere to traffic laws. After a brief period of time, enforcement officers can begin issuing citations to people who violate the law.

STUDENT SAFETY PATROL PROGRAM

The Parking Lot Patrol program involves a collaboration between students, parent volunteers, and school staff to patrol the parking lot/ drop-off or pick-up zone by engaging in a variety of activities that provide a safer and more comfortable experience for pedestrians and bicyclists. These activities may include assisting students to safely cross a roadway, and/or monitoring traffic behavior.



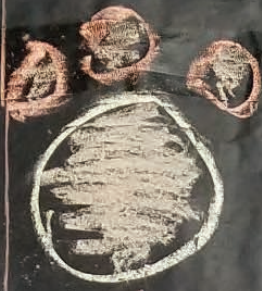
EVALUATION

PARENT SURVEYS

Parent Surveys can be a cost-effective way to gather feedback on the effectiveness of programs and infrastructural improvements recommended in this Plan. Parent surveys collected for this project established baseline needs and issues surrounding the schools. The City, GGUSD, or individual schools can follow up with parents through surveys to periodically evaluate the effectiveness of this Plan.

STUDENT TRAVEL TALLY

Teachers and school administrators can aid in administrating the Student Travel Tally to gauge students' travel mode. In-class travel tallies were conducted for this Plan to understand how students arrive to and depart from the school; additional tallies in the future will offer insights towards evaluating the effectiveness of the strategies identified in the Plan.



STOP

We're Just Kids

Don't HURTI

Us Please

Watch Out!

-A.J Cook
School



5. A.J. Cook

Elementary

- 5.1 Introduction
- 5.2 Existing Conditions
- 5.3 Existing Infrastructure
- 5.4 Observed Behaviors
- 5.5 Community Engagement
- 5.6 Programming Recommendations
- 5.7 Infrastructure Recommendations
- 5.8 Infrastructure Recommendation Details

5.1 INTRODUCTION

A.J. Cook Elementary is located on 9802 Woodbury Avenue in the southern portion of Garden Grove near the intersection of Brookhurst Street and State Route 22. Nested in a quiet residential neighborhood, A.J. Cook Elementary is within walking distance to many local destinations. Donald S. Jordan Intermediate School is located immediately adjacent to the school, while Bolsa Grande High School is situated at the western terminus of Woodbury Avenue. A strip mall with a Target, Shun Fat Supermarket, and Saigon’s Bakery is located to the east of the school. Other nearby points of interest include Mall of Fortune, Garden Grove Plaza, and Garden Grove Park and Dog Park.

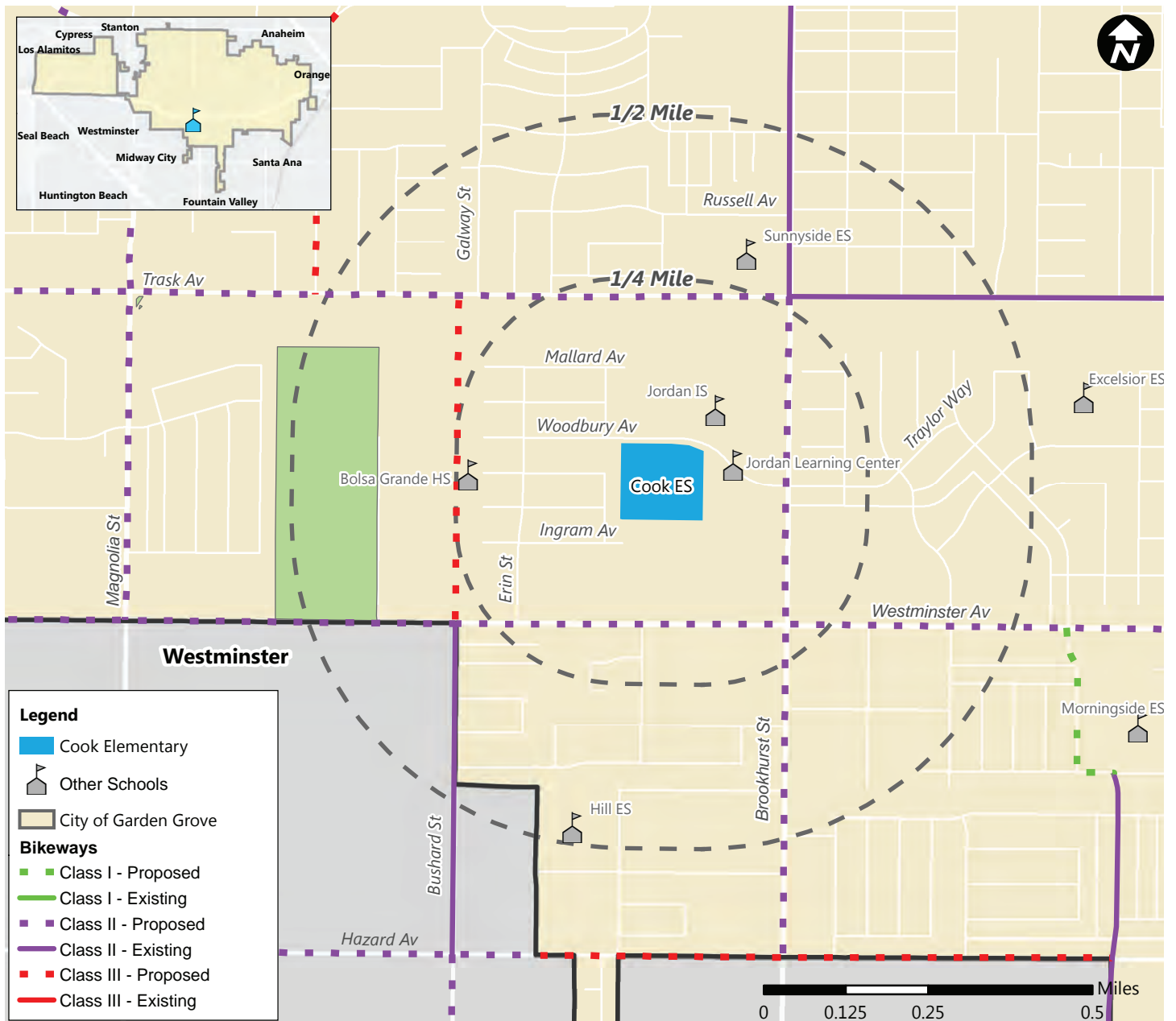


Figure 5-1: Map of School Location

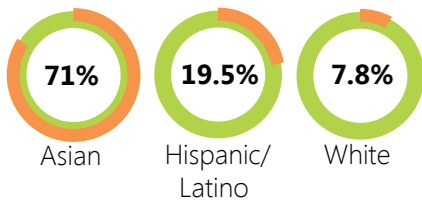
A.J. Cook Elementary School

School Snapshot

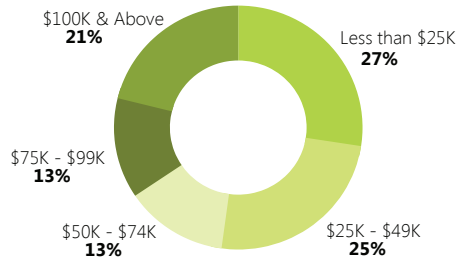
A.J. Cook Elementary enrolled **368 students** in the 2017-2018 school year. Of these students, **13%** currently walk and bike to school, while **80.7%** of students are driven to school.

COMMUNITY CHARACTERISTICS

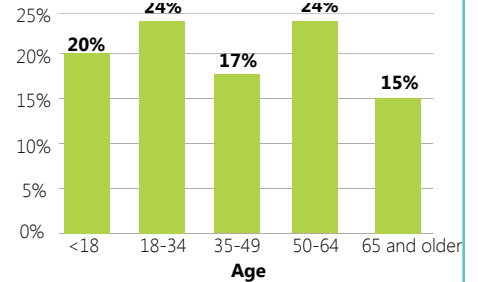
Race



Median Household Income

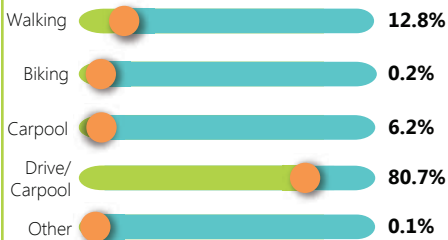


Age

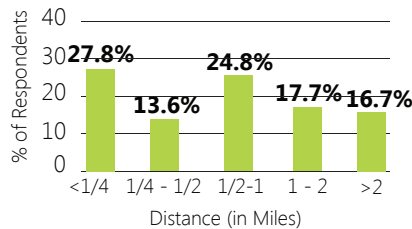


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



Input from the Community

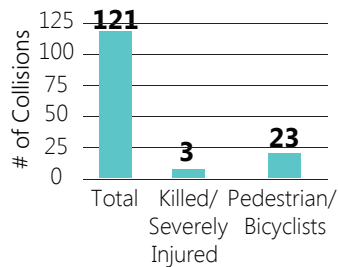
"Too much traffic before and after school along Woodbury Ave."

"The only thing I fear of having my children walk without an adult is kidnapping/harassment/assault."

"Need one more traffic light and put more lights on campus."

SAFETY

Transportation Collisions within 1/4 Mile Radius



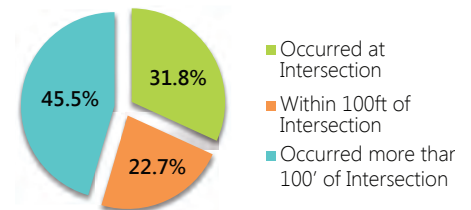
High Collision Roadways

- 1 Westminster Avenue (13)
- 2 Brookhurst Street (4)
- 3 Erin Street (3)

High Collision Intersections

- 1 Westminster Avenue & Brookhurst Street (9)
- 2 Westminster Avenue & Kerry Street (3)

Collision Locations



5.2 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near A. J. Cook Elementary. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children's access to health care, and communities' exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

Race

	0.25 Mile
White	7.80%
African American or Black	0.40%
American Indian or Native Alaskan	1.10%
Asian	70.80%
Native Hawaiian or Pacific Islander	0.20%
Other	0.00%
Two or More	0.20%
Hispanic or Latino	19.50%

Median Household Income

	0.25 Mile
MHHI less than \$25,000	27.40%
MHHI \$25,000 - \$49,999	24.70%
MHHI \$50,000 - \$74,999	13.40%
MHHI \$75,000 - \$99,999	13.30%
MHHI \$100,000 - \$149,999	14.50%
MHHI \$150,000 or More	6.60%

Age

	0.25 Mile
Population under 18	20.40%
Age 18 - 34	23.70%
Age 35 - 49	17.20%
Age 50 - 64	23.40%
Age 65 or Older	15.30%

Language Capabilities

	0.25 Mile
English Only Households	17.50%
Spanish Speaking Households	14.00%
Limited English Speaking Households	25.70%

Collision Type

	#	0.25 Mile
Pedestrian	9	7.40%
Bicycle	14	11.60%
Total Collisions	121	100.00%
Total Bicycle and Pedestrian	23	19.00%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	1	11.10%
Severely Injured	1	11.10%
Injury (Visible)	4	44.40%
Injury (Complaint of Pain)	3	33.30%
All Injured	8	91.30%
Property Damage Only	0	0.00%

Bicycle Injury Status

	#	0.25 Mile
Fatal	1	8.70%
Severely Injured	0	4.30%
Injury (Visible)	5	39.10%
Injury (Complaint of Pain)	8	47.80%
All Injured	13	91.30%
Property Damage Only	0	0.00%

Health and Environmental Factors

	0.25 Mile
Asthma	20th percentile
Cardiovascular Disease	28th percentile
Ozone	53rd percentile
PM 2.5	66th percentile
Diesel PM	53rd percentile
Traffic Density	87th percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile surrounding Cook Elementary, 121 injury collisions occurred between 2013 and 2017. Of those collisions, 19% involved a pedestrian or bicyclist. Approximately half of the pedestrian and bicycle collisions resulted in victims with complaint of pain, while 39% resulted in visible injuries, and another 9% resulted in a fatality. The primary collision factor for collisions involving a bicyclist was the bicyclist riding on the wrong side of the road. Meanwhile, more than half of all pedestrian collisions involved a pedestrian violation.

*Data retrieved from TIMS 2013-2017

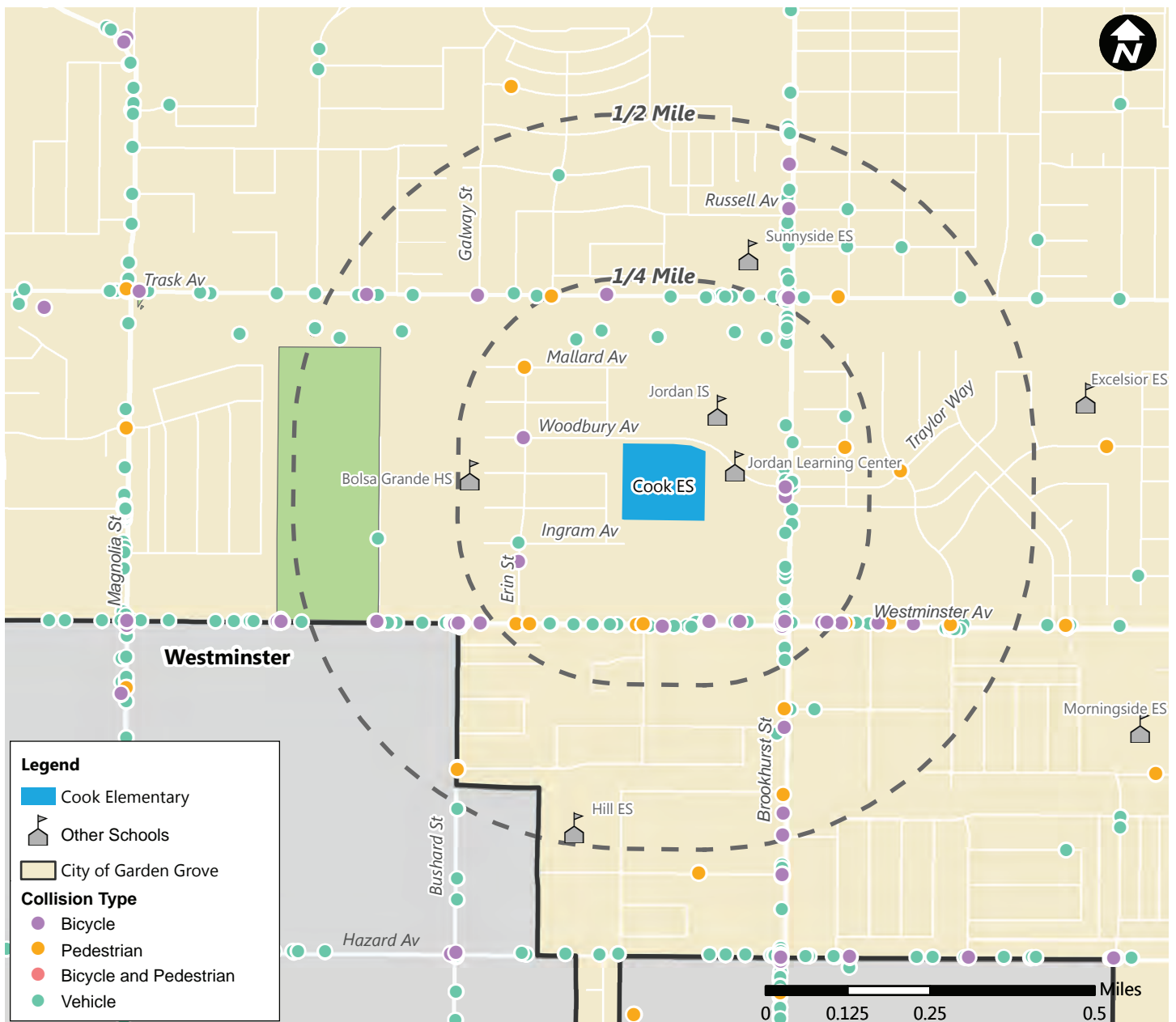


Figure 5-2: Map of Bike and Pedestrian Collisions within a 1/4 and 1/2 Mile of Cook Elementary.

Median Household Income

Over 50% of households within a ¼ mile of Cook Elementary have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$37,531- well below the statewide median household income of \$63,783, the county wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026.

*Data retrieved from American Community Survey 2016 Estimates

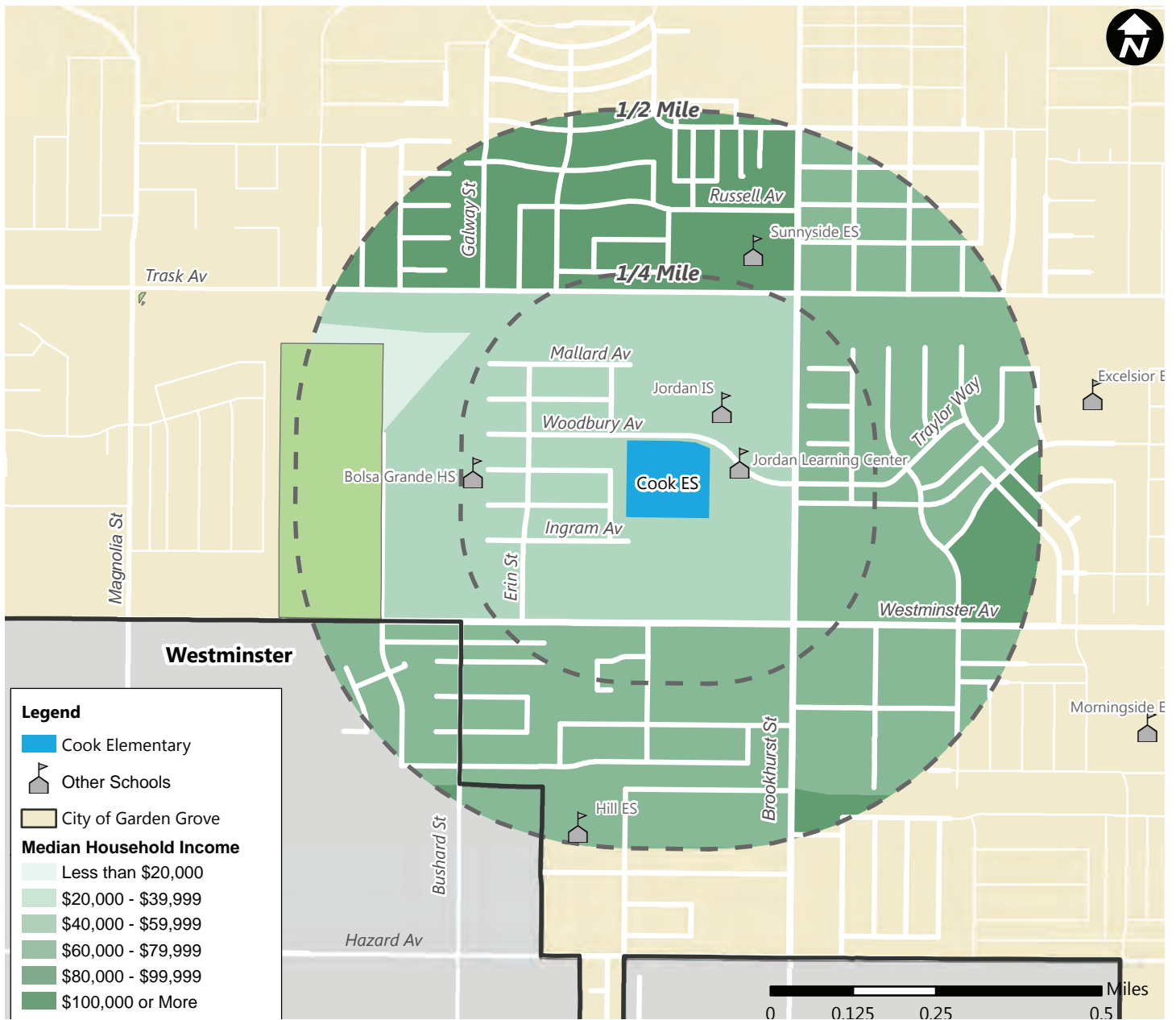


Figure 5-3: Map of Median Household Income

Population Younger Than 18 Years Old

Approximately 1 in 5 (20.4%) residents living in the ¼ mile area surrounding Cook Elementary are under the age of 18. This rate is just under the citywide population share of 23.1%. Within a ½ mile area, some Census Block Groups have a rate as high as 30%.

*Data retrieved from American Community Survey 2016 Estimates

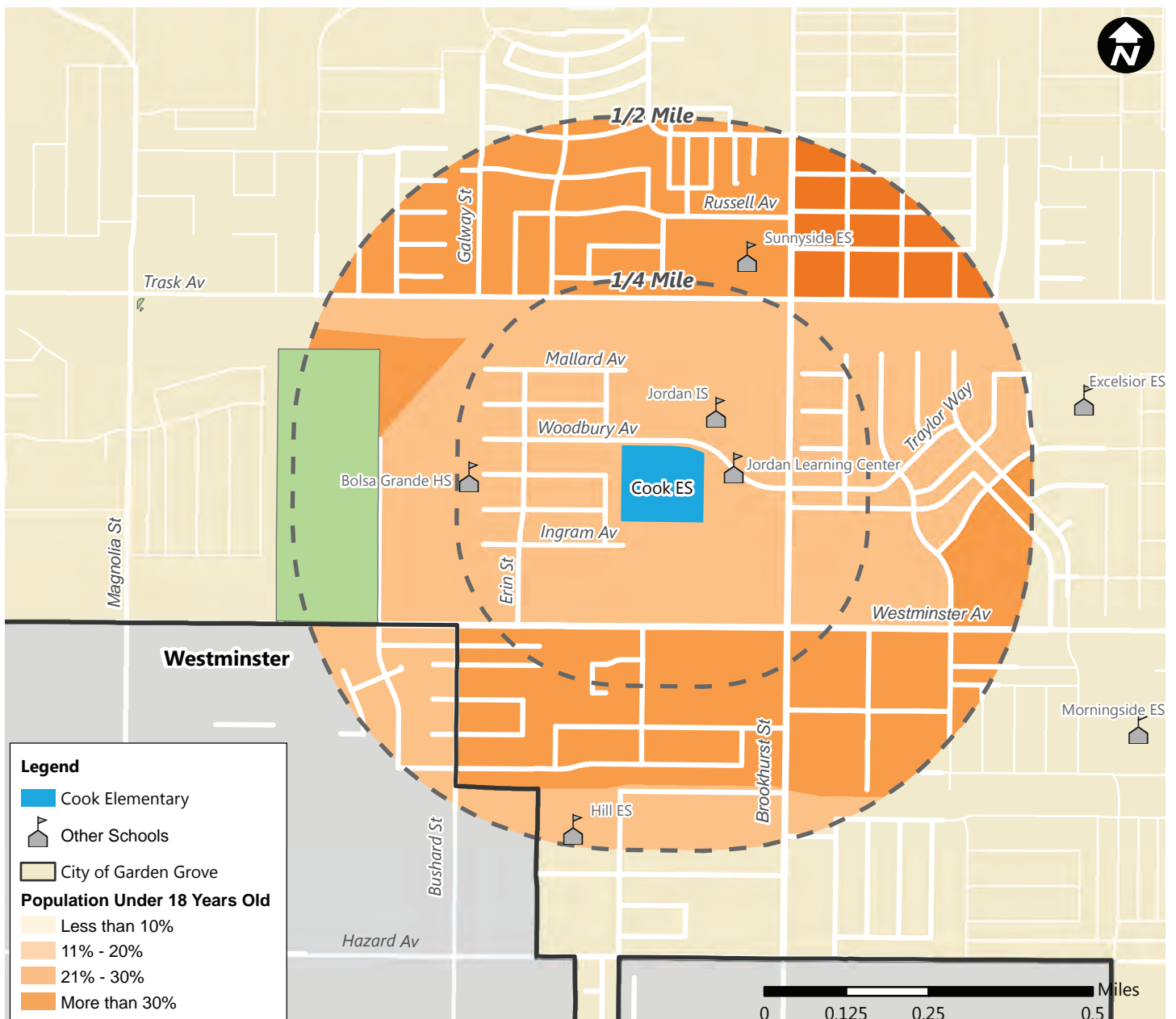


Figure 5-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Cook Elementary has a high rate of Asian and Hispanic residents. According to the 2016 American Community Survey, approximately 70 % of households within a ¼ mile of the school are of Asian descent and nearly 20% of households are of Hispanic of Latino descent. The high level of households that has limited English capabilities correlates to these demographic statistics.

*Data retrieved from American Community Survey 2016 Estimates

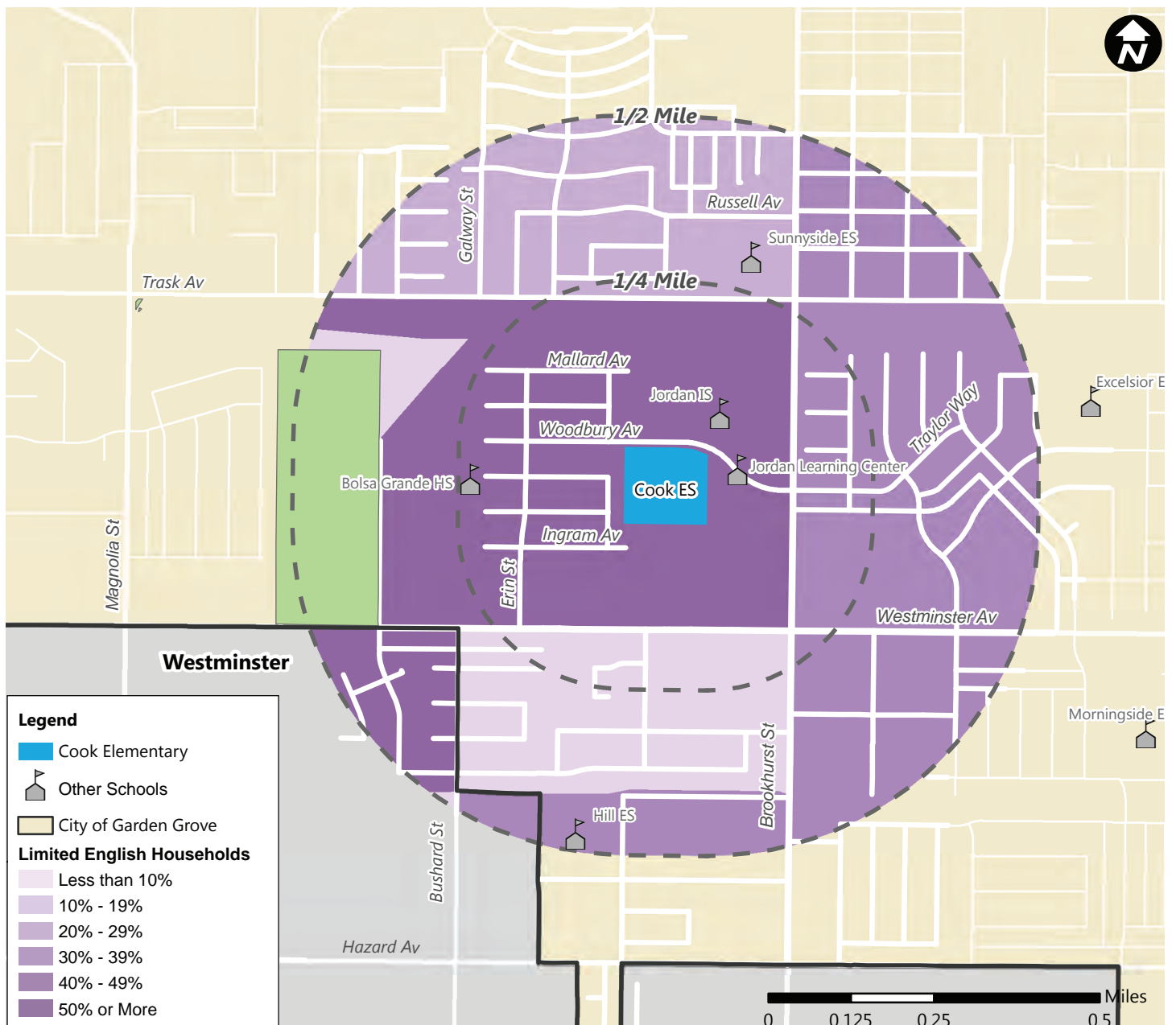


Figure 5-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding Cook Elementary are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the school all rank below the 60th percentile of all census tracts in California.

*Data retrieved from CalEnviroScreen 3.0

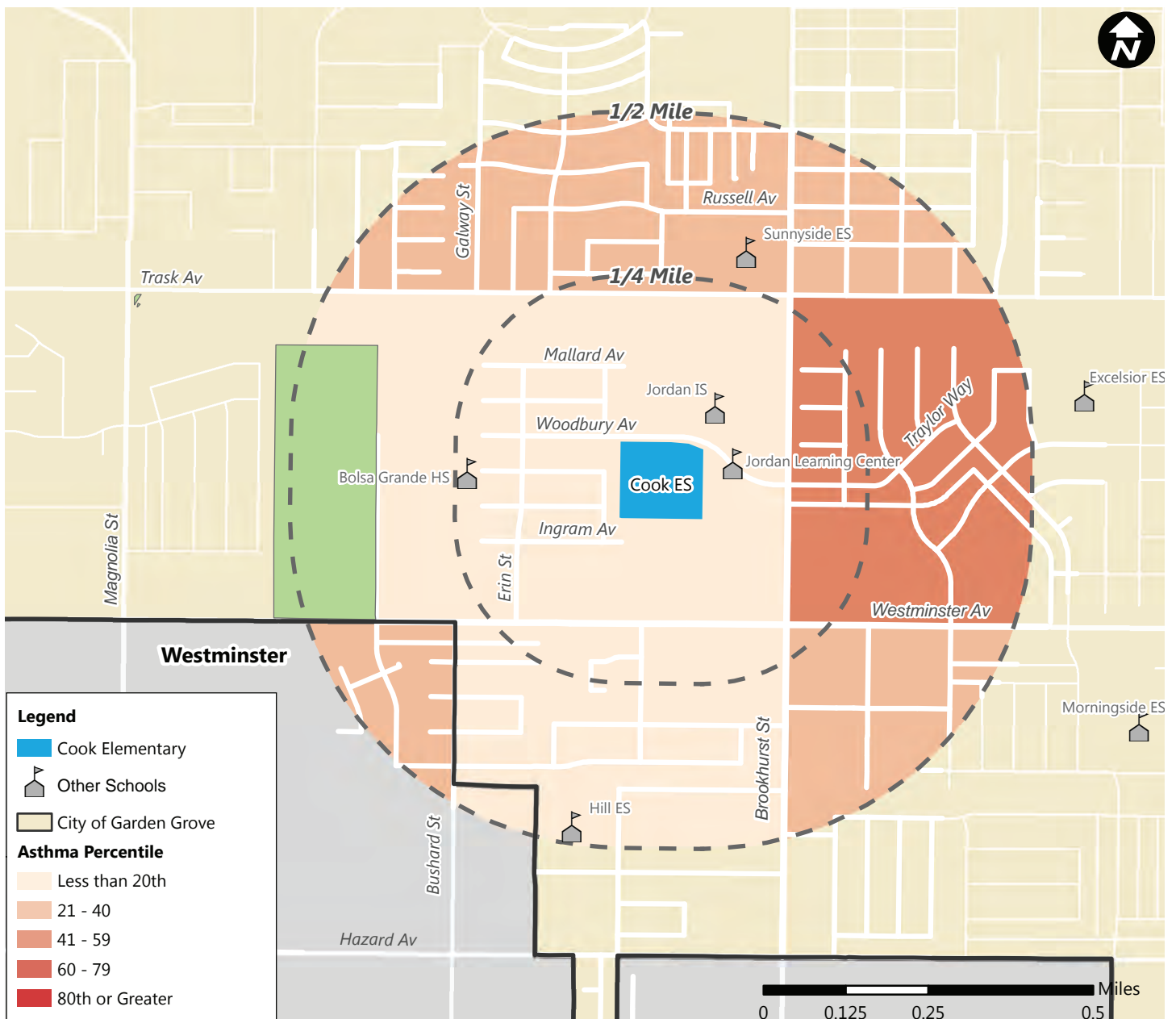


Figure 5-6: Map of Population With Asthma

Households With Cardiovascular Disease

The rates of Cardiovascular Disease-related hospital visits surrounding Cook Elementary are generally higher than most areas in California. According to CalEnviroScreen 3.0, multiple census tracts surrounding the school are ranked above the 60th percentile compared to census tracts in California. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood.

*Data retrieved from CalEnviroScreen 3.0

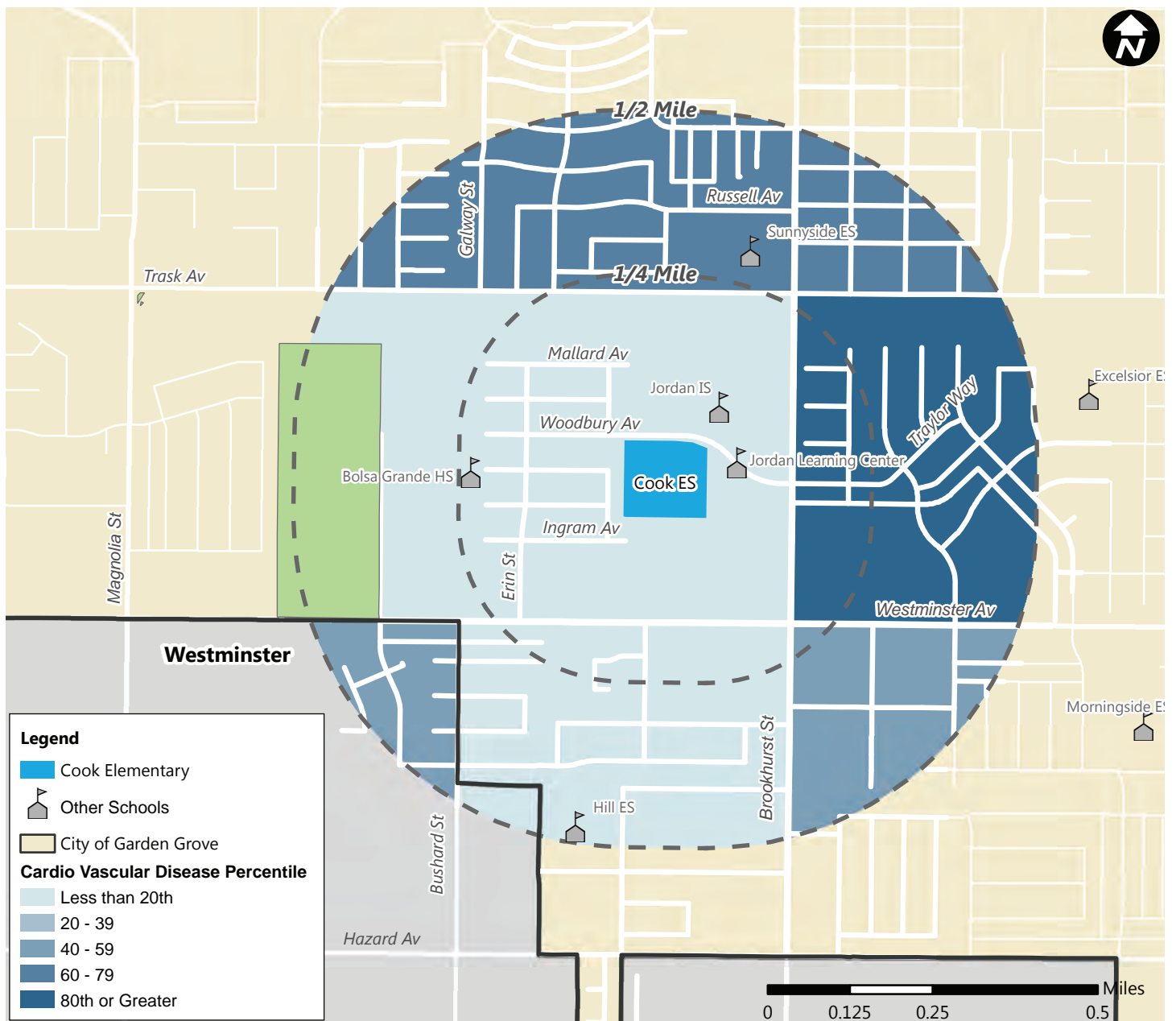


Figure 5-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. However, some census tracts surrounding Cook Elementary have a rate of children with no access to health care above 10%.

*Data retrieved from CalEnviroScreen 3.0

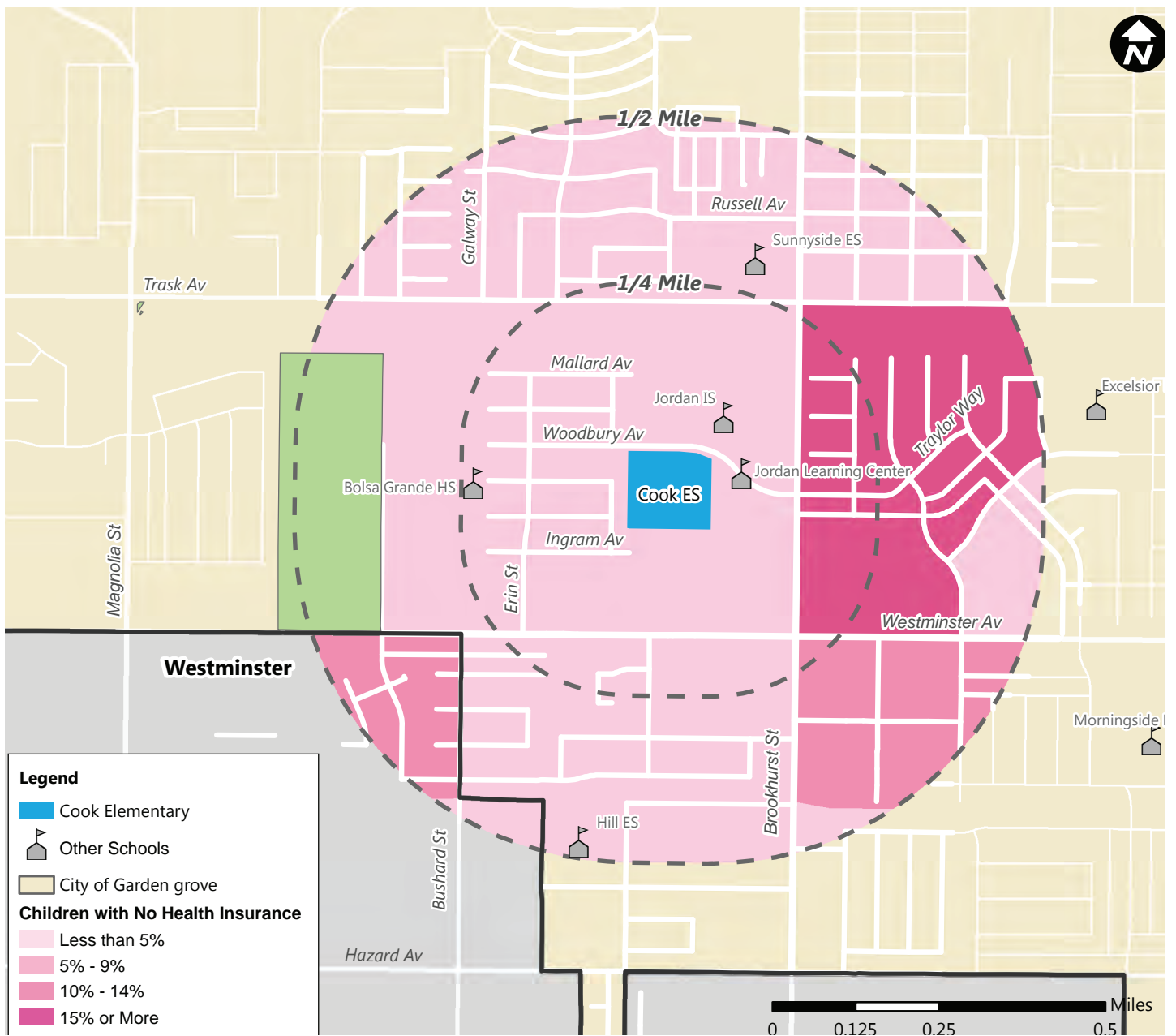


Figure 5-8: Map Of Children With No Access To Health Insurance

5.3 EXISTING INFRASTRUCTURE



Existing curb ramps at the intersection of Erin Street and Woodbury Avenue.



Students crossing Woodbury Avenue mid-block.



Missing ADA-compliant curb ramps along Erin Street.



Uneven sidewalk on Woodbury Avenue and various other locations throughout the neighborhood streets.



No school warning signs installed along Woodbury Avenue.



Fading school pavement markings on Woodbury Avenue.



Traffic signal with mid-block crossing immediately in front of Cook Elementary.



High visibility crosswalk on top of cracked pavement.

5.4 OBSERVED BEHAVIORS

The following presents a list of infrastructure concerns and behavioral issues that were observed at A.J. Cook Elementary.

Cook Drop-Off Zone Loop Area

- Motorists run the red light.
- They also don't stop at the stop bar.
- Motorists exiting the drop-off zone cause traffic to further back up.
- No traffic signage with existing stop bar pavement markings.

Brookhurst Street and Woodbury Avenue

- Vehicles parked along the south side of Woodbury Avenue at the intersection approach, blocking vehicles from making right-turns.
- Long vehicle queue along Woodbury Avenue for the eastbound left-turn movement.
- Motorists along Woodbury Avenue at the eastbound approach block the driveway entrance to the Target parking lot.

Woodbury Avenue and Cork Street

- Uncontrolled 3-way intersection.
- Motorists observed traveling at speeds higher than posted speed limit along Woodbury Avenue failed to notice pedestrians crossing the roadway.
- High visibility crosswalks are present, however they are painted on cracked road surface.
- Some curb ramps are present but many intersections are missing curb ramps.
- Parked vehicles on south side of Woodbury Avenue presents a visibility concern for pedestrians crossing the roadway.

Woodbury Avenue and Erin Street

- Stop controlled on Erin St.
- No marked crosswalks.
- High levels of cut through traffic to reach Bolsa Grande High School.
- Elementary, Intermediate, and High School students crossing at this intersection.

Woodbury Avenue and Teal Avenue

- High school students cross at this intersection and cross mid-block along segment of Erin Street between Teal Avenue and Woodbury Avenue.

Woodbury Avenue

- Motorists traveling at higher speeds than posted speed limit.
- No school signage along entire roadway, except at Woodbury Street and Cork Street crosswalks.
- Some pedestrians crossing the roadway between intersections.
- Vehicle/pedestrian conflicts at Cook's parking lot exit driveway.
- Motorist making U-turns along the roadway.

Erin Street

- Motorists observed to be traveling at higher speeds than posted speed limit.
- Intersections along Erin Street are uncontrolled.
- Some intersections provide no curb ramps.



5.5 COMMUNITY ENGAGEMENT

The City strove to identify infrastructure improvements that not only responded to the community's needs and address their concerns, but were also feasible within engineering limitations. To gather community input, the City conducted Walking Safety Assessments (WSA), collected Parent Surveys, and worked with teachers to collect Student Travel Tallies in classrooms. The City also collaborated with A.J. Cook Elementary School staff and Garden Grove Unified School District staff to market the project to the Cook Elementary School community, nearby businesses, and local organizations.

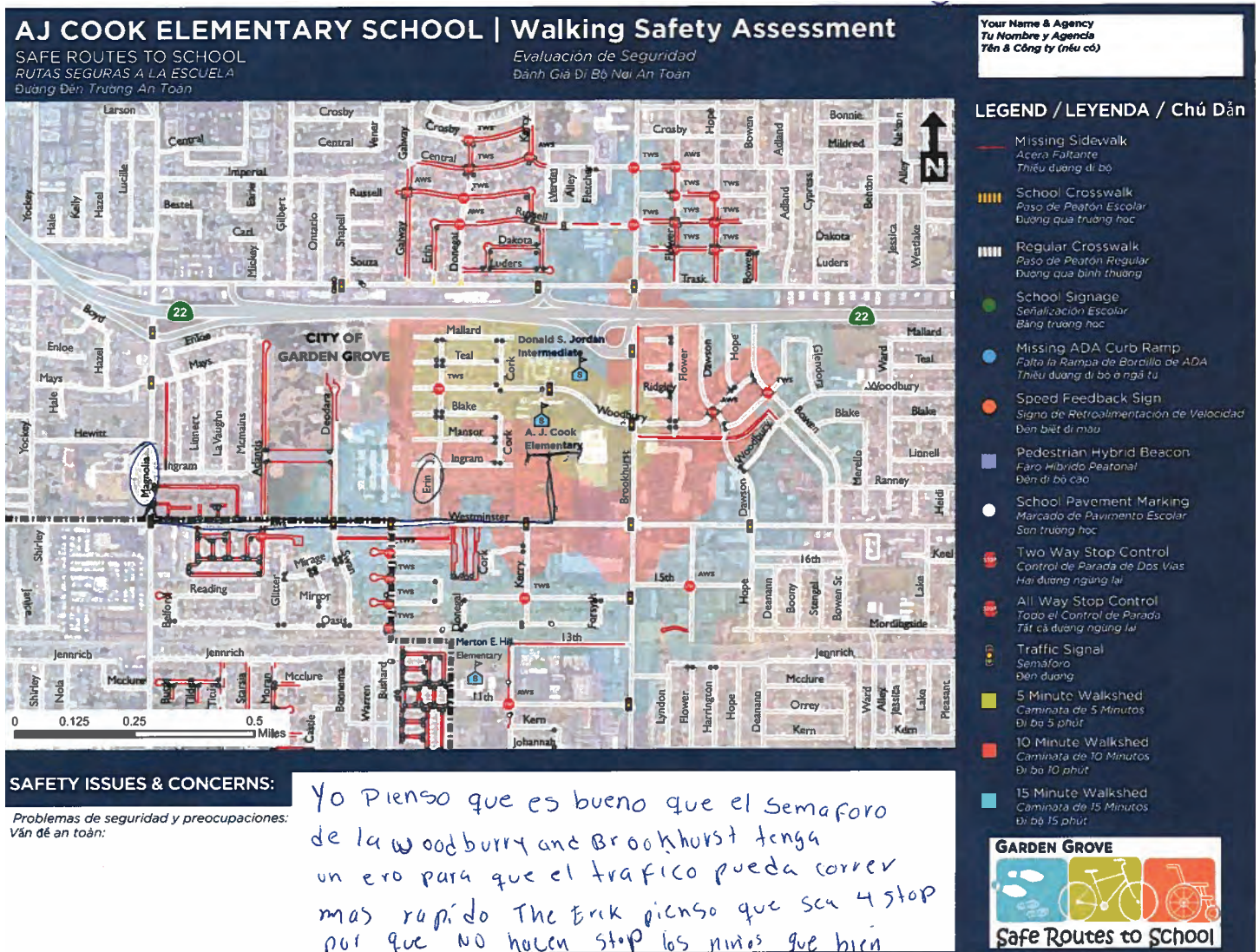


Figure 5-9: Map used at Walking Safety Assessment with comments from event participant

Walking Safety Assessment

The Project Team hosted a Walking Safety Assessment on November 9, 2017 to afford community members an opportunity to express their concerns and explore ideas to improve the roadways surrounding the school. A total of 20 parents and key stakeholders dedicated their valuable time to participate in the event.

Key stakeholders included:

- Parents/Guardians
- Cook Elementary Staff
- GGUSD Staff
- Garden Grove Police
- City Staff

At the Walking Safety Assessment, participants walked around the vicinity of schools, discussed key areas of concerns and explored a range of improvements that they would like to see. After the walk, participants gathered for a discussion on the primary issues that they saw during the walk, as well as routes that affect them going to and from the school. A wide range of potential solutions were explored during these exercises. Solutions that were discussed aimed at addressing participants' main concerns and adhering to engineering limitations so that the ultimate list of improvements would offer immediate and long-lasting benefits to the community.



Participants walking around the school vicinity to identify areas of concerns



Students decorating a crosswalk that would be temporarily implemented as part of a pop-up event

Parent Surveys

The “Parent Survey About Walking and Biking to School” form from the National Safe Routes to School Center was used as an expanded data collection tool. The survey gathered information such as the distance from a student’s home to school, travel mode distribution, and parent perceptions regarding walking and biking to school.

	Count
Number of Survey Responses	238
# of K-8 Students in All Households	343

Travel Mode Distribution

	Percentage
Walk	12.75%
Bike	0.22%
School Bus	6.15%
Vehicle	76.92%
Carpool	3.74%
Transit	0.00%
Other	0.22%

Distance Between Home And School

	Percentage
Less than 1/4 mile	27.78%
1/4 mile up to 1/2 mile	13.64%
1/2 mile up to 1 mile	24.75%
1 mile up to 2 miles	17.17%
More than 2 miles	16.67%

Parent Concerns About Walking and Biking to School

	Percentage	Rank
Distance	71.43%	1
Amount of Traffic Along Route	65.13%	2
Speed of Traffic Along Route	64.29%	3
Violence or Crime	63.03%	4
Safety of Intersections and Crossings	60.92%	5
Convenience of Driving	59.66%	6
Weather or Climate	57.14%	7
Time	56.72%	8
Adults to Bike/Walk With	52.10%	9
Sidewalks or Pathways	50.00%	10
Participation in After-School Programs	49.58%	11
Crossing Guards	48.74%	12

Student Travel Tallies

The City collaborated with Cook Elementary Staff to collect data using the “Safe Routes to School Students Arrival and Departure Tally Sheet”. The Tally Sheet predominately gathers data on travel mode distribution. It supplements the data provided from the Parent Surveys.

	Count
Number of Students Assessed in Tally	311
Number of Trips Assessed in Tally	2073
Morning	1058
Afternoon	1015

Travel Mode Distribution (From Tallies)

	Percentage
Walk	11.77%
Bike	0.48%
School Bus	3.46%
Vehicle	77.27%
Carpool	6.39%
Transit	0.10%
Other	0.53%

Comments retrieved from Outreach Effort

"A mi y a mi hijo nos gusta caminar y lo hacemos." (My son and I like to walk.)

"Para mi hija es divertido caminar las calles no son seguras por que muchas personas que manejan no respetan los cruces peatonales." (My daughter likes to walk, but it's not safe to do so because motorists don't respect pedestrians.)

"I am a parent with a student who is living away from the school. The family car is the only way to and from school safely."

"Please ask parents to park further and walk to pick up kids at the school ground."

"Put speed limit sign on school ground street. More security guards on school time and add security camera."

"Unless we live less than 15 minutes walking distance to school, I won't feel comfortable or safe allowing walking to school."

"Not good for students to walk to school: weather changes, raining, hot day, and car accident!"

"Me gustaría que se fuera caminando en bicicleta pero que tengan mas seguridad en las calles."
("I would like to see (students) walk and bike to school but to have the roadways be safer for them.")

"What can we do with the large green space at corner of Woodbury & Brookhurst? Can we propose that space to become a roundabout drop off zone?"



5.6 PROGRAMMING RECOMMENDATIONS

The programming recommendations for Cook Elementary built off of the momentum developed through a parent group's effort, and are intended to address some of the key behavioral concerns that deter students from using active transportation to get to and from the school. Cook Elementary has a parent group who assists with traffic flow in the school parking lot, and helps pedestrians safely cross Woodbury Avenue. Many parents from this group participated in the Walking Safety Assessment, and can be champions for the programs recommended in this section.

As part of the outreach effort, the City received comments from parents and guardians via the Walking Safety Assessment and Parent Surveys. While many comments can be addressed through engineering improvements, concerns related to crime, safety, and long distances between home and school can be alleviated through encouragement, education, and enforcement programs.

The programming recommendations identified below are five programs that Cook Elementary can begin with. Once the school builds more momentum for the programs identified below, it can move towards other programs discussed in Ch. 4-5 Programming Toolbox which can be more complex yet rewarding.

Recommendation #1: Drop-Off Valet Program

The Drop-Off Valet Program would alleviate some of the traffic congestion on Woodbury Avenue which presents safety concerns for students walking and bicycling to school. Cook Elementary is located on Woodbury Avenue, a local residential street that provides access in the East and West directions. During school hours, Woodbury Avenue experiences high levels of vehicular traffic.

SRTS volunteers can be positioned along the drop-off loop in front of the school to assist with traffic flow. Vehicles can arrive at the school from the west on Woodbury Avenue. SRTS volunteers can motion vehicles to come forward through the drop-off loop, and assist students with exiting the vehicles. Through this program, vehicles can move quicker through the roadway, be primarily concentrated on the south portion of Woodbury Ave, have more defined spaces for drop-off, and thus improve better visibility for pedestrians and bicyclists.

Recommendation #2: Drop-Off Point Program

The Drop-Off Point Program offers opportunities for students to walk to school while reducing the high levels of vehicular traffic on Woodbury Avenue. According to comments received from the Walking Safety Assessment and Parent Surveys, parents stated that walking and bicycling to school is a challenge due to the long distance between home and school. The Drop-Off Point Program would continue to allow students to arrive to and depart from the school via personal vehicles, but participate in active transportation activities to and from Cook Elementary.

This program will develop a formal program for an existing practice where some Cook Elementary parents use the Target Parking Lot as a drop-off point. In addition to the Target Parking Lot, other potential drop-off locations include the Mall of Fortune Parking Lot and Starbucks on Brookhurst Street and Westminster Avenue which are located within a 15 minute walk from the school. Walking to and from

these potential drop-off locations would provide students with 30 minutes of physical activities per day-half of the recommended amount by the Centers for Disease Control and Prevention. The Drop-Off Point Program can be complemented with the Walking School Bus Program which is discussed below.

Recommendation #3: Weekly Walk-to-School Program

The Weekly Walk-to School Program is an encouragement program where Cook Elementary can provide small incentives for students to take active transportation to and from school. Many students live within close proximity to the school. According to the Parent Survey, 28% of students live less than a ¼ mile from the school, which is equivalent to less than ten minutes of walking. Another 14% of students live between ¼ and ½ mile from the school, an equivalent to less than 15 minutes of walking. Combined, slightly less than half of the school (42%) can walk to school within 15 minutes. Currently, only 13% of Cook Elementary students walk to school, but 77% arrive to and from the school via their family vehicle. This program can help shift the current travel behavior.

For Make Cook and Jordan Safer Day, Cook Elementary offered a homework pass for students who participated at the event. The school can offer a homework pass or similar prize for students who participate in the Weekly Walk-to-School Program.

Recommendation #4: Walking School Bus Program

The Walking School Bus Program would provide the adult supervision needed to address the concerns associated with crime and violence. During the Walking Safety Assessment, participants repeatedly voiced this concern. This was supported with findings from the Parent Survey; according to the survey, 63% of parents stated that violence or crime is one of the main factors

for not allowing their child to walk or bike to and from Cook Elementary.

Like the Drop-Off Point Program, the Walking School Bus Program would develop a formal program for an existing practice where parents already walk their child to school. Additionally, participants at the Walking Safety Assessment overwhelmingly voiced their support for the program. Information on how to develop a Walking School Bus can be found in Chapter 4.5 Programming Toolbox. This program should be coordinated with the Weekly Walk-to-School Program.

Recommendation #5: International Walk to School Day

International Walk to School Day is a one-day event that celebrates student walking and biking to school. The event can serve as an excellent kick-off event for SRTS programming at Cook Elementary, or can be a longer-term project for the PTO. Similarly, it can be planned as a continuation of Make Cook and Jordan Safe Day to drum up momentum for Safe Routes to School project.

The event can be simple or complex depending on the school's commitment. It can be consisted of painting and using Walk to School Day signs on the day of, organizing a Walking School Bus, having a school-wide assembly, and/or providing small giveaways for Walk to School participants. Planning the event can take as little as a week, although a longer timeframe would allow for better preparation.

Cook Elementary already has a parent group that can help plan the event. The school can assist by providing print material and small giveaways. It can also help with marketing the event to Cook Elementary parents and other stakeholders, similar to the effort for Make Cook and Jordan Safer Day.

5.7 A. J. COOK ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



Engineering & Operational Improvement Notes

- (A) Install school crosswalks at all legs of Erin and Woodbury and remove the limit line pavement marking at the eastbound and westbound approaches.
- (B) Install "Slow School Xing" pavement markings at approximately 100 feet approaching the school crosswalks along Woodbury at Cork Street and at pedestrian signal in the east and west directions.
- (C) Install curb bulbout islands (maintaining existing gutter for drainage) at the north and south end of the school crosswalk along Woodbury at Cork Street to provide a 12 foot travel lane in each direction.
- (D) Install school crosswalks at various locations along Erin Street. Remove limit line pavement marking on Erin Street at Westminister.
- (E) Install school crosswalks at north, south and west legs of Woodbury and Brookhurst Street
- (F) Install R10-6 sign at existing stop bar locations near crosswalk
- (G) Replace old SR-1 sign with Assembly A sign
 - Install signs restricting on-street parking from 10 PM to 7 AM, Monday through Friday
 - Install red curb at various locations to improve sight distance

5.8 INFRASTRUCTURE RECOMMENDATION DETAILS

Recommendations

Install the following:

SIGNS:

- 2 x R10-6: STOP Here on Red
- 2 x R3-4: No U-Turn symbol
- 1 x SW24-1 (CA) School (Assembly A)
- 12 x SW24-2 (CA) School Crossing w/arrow (Assembly B)
- 2 x SW24-3 (CA) School Crossing Ahead
- 2 x Warning signs - "Blind Person Area"
- 1 x Regulatory sign - "Do Not Block Intersection"

CROSSWALKS:

- 15 x High visibility yellow school crosswalks

PAVEMENT MARKINGS:

- 3 x "SLOW SCHOOL XING"

CURB PAINTING:

- Red curb areas at various roadway segments

SIGNAL HEAD MODIFICATIONS:

- 12 x Cap style head visor replacements
 - To replace existing full circle visors

ROADWAY MODIFICATIONS:

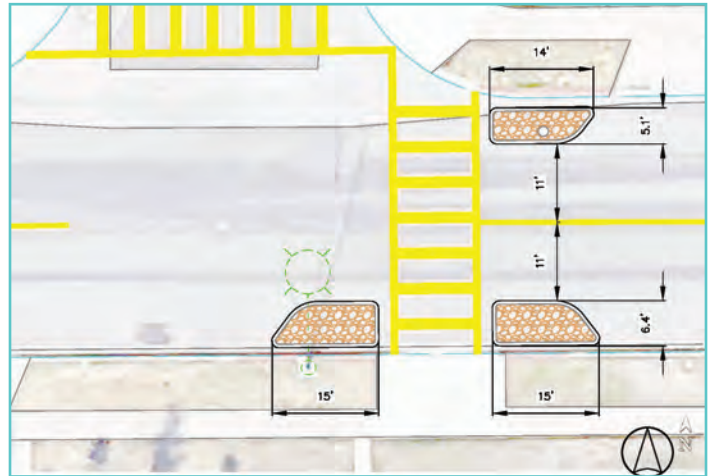
- 3 x curb extension islands at one pedestrian crossing location.

CURB RAMPS:

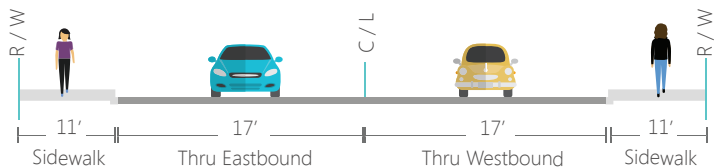
- 10 x ADA compliant curb ramps

Note: The recommendations listed above are the same recommendations as Jordan Intermediate as they are for the same locations. These should not be considered as separate improvements from those indicated for Jordan Intermediate.

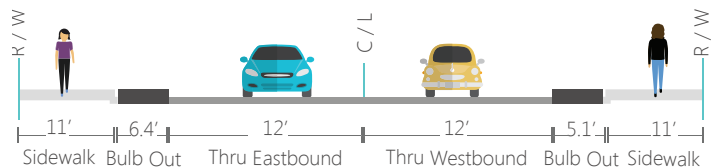
Curb Extension: Concept Plan



Existing Cross Section



Proposed Cross Section with Curb Extension



Discussion:

Pedestrians frequently use the crosswalks at Woodbury Avenue and Cork Street. However, Woodbury Avenue has high levels of vehicular traffic passing through this intersection during the school morning and afternoon hours. The curb extension islands at this crosswalk can help provide better line of sight between pedestrians and motorists, along with shortening the crossing for pedestrians. This improvement also provides traffic calming with reduced lane widths for vehicles traveling through the intersection.

Motorists were observed making U-Turns along Woodbury Avenue adjacent to the school after dropping off or picking up the student(s), along with some double parking along Woodbury Avenue. The new "No U-Turn" symbol signs can help prevent these actions from motorists along Woodbury Avenue.

Improvements to the traffic signal head covers at Woodbury Avenue and Cook Elementary exit driveway can help provide better visibility of the signal heads to motorist existing the driveway. New traffic signs would remind motorists of pedestrian crossings ahead and the need to stop at the limit lines at this signal.

The painted red curb areas would help prevent motorists from parking immediately in front of the school, which can create better sight visibility for motorists to see pedestrians and other vehicles at the school's driveway location.

Woodbury Avenue also experiences vehicle queuing due to heavy volumes during drop-off and pick-up. The issue is exacerbated with high traffic volumes from Brookhurst Street. The City approved the installation of a new traffic signal to accommodate a left-turn phase for vehicles making left-turn

movements onto Brookhurst Street from Woodbury Avenue. This would be installed in the future after further studying the Brookhurst Street corridor.

New "Do Not Block Intersection" signs can assist visitors arriving to and departing from the Target shopping center by not being blocked by vehicles queuing along Woodbury Avenue at the intersection approach at Brookhurst Street.

Short-term parking issues during drop-off and pick-up, and long-term parking concerns due to vacation buses which parked on-street for extended amount of time contribute to poor visibility of motorist and pedestrians along Woodbury Avenue. Recommendations such as restricting and limiting on-street parking can help address these concerns.

Students walk along Erin Street to reach residential neighborhoods west of Cook Elementary and destinations south of the school. However, many intersections along this corridor do not provide school crosswalks and ADA curb ramps. The proposed crosswalks and ADA curb ramps, along with appropriate school signage, can help provide additional warnings to motorists of pedestrians crossing along the intersections and can help pedestrians better utilize the corridor by crossing at the crosswalk locations and not along mid-block areas.

As Cook Elementary, Jordan Intermediate, and Bolsa Grande High School host a program for the Blind and Visually Impaired, installation of new "Blind Person Area" signs along Woodbury Avenue and Erin Street provide warning to motorists as they travel within the school neighborhood area.

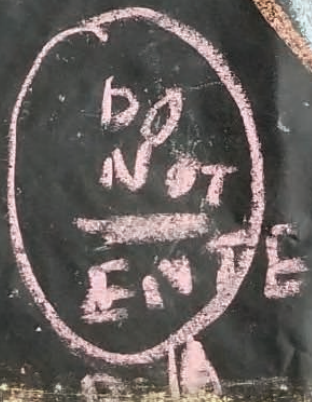
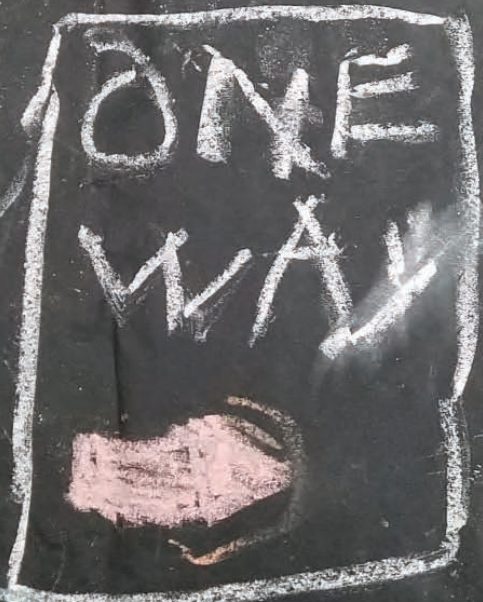
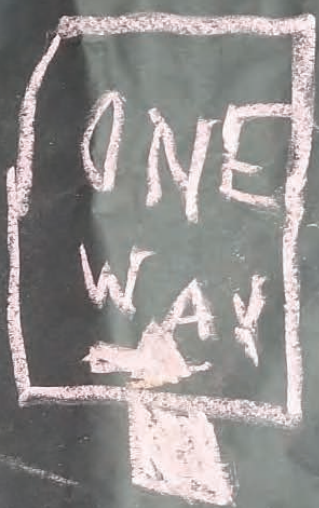
Cost Summary

The cost estimate table below summarizes the Cook Elementary area cost estimates for implementation, based on the cost assumptions described previously in Chapter 4 of this Plan.

SEGMENT	IMPROVEMENT	UNIT	COST	QTY	TOTAL	
Cook Elementary	New Sign & New Post	Each	\$300	22	\$6,600	
	School Area Pavement Marking (Per Word)	Each	\$210	19	\$3,990	
	High Visibility Ladder Crosswalk	Each	\$1,480	15	\$22,200	
	ADA Curb Ramps	Each	\$4,968	10	\$49,680	
	Curb Extension - Raised	Per Intersection	\$72,685	0.5	\$36,342	
	Paint Curb	Per Linear Foot	\$2	490	\$980	
	Replace Signal Heads	each head	\$1,500	12	\$18,000	
	Subtotal					\$137,792
	Design (D) (Subtotal * 15%)					\$20,669
	Environmental (E) (Subtotal * 5%)					\$6,890
	Construction Management (CM) ((Subtotal + D + E) * 10%)					\$16,535
	Mobilization (M) ((Subtotal + D + E) * 5%)					\$8,268
	Traffic Control (TC) ((Subtotal + D + E) * 5%)					\$8,268
	Contingency ((Subtotal + D + E + CM + M + TC) * 15%)					\$29,763
Segment Total					\$228,184	

Note: The cost assumptions listed above are the same cost assumptions as Jordan Intermediate as they are for the same locations. These should not be considered as separate costs from those indicated for Jordan Intermediate.

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6. Brookhurst Elementary

- 6.1 Introduction
- 6.2 Existing Conditions
- 6.3 Existing Infrastructure
- 6.4 Observed Behaviors
- 6.5 Community Engagement
- 6.6 Programming Recommendations
- 6.7 Infrastructure Recommendations
- 6.8 Infrastructure Recommendation Details

6.1 INTRODUCTION

Brookhurst Elementary is located on 9821 William Dalton Way in the Center portion of Garden Grove. It is tucked in a residential neighborhood that is bounded by Brookhurst Street to the East, Gilbert Street to the West, Chapman Avenue to the North, and Lampson Avenue to the South. Local destinations within walking distance from the school include Spirit of '76 Mini Park on Brookhurst Street and Lampson Avenue, the Pavilion Plaza on Brookhurst Street, Regal Cinema, Walmart, and a wide variety of shops and eateries on Brookhurst Street and Chapman Avenue.

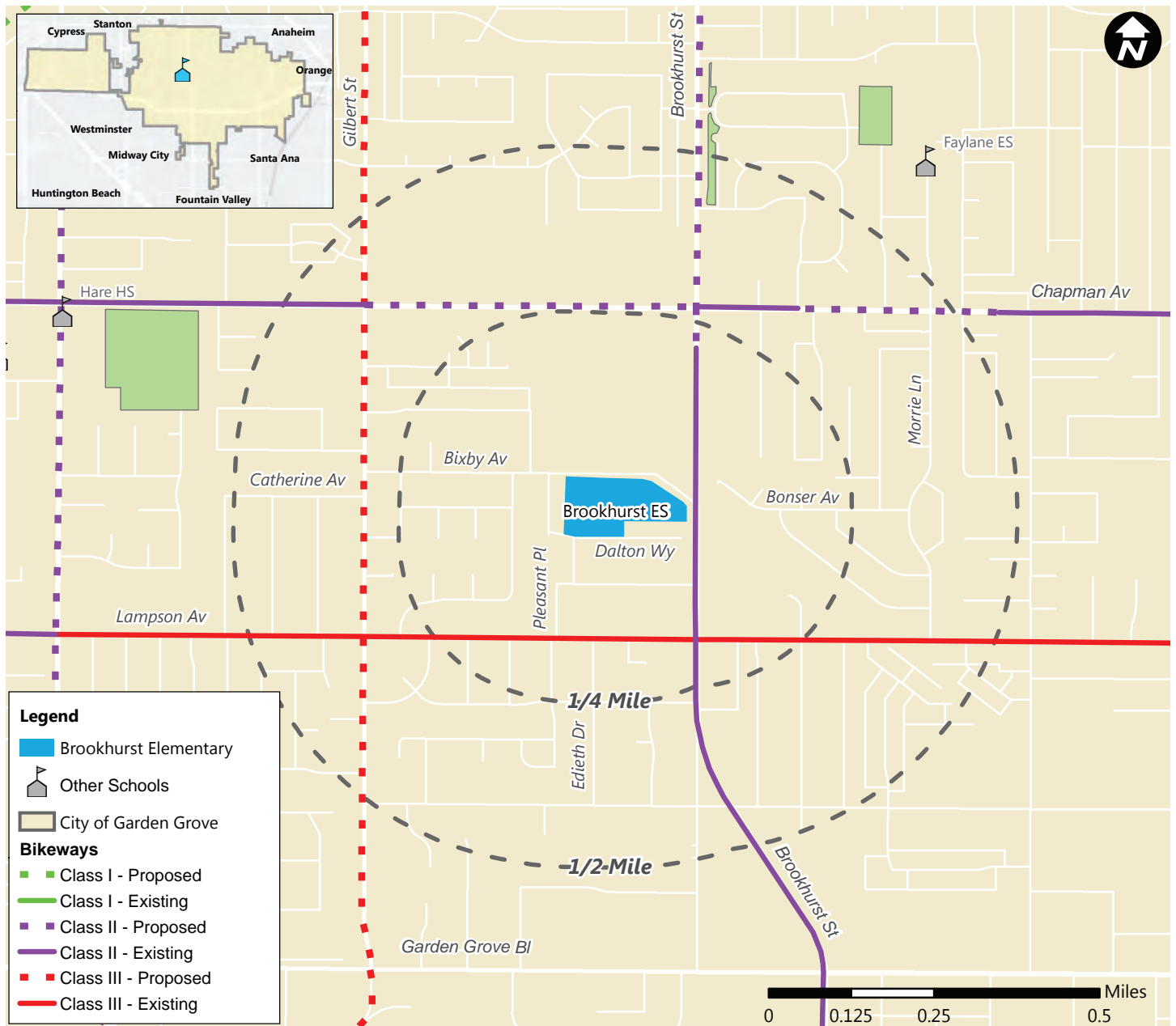


Figure 6-1: Map of School Location

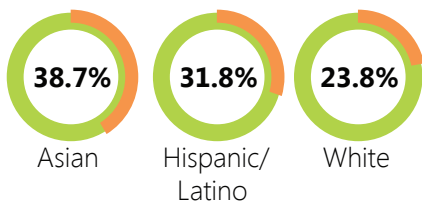
Brookhurst Elementary School

School Snapshot

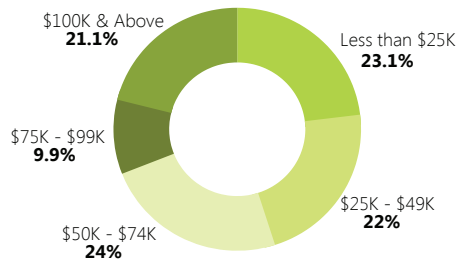
Brookhurst Elementary enrolled **464 students** in the 2017-2018 school year. Of these students, **26.1%** currently walk and bike to school, while **52.4%** of students are driven to school.

COMMUNITY CHARACTERISTICS

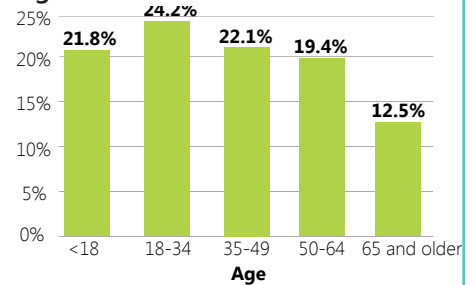
Race



Median Household Income

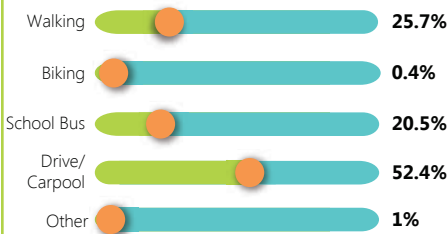


Age

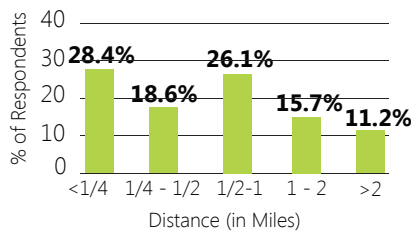


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



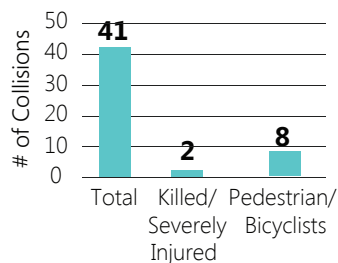
Input from the Community

"I think it is very healthy for children to walk and ride bicycles, but sometimes many parents do not have the time to help with that."

"In high school, we will let our kids walk or bike to school because they may be more prepared to handle any situations that may arise."

SAFETY

Transportation Collisions within 1/4 Mile Radius



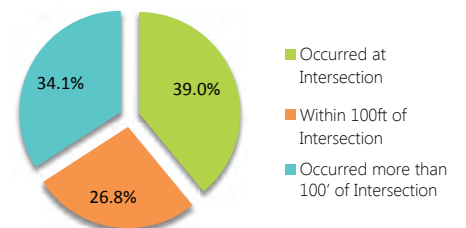
High Collision Roadways

- 1 Brookhurst Street (29)
- 2 Lampson Avenue (8)

High Collision Intersections

- 1 Brookhurst Street and Bixby Avenue (10)
- 2 Brookhurst Street and Lampson Avenue (14)
- 3 Brookhurst Street and Pavilion Way (6)

Collision Locations



6.2 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near Brookhurst Elementary. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children's access to health care, and communities' exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

Race

	0.25 Mile
White	23.80%
African American or Black	0.70%
American Indian or Native Alaskan	1.60%
Asian	38.70%
Native Hawaiin or Pacific Islander	0.00%
Other	0.00%
Two or More	3.40%
Hispanic or Latino	31.90%

Median Household Income

	0.25 Mile
< \$25,000	23.10%
\$25,000 - \$49,999	22.00%
\$50,000 - \$74,999	24.00%
\$75,000 - \$99,999	9.90%
\$100,000 - \$149,999	9.80%
\$150,000 or More	11.30%

Age

	0.25 Mile
Under 18	21.80%
18 - 34	24.20%
35 - 49	22.10%
50 - 64	19.40%
65 or Older	12.50%

Language Capabilities

	0.25 Mile
English Only Households	36.00%
Spanish Speaking Households	23.30%
Limited English Speaking Housheolds	16.00%

Collision Type

	#	0.25 Mile
Pedestrian	4	9.80%
Bicycle	4	9.80%
Total Collisions	41	100%
Total Bicycle and Pedestrian	8	19.50%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	2	50%
Severely Injured	0	0%
Injury (Visible)	1	25%
Injury (Complaint of Pain)	1	25%
All Injured	2	50%
Property Damage Only	0	0%

Bicycle Injury Status

	#	0.25 Mile
Fatal	0	0%
Severely Injured	0	0%
Injury (Visible)	3	75%
Injury (Complaint of Pain)	1	25%
All Injured	4	100%
Property Damage Only	0	0%

Health Factors

	0.25 Mile
Asthma	35th percentile
Cardiovascular Disease	45th percentile
Ozone	53rd percentile
PM 2.5	66th percentile
Diesel PM	33rd percentile
Traffic Density	41st percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile surrounding Brookhurst Elementary, 41 collisions occurred between 2013 and 2017. Of those collisions, 19.5% involved a pedestrian or bicyclist. Two of the eight collisions resulted in a pedestrian fatality while four collisions resulted in visible injuries. The primary collision factor for collisions involving a bicyclist was the bicyclist riding on the wrong side of the road. Meanwhile, more than half of all pedestrian collisions involved a pedestrian violation.

*Data retrieved from TIMS 2013-2017

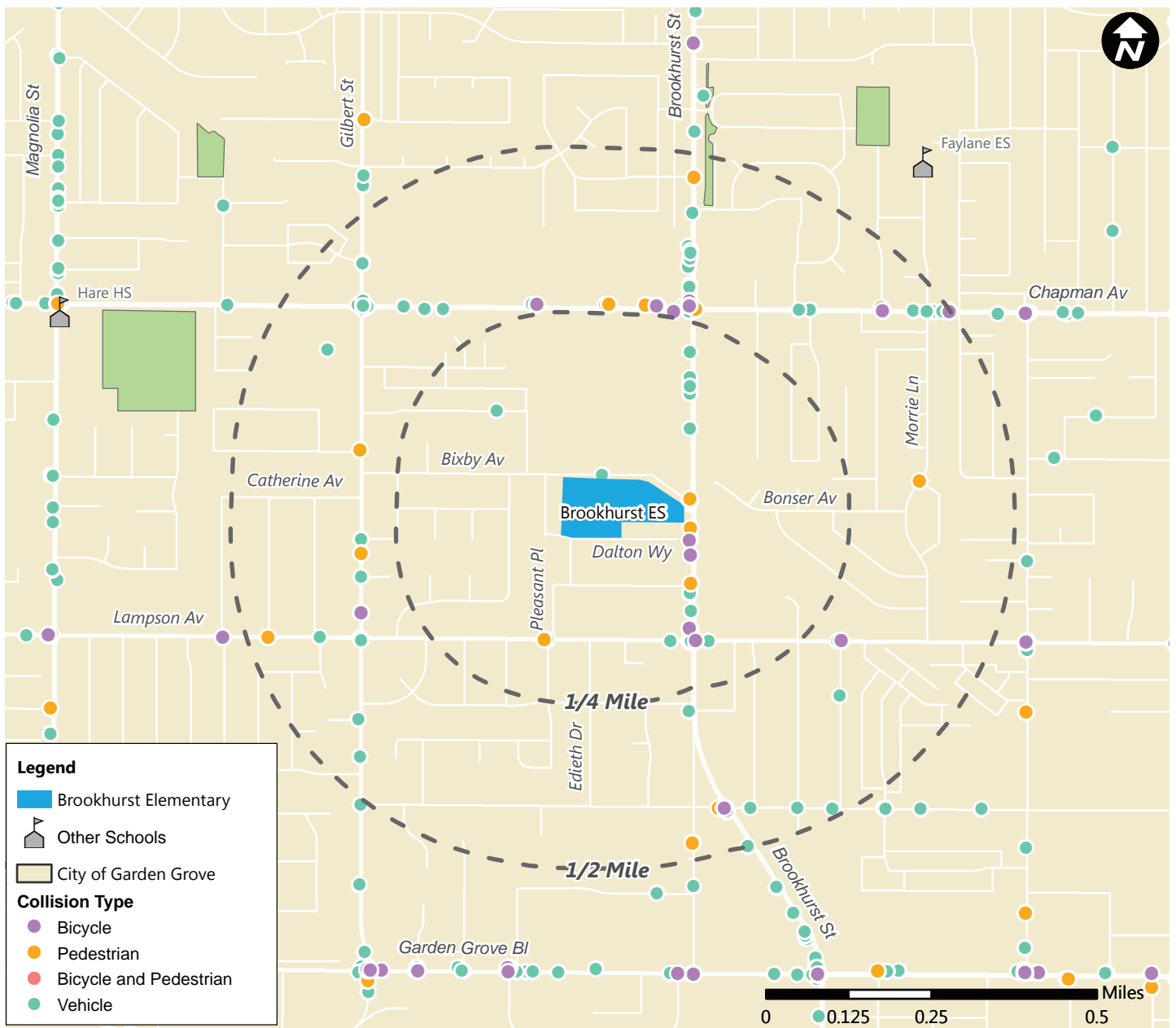


Figure 6-2: Map of Bike and Pedestrian Collisions within a 1/4 and 1/2 Mile of Brookhurst Elementary

Median Household Income

Approximately 45% of households within a ¼ mile of Brookhurst Elementary have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$54,148- below the statewide median household income of \$63,783, the county wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026.

*Data retrieved from American Community Survey 2016 Estimates

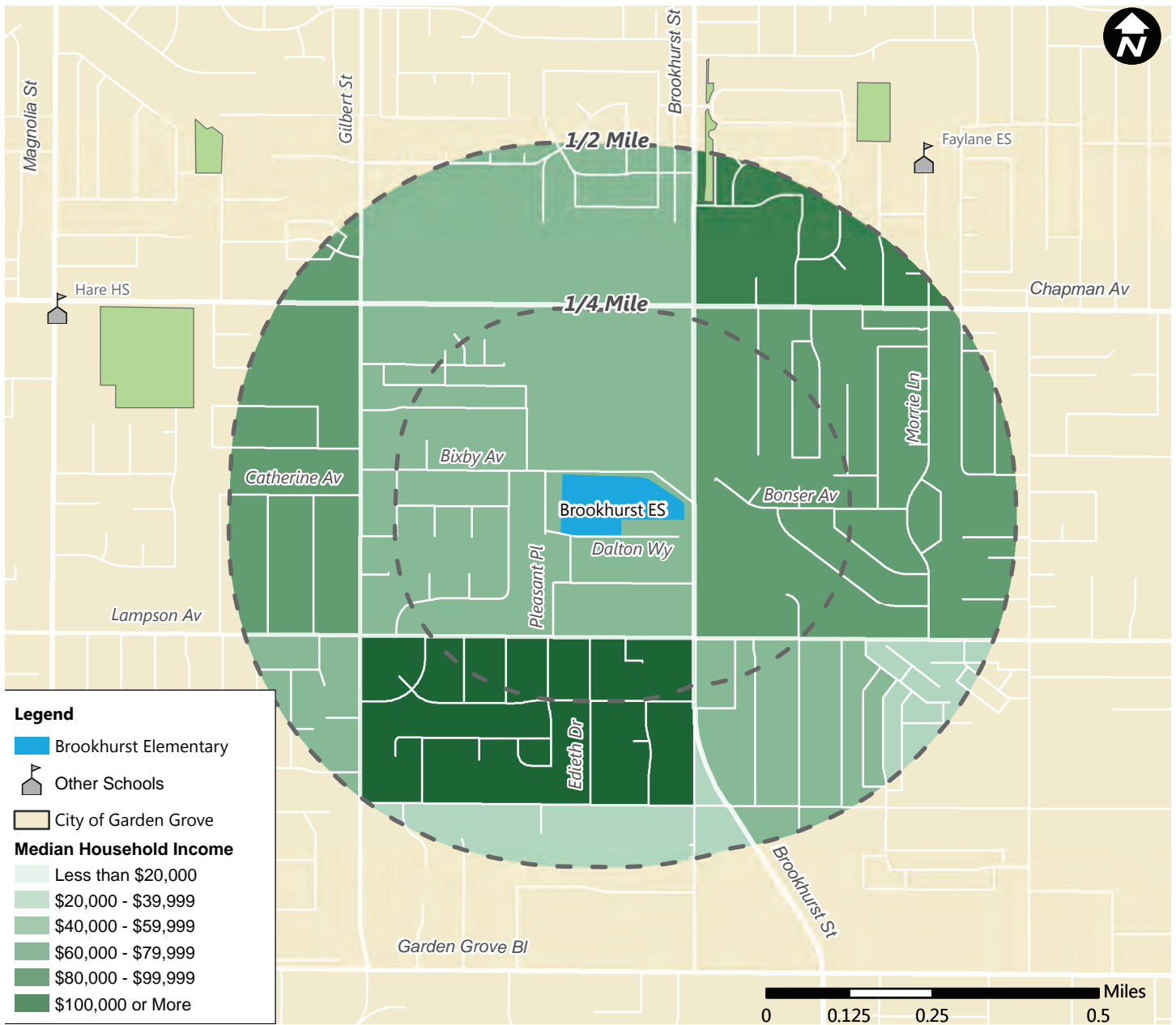


Figure 6-3: Map of Median Household Income

Population Younger Than 18 Years Old

Approximately 1 in 5 (21.8%) residents living in the ¼ mile area surrounding Brookhurst Elementary are under the age of 18. This rate is just under the citywide population share of 23.1%. Within a ½ mile area, some Census Block Groups have a rate as high as 35%.

*Data retrieved from American Community Survey 2016 Estimates

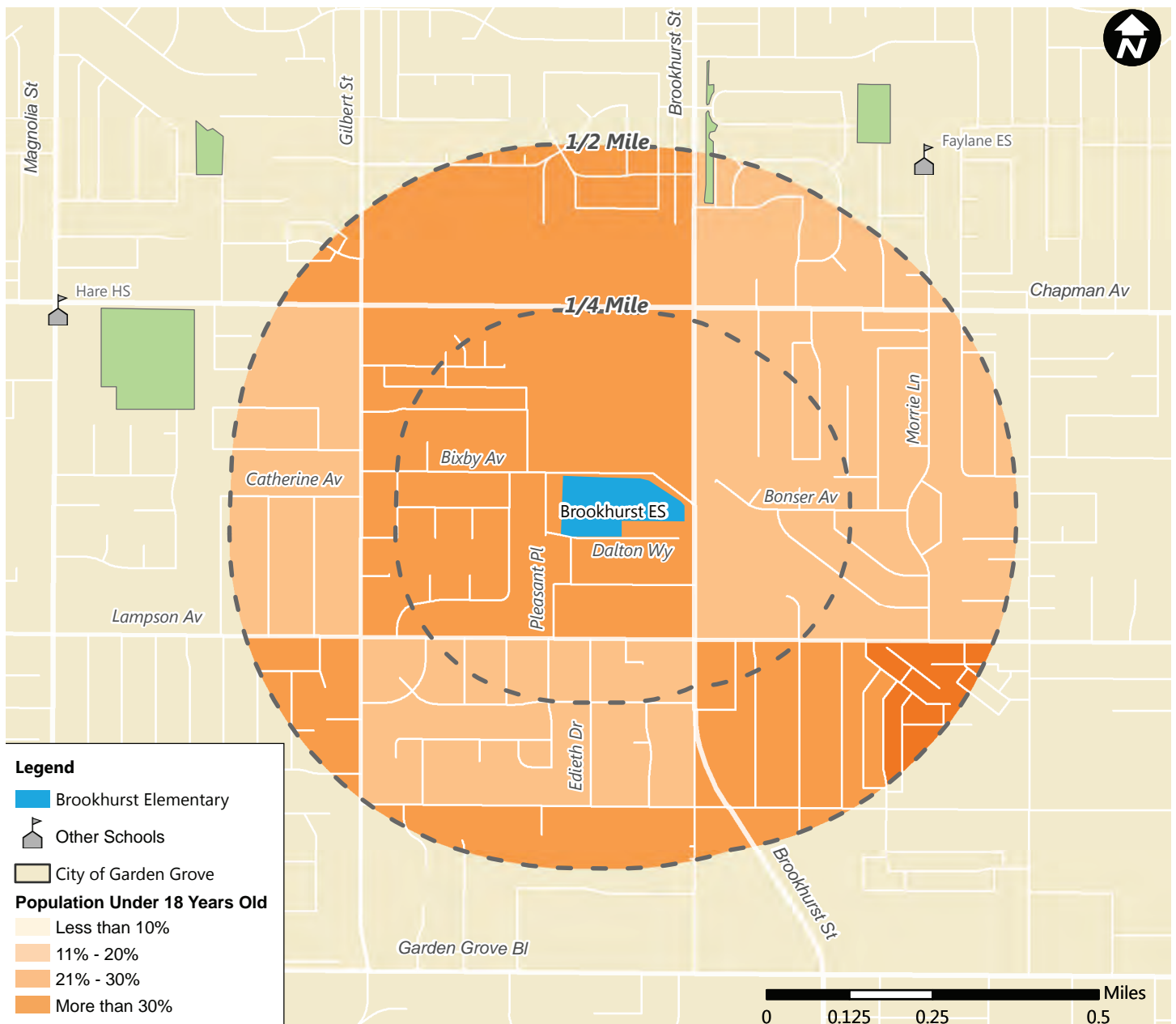


Figure 6-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Brookhurst Elementary has a high rate of Asian and Hispanic residents. Approximately 39% of households within a ¼ mile of the school are of Asian descent and nearly 32% of households are of Hispanic of Latino descent. The high level of households that has limited English capabilities correlates to these demographic statistics. An average of 16% of all households has limited English communication abilities, although certain neighborhoods have as many as 50% or more households that have limited English capabilities.

*Data retrieved from American Community Survey 2016 Estimates

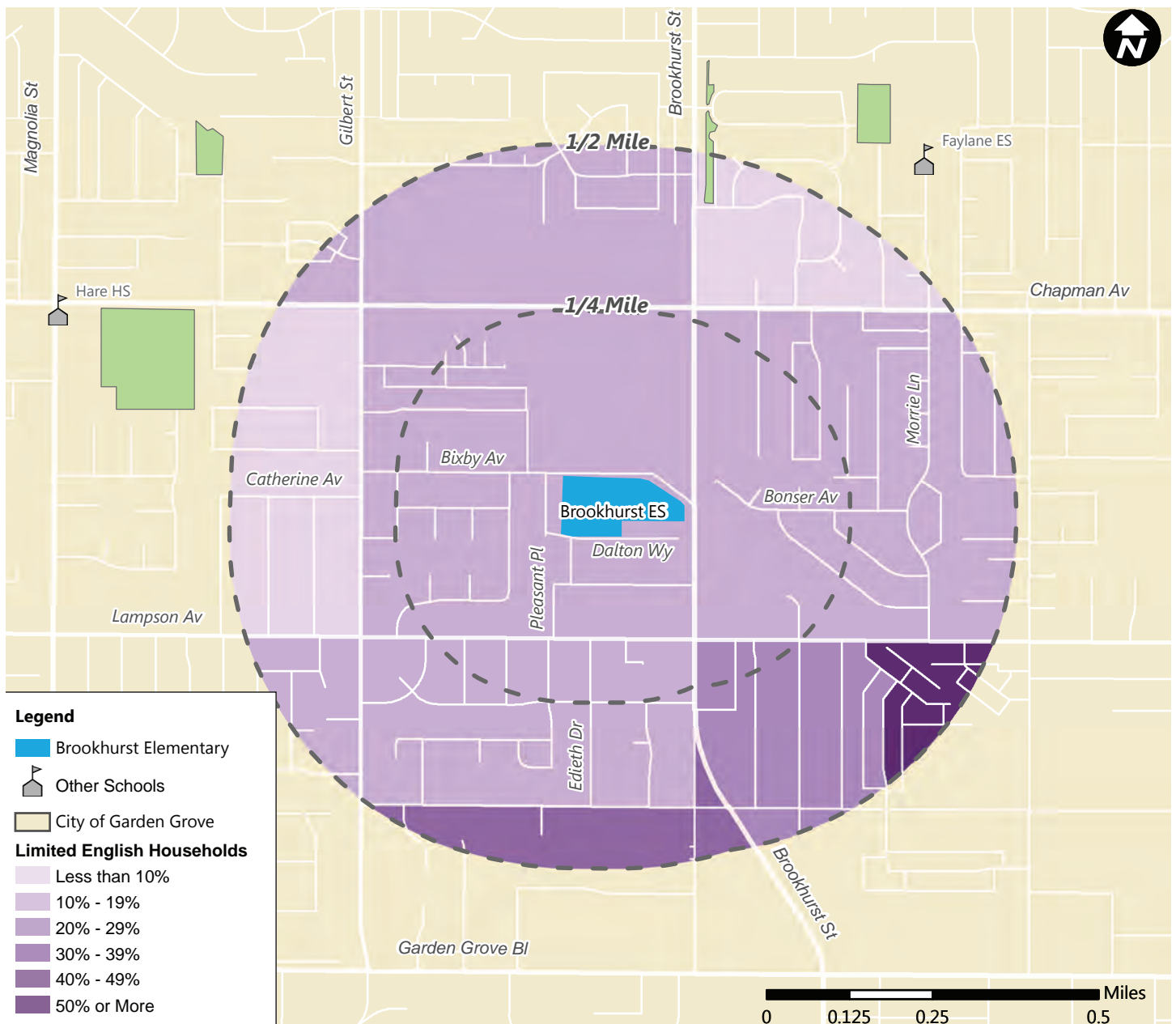


Figure 6-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding Brookhurst Elementary are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the school all rank below the 60th percentile of all census tracts in California.

*Data retrieved from CalEnviroScreen 3.0

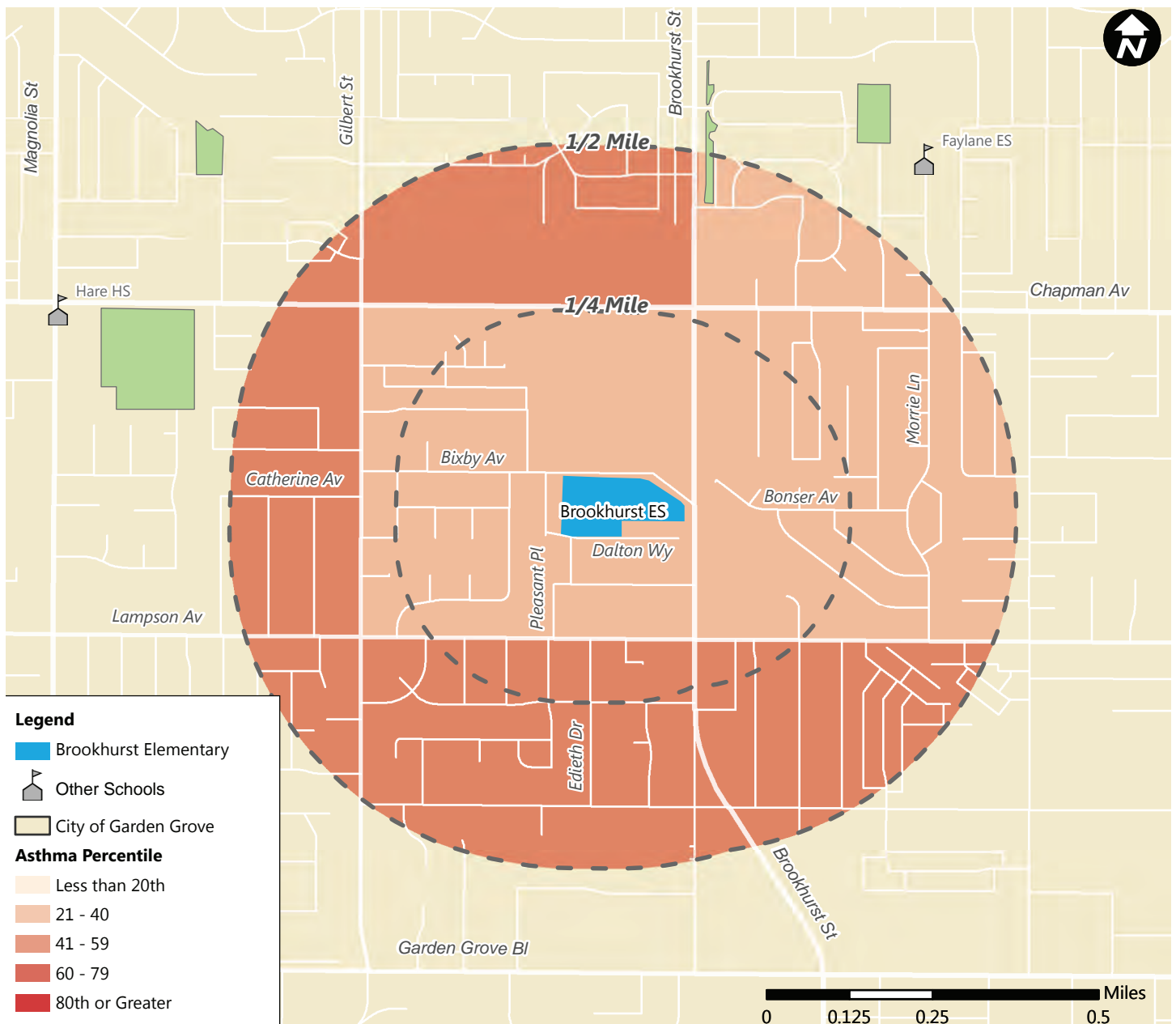


Figure 6-6: Map of Population With Asthma

Households With Cardiovascular Disease

The rates of Cardiovascular Disease-related hospital visits surrounding Brookhurst Elementary rank at the 45th percentile. According to CalEnviroScreen 3.0, multiple census tracts surrounding the school are ranked as high as the 78th percentile compared to census tracts in California. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood.

*Data retrieved from CalEnviroScreen 3.0

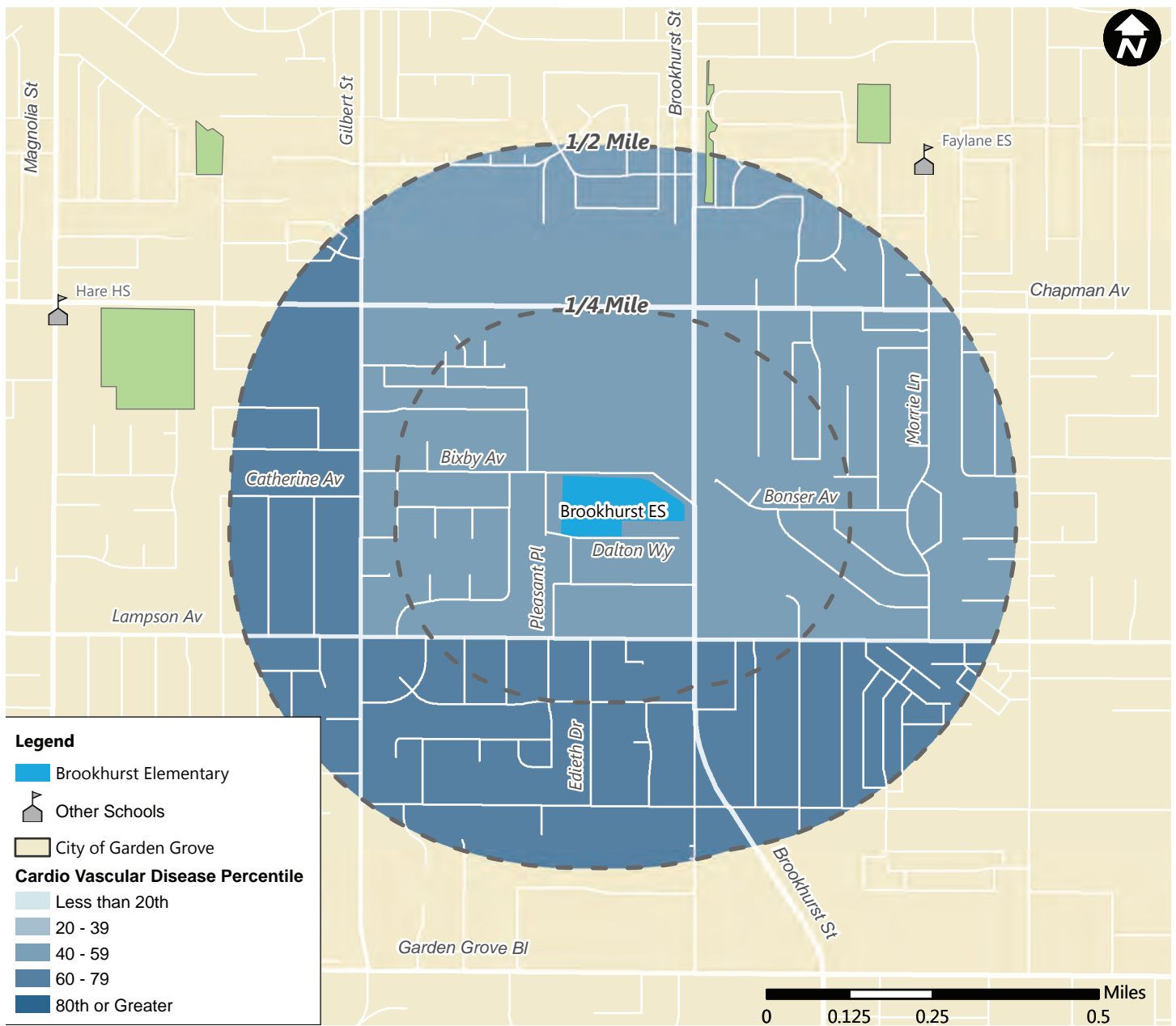


Figure 6-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. However, some census tracts surrounding Brookhurst Elementary have a rate of children with no access to health care above 10%.

*Data retrieved from CalEnviroScreen 3.0

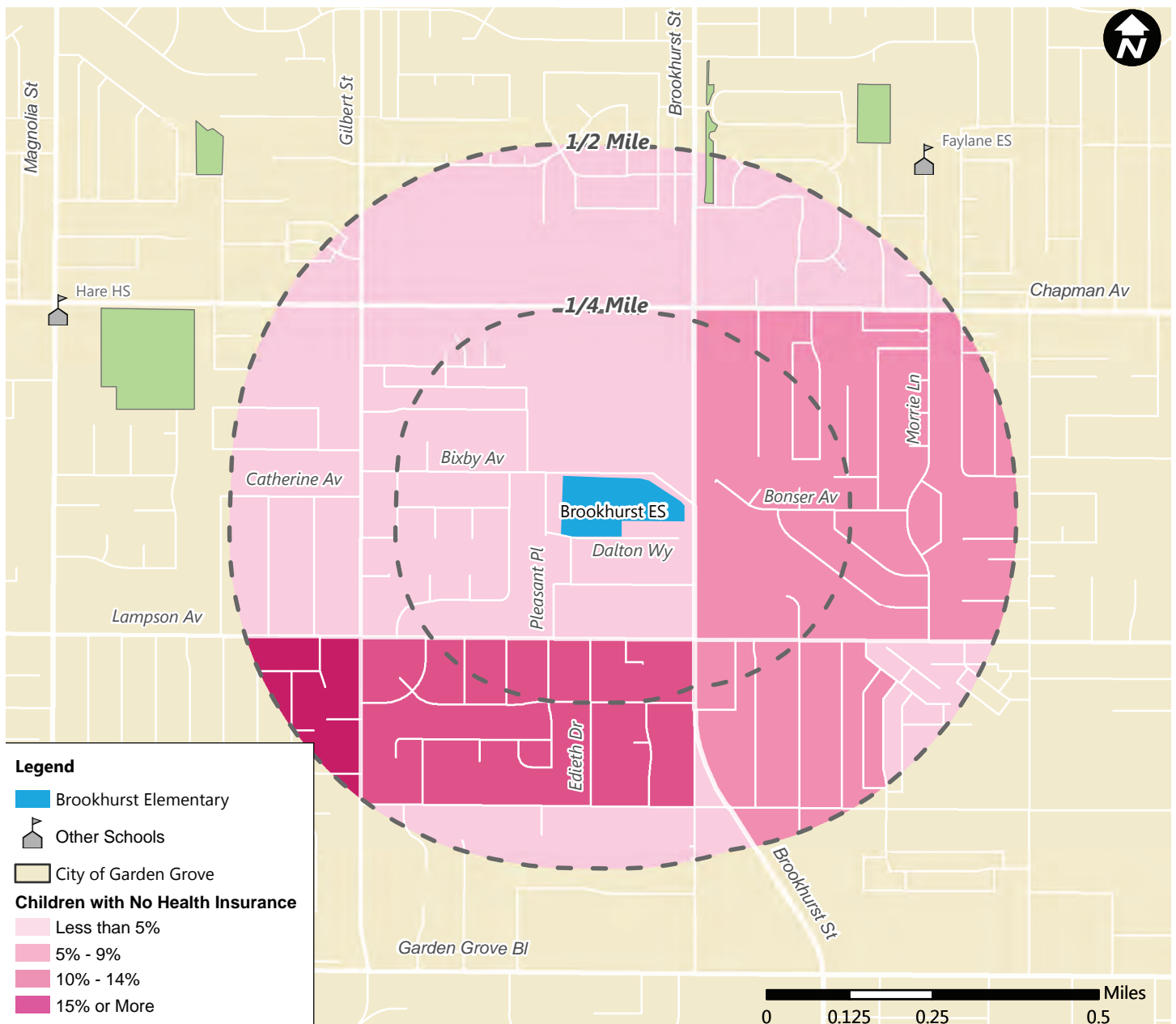
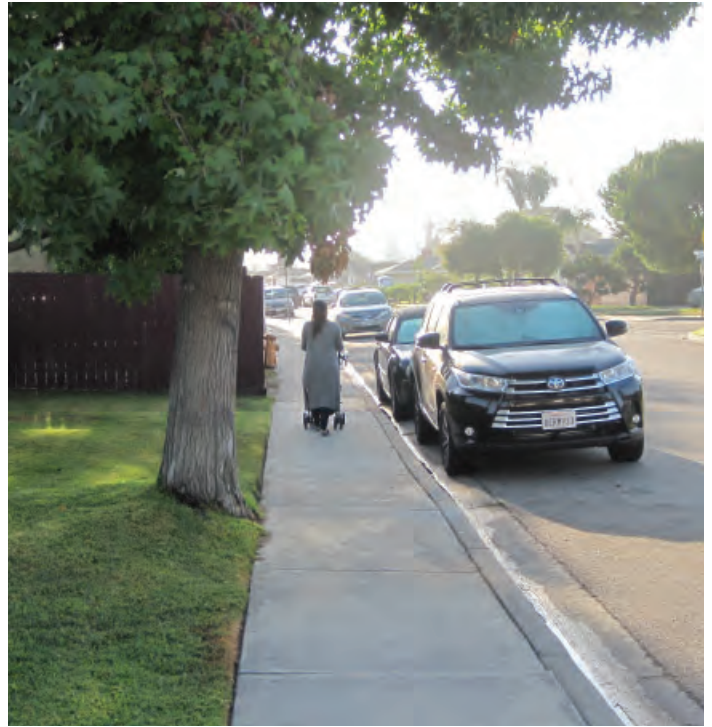


Figure 6-8: Map Of Children With No Access To Health Insurance

6.3 EXISTING INFRASTRUCTURE



Faded crosswalk & missing curb ramp on William Dalton Way and Hester Place .



Parent with stroller walking student to school along the sidewalk on Hester Place, adjacent to the school.



Faded school pavement markings on Bixby Avenue.



Damaged street name signs.



Crossing guard assisting a student and parent at the intersection of Bixby Avenue and Hester Place.



Cracked pavement on Bixby Avenue with wide sidewalks adjacent to the back entrance of the school.



Pedestrians crossing mid-block on William Dalton Way.



Pedestrians walking against traffic on Hester Place which lacks sidewalk on the west side.

6.4 OBSERVED BEHAVIORS

The following presents a list of infrastructure concerns and behavioral issues that were observed at Brookhurst Elementary.

William Dalton Way

- Parking during pick-up and drop-off presents visibility concerns.
- Motorists don't stop for pedestrians.
- Student drop-off occurring along the south side of William Dalton Way, causing pedestrian mid-block crossing.

Eneo Place and William Dalton Way

- Need curb ramp at the north side of intersection.
- William Dalton Way does not have traffic controls; this causes motorists arriving from Eneo Place to queue on the roadway.
- Motorists don't come to a full stop at the stop sign on Eneo Place.
- Motorists park on the crosswalk which prevents pedestrians from safely using the facility and blocks other motorists from going forward.

Eneo Place

- Motorists park on west side of the roadway, and students walk across the roadway to reach the school.
- West side of the roadway lack sidewalk.

Eneo Place and Beverly Lane

- Lack sidewalk on northside of Beverly Ln.
- Pedestrians cross Beverly Ln, but there is no crosswalk.
- Motorists conduct "S" maneuvers between the intersection of Pleasant Pl and Beverly Ln and Eneo Pl and Beverly Ln.

Beverly Lane

- Lack sidewalk on many portions of Beverly Ln.
- At the east end of Beverly Ln, there is an opening

in the wall that allows pedestrians to access to and from the school via Brookhurst St.

Lampson Avenue

- Lack of sidewalk on the north side of the roadway.
- Sidewalk is available on the south side, but pedestrians still walk on the north side.
- The sidewalk on the south side is obstructed by trees, giving pedestrians little space to walk.
- White stripe along the roadway does not clearly demarcate its function. It's not clear whether it's a bike lane or parking lane.
- Motorists drive too fast down Lampson Ave.

Lampson Avenue and Pleasant Place

- Pedestrians cross the intersection, but it lacks crosswalks in three directions.
- Crosswalk is available on the west leg, but it leads to a curb ramp that offers no access to a sidewalk [need to confirm].
- Pedestrian signal can improve visibility for pedestrians crossing Lampson Ave.
- Vehicles queue up on Pleasant Place due to motorists making left turns onto Lampson Ave which is uncontrolled at the intersection.

Brookhurst Street and Stanford Avenue

- "No Turn on Red" sign on Stanford going westbound is ignored by motorists. One possible rationale that contribute to this behavior is that the sign is placed too far in advance of the traffic signal.

Bixby Avenue

- Provides access to the back of the school.
- Motorists speed through the corridor.

- Lack of sidewalk along south portion between Peacock Ct and Hester Pl.

Bixby Ave (cont'd)

- Double parking near the back entrance during drop-off and pick-up.
- Students cross mid-block to reach parked cars from across the street.

Bixby Avenue and Hester Place

- Faded crosswalks in need of improvements.
- Need a curb ramp on north side of east leg crossing and southwest corner.
- Sight distance issue with parked cars for pedestrians trying to cross the street.

Blanche Avenue

- Need sidewalks and curb ramps.

Peacock Court

- Parent comments of possible drainage problems during rain.
- Lack of sidewalk.
- Pavement legend is faded.
- Stop sign is hard to see.

Alley at north end of Peacock Court

- The alley is located behind the apartment buildings, and students use it as a shortcut to and from the school.
- Vehicles don't respect the speed limit, and speed through the alley.
- The alley is narrow and lacks a sidewalk.

Hester Place

- Some sidewalk panels were cracked, and this increases the possibility of pedestrians tripping while using it.



6.5 COMMUNITY ENGAGEMENT

The City strove to identify infrastructure improvements that not only responded to the community's needs and address their concerns, but were also feasible within engineering limitations. To gather community input, the City conducted Walking Safety Assessments (WSA), collected Parent Surveys, and worked with teachers to collect Student Travel Tallies in classrooms. The City also collaborated with Brookhurst Elementary School staff and Garden Grove Unified School District staff to market the project to the Brookhurst Elementary School community, nearby businesses, and local organizations.

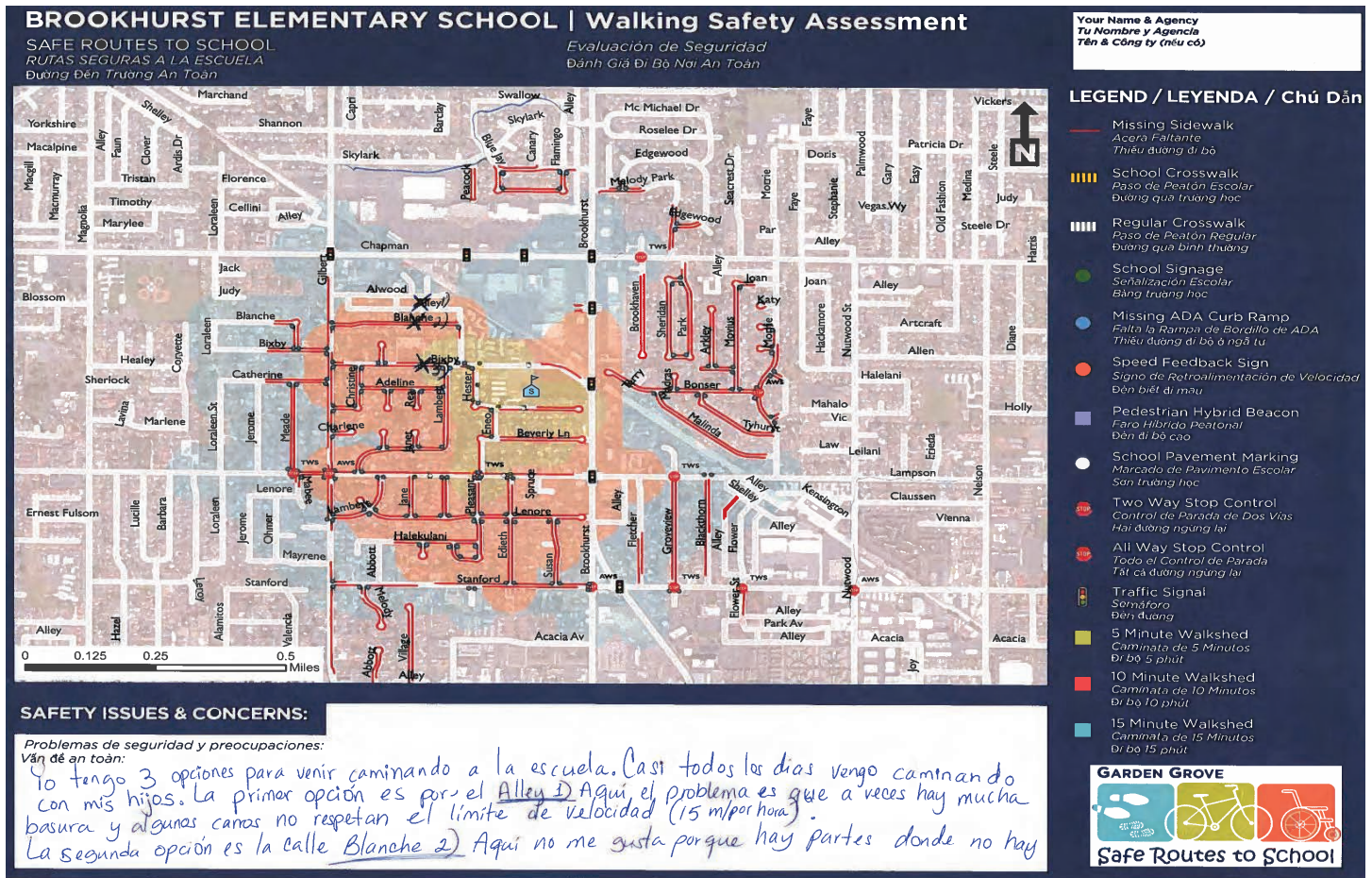


Figure 6-9: Map used at Walking Safety Assessment with comments from event participant

Walking Safety Assessment

The Project Team hosted a Walking Safety Assessment on February 28, 2018 to afford community members an opportunity to express their concerns and explore ideas to improve the roadways surrounding the school. A total of 67 parents and key stakeholders dedicated their valuable time to participate in the event.

Key stakeholders included:

- Parents/Guardians
- Brookhurst Elementary Staff
- GGUSD Staff
- Garden Grove Police
- City Staff

At the Walking Safety Assessment, participants walked around the vicinity of schools, discussed key areas of concerns and explored a range of improvements that they would like to see. After the walk, participants gathered for a discussion on the primary issues that they saw during the walk, as well as routes that affect them going to and from the school. A wide range of potential solutions were explored during these exercises. Solutions that were discussed aimed at addressing participants' main concerns and adhering to engineering limitations so that the ultimate list of improvements would offer beneficial immediate and long-lasting outcomes to the community.



Participants listening to the opening presentation of the Walking Safety Assessment



Group discussion after the walk

Parent Surveys

The “Parent Survey About Walking and Biking to School” form from the National Safe Routes to School Center was used as an expanded data collection tool. The survey gathered information such as the distance from a student’s home to school, travel mode distribution, and parent perceptions regarding walking and biking to school.

	Count
Number of Survey Responses	145
# of K-8 Students in All Households	230

Travel Mode Distribution

	Percentage
Walk	25.69%
Bike	0.35%
School Bus	20.49%
Vehicle	50.69%
Carpool	1.74%
Transit	0.00%
Other	1.04%

Distance Between Home And School

	Percentage
Less than 1/4 mile	28.36%
1/4 mile up to 1/2 mile	18.66%
1/2 mile up to 1 mile	26.12%
1 mile up to 2 miles	15.67%
More than 2 miles	11.19%

Parent Concerns About Walking and Biking to School

	Percentage	Rank
Safety of Intersections and Crossings	68.97%	1
Amount of Traffic Along Route	64.83%	2
Violence or Crime	63.45%	3
Speed of Traffic Along Route	62.76%	4
Distance	60.69%	5
Sidewalks or Pathways	60.00%	6
Weather or Climate	56.55%	7
Time	55.17%	8
Convenience of Driving	51.03%	9
Crossing Guards	51.03%	10
Adults to Bike/Walk With	50.34%	11
Participation in After-School Programs	48.28%	12

Student Travel Tallies

The City collaborated with Brookhurst Elementary Staff to collect data using the “Safe Routes to School Students Arrival and Departure Tally Sheet”. The Tally Sheet predominately gathers data on travel mode distribution. It supplements the data provided from the Parent Surveys.

	Count
Number of Students Assessed in Tally	297
Number of Trips Assessed in Tally	1736
Morning	878
Afternoon	858

Travel Mode Distribution (From Tallies)

	Percentage
Walk	17.17%
Bike	0.17%
School Bus	18.15%
Vehicle	60.45%
Carpool	3.72%
Transit	0.34%
Other	0.00%

Comments retrieved from Outreach Effort

"I would feel comfortable with my child walking to school if there were sidewalks or even a crossing guard on Lampson Ave. Drivers are very impatient of pedestrians, and I feel it is unsafe for my child to walk to school."

"Narrow sidewalk next to Brookhurst St, and no sidewalk on residential streets leading to the school."

"I do not give permission to my son to ride a bike to school because he is very young and small. However, I do think it is a good idea for other students to ride their bikes to school because it is a fun activity."

"My son always go to school walking with his friends and walks home with his friends as well."

"Too many cars get on sidewalks during drop-off. Parents don't look and drive crazy fast during drop-off. Some parents just drop their children off in the middle of the street."

"The back gate entrance at Bixby is very busy. The school bus drops off students, and teachers use this entrance to access the teacher parking lot."

"Students walk through the alley which loops behind other apartment areas. However, there may be crime activities, and there was a kidnapping attempt."



6.6 PROGRAMMING RECOMMENDATIONS

Brookhurst Elementary programming recommendations built off of the momentum developed through a burgeoning parent group's effort and beginnings of wider participation in the Parent Teacher Organization (PTO). They aimed to address some of the key behavioral concerns that deter students from using active transportation to get to and from the school.

As part of the outreach effort, the City received comments from parents and guardians via the Walking Safety Assessment, Parent Surveys, and special meeting with the Parent Teacher Organization. Prior to the Walking Safety Assessment, the Project Team had an opportunity to attend a Parent Teacher Organization meeting where PTO members expressed their enthusiasm for the project. As part of their collaboration with the school, some members assisted the school with monitoring the back gate located on Bixby Avenue to provide access for parents and students arriving from and departing to areas north of the school. The PTO at Brookhurst Elementary consists of only a few members; however, they can be excellent champions for the Safe Routes to School Programs identified below.

Many comments received can be addressed through engineering improvements; however, concerns related to crime, safety, and long distances between home and school can be alleviated through encouragement, education, and enforcement programs. The programming recommendations identified below are five programs that Brookhurst Elementary can begin with. Once the school builds more momentum for the programs identified below, it can move towards other programs discussed in Ch. 4-5 Programming Toolbox.

Recommendation #1: Walk and Roll Day and/or International Walk to School Day

Walk and Roll to School Day is an event where students walk or bike to school. International Walk to School Day is an international event that occurs annually in October. These events can be simple or complex depending on the school's commitment. It consists of organizing a Walking School Bus and/or providing small giveaways for participants.

To kick-off the SRTS Programming effort, and recruit more parent volunteers to join the effort, Brookhurst Elementary School could host a Walk and Roll Day (and if time schedule aligns- International Walk to School Day). The PTO at Brookhurst Elementary can help plan the event. The school can provide print material and small giveaways. It can also help with marketing the event to Brookhurst Elementary parents and other stakeholders.

Recommendation #2: Weekly Walk-to-School Program

Many students live within close proximity to the school. According to the Parent Survey, 28% of students live less than a ¼ mile from the school, which is equivalent to less than ten minutes of walking. Another 19% of students live between ¼ and ½ mile from the school, an equivalent to less than 15 minutes of walking. Combined, slightly less than half of the school (47%) can walk to school within 15 minutes.

Of the six schools involved in this Plan, Brookhurst Elementary boasts the highest rate of students walking to and from the school (26%). However, many more students can utilize active transportation to and from Brookhurst Elementary. Of the students enrolled at the school, 51% of students arrive to and from the school via their family vehicle.

The Weekly Walk-to-School Program can provide small

incentives to encourage more students to take active transportation to and from the school. The school can offer a homework pass or similar prize for students who participate in the program.

Recommendation #3: Walking School Bus Program

The Walking School Bus Program would provide the adult supervision needed to address the concerns associated with crime, violence, and young children walking to school alone. During the Walking Safety Assessment, participants repeatedly voiced this concern. This was supported with findings from the Parent Survey; according to the survey, 74% of parents of students who doesn't walk or bike to school stated that violence or crime is one of the main factors for not allowing their child to walk or bike to and from Brookhurst Elementary.

Brookhurst Elementary already has high levels of students walking to and from the school. The program can form a group comprised of parents who already walk their child to school, and develop "Bus Routes" and "Bus Stops" to pick up/ drop off students to and from the school. Other "Bus Stop" locations include the Spirit of '76 Mini Park on Brookhurst Street and Lampson Avenue and Pavilion Plaza on Brookhurst Street.

This program should be coordinated with the Weekly Walk-to-School Program.

Recommendation #4: Student Safety Patrol Program

The Student Safety Patrol Program would provide a form of enforcement mechanism at the school during drop-off and pick-up. From the Walking Safety Assessment and Parent Surveys, it was clear that enforcement is needed around the school. Behaviors such as double parking, students crossing mid-block,

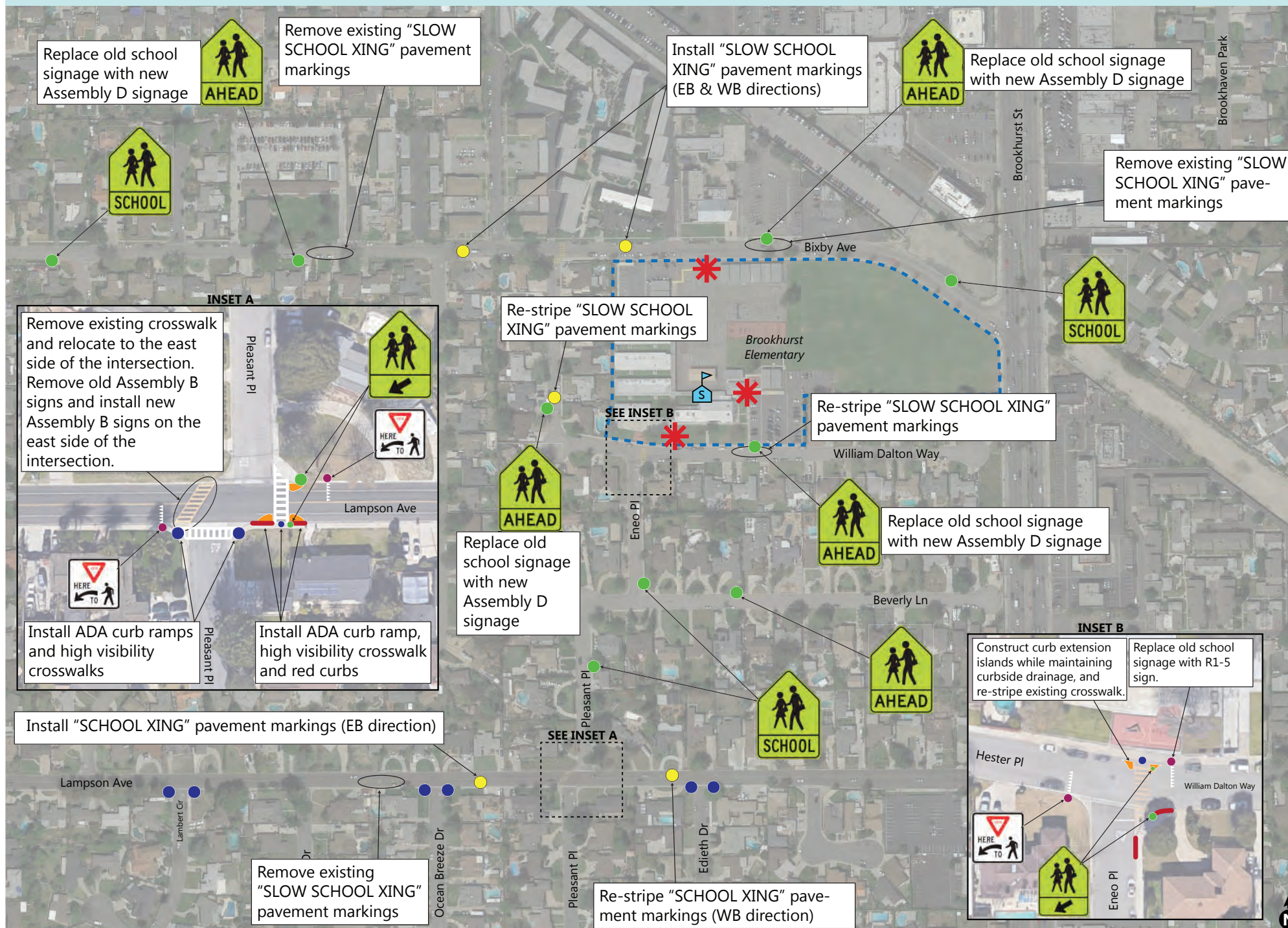
and speeding can be assuaged with the program.

At the Walking Safety Assessment, participants expressed the need for an enforcement program; however, they were hesitant about working with enforcement officers. The school is predominately comprised of minority groups. Within a quarter of a mile from the school, the community population is consisted of 39% Asians and 32% of Hispanic/Latino populations. Given the current political climate of interactions between enforcement officers and minority groups, a program that involves enforcement officers may not necessarily be the best option. The Student Safety Patrol Program will strike a middle ground between the need for law enforcement and WSA participants' concern. Brookhurst PTO is already assisting with small tasks around the school during pick-up and drop-off. They can help recruit more parents and students to participate in this program.

Recommendation #5: Drop-Off Point Program

The Drop-Off Location Point Program offers opportunities for students to walk to school while reducing the high levels of vehicular traffic on roadways near Brookhurst Elementary. According to comments received from the Walking Safety Assessment and Parent Surveys, parents stated that walking and bicycling to school is a challenge due to the long distance between home and school. The Drop-Off Point Program would continue to allow students to arrive to and depart from the school via personal vehicles, but participate in active transportation activities to and from Brookhurst Elementary. Local destinations such as the Pavilion Plaza on Brookhurst Street and Regal Cinema on Chapman Avenue can be excellent drop-off points; they are located within a half an hour walk of the school, and offer plenty of parking for parents to drop off and pick up their students.

6.7 BROOKHURST ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



SCHOOL

- School
- School Access Location
- School Boundary

PROPOSED IMPROVEMENTS

- School Crosswalk
- Crosswalk
- Red Curb (no parking)
- ADA Curb Ramp
- Traffic Sign
- School Signage
- School Pavement Marking
- Bulbout / Curb Extension

Engineering & Operational Improvement Notes

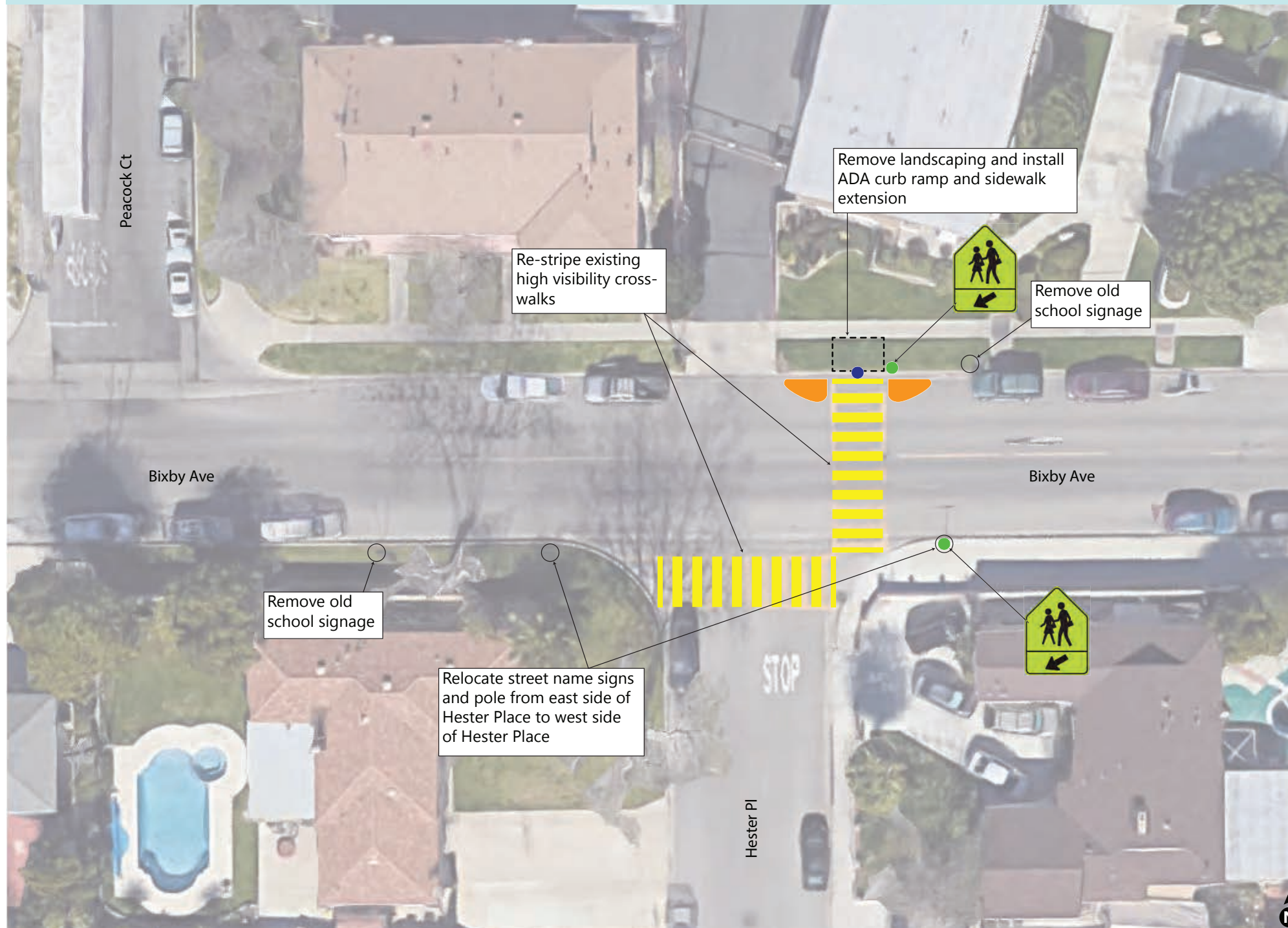
Implement/Upgrade school area signage to meet current CA-MUTCD standards

Inset A: Provide for upgraded pedestrian crossing of uncontrolled approaches with new signage, crosswalks and markings, advanced yield lines, and red curbs to improve sight distance between drivers and pedestrians.





Inset B: Provide for upgraded pedestrian crossing of uncontrolled approaches with new signage, crosswalks and markings, advanced yield lines, curb extensions, and red curbs to improve sight distance between drivers and pedestrians and to decrease pedestrian crossing distance.



6.7 BROOKHURST ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



PROPOSED IMPROVEMENTS

-  School Crosswalk
-  ADA Curb Ramp
-  School Signage
-  Bulbout / Curb Extension

Engineering & Operational Improvement Notes

6.8 INFRASTRUCTURE RECOMMENDATION DETAILS

Recommendations:

Install the following:

SIGNS:

- 4 x R1-5: Yield Here to Pedestrians
- 5 x SW24-1 (CA) School (Assembly A)
- 6 x SW24-2 (CA) School Crossing w/arrow (Assembly B)
- 5 x SW24-3 (CA) School Crossing Ahead

CROSSWALKS:

- 3 x High visibility yellow school crosswalks
- 2 x High visibility white crosswalks

PAVEMENT MARKINGS:

- 3 x "SLOW SCHOOL XING"
- 2 x "SCHOOL XING"
- 4 x Shark teeth yield lines

CURB PAINTING:

- Red curb areas at various locations

ROADWAY MODIFICATIONS:

- 7 x curb extension islands at three pedestrian crossing locations.

CURB RAMPS:

- 11 x ADA compliant curb ramps

Discussion:

Students walk along Bixby Avenue to reach destinations west and north of Brookhurst Elementary. The Bixby Avenue corridor has outdated school signs and pavement markings. New school signs and pavement markings are recommended to warn motorists of students crossings ahead.

The intersection of Bixby Avenue and Hester Place is one of the most heavily-utilized segments by Brookhurst Elementary students and parents. The elementary school has a back entrance which allows parents and school buses to drop-off and pick-up students. At the intersection of Bixby Avenue and Hester Place, Walk Audit participants commented about high speeds and their unsafe pedestrian crossing experiences.

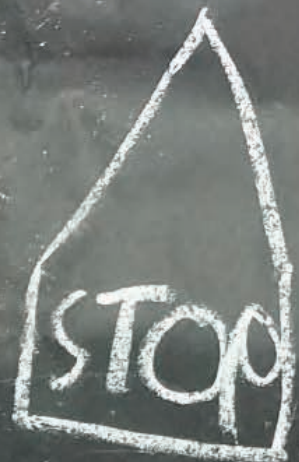
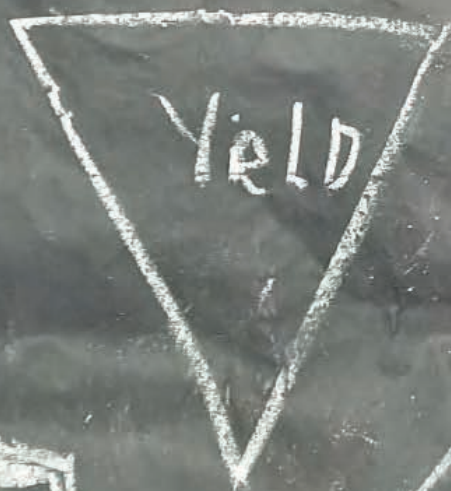
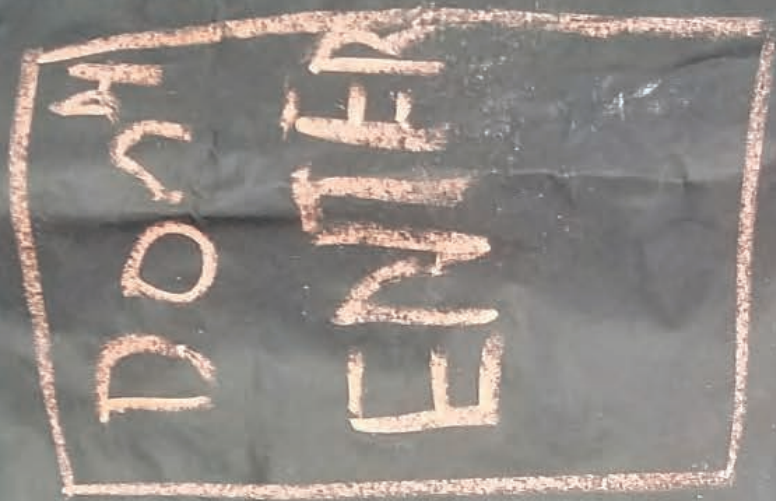
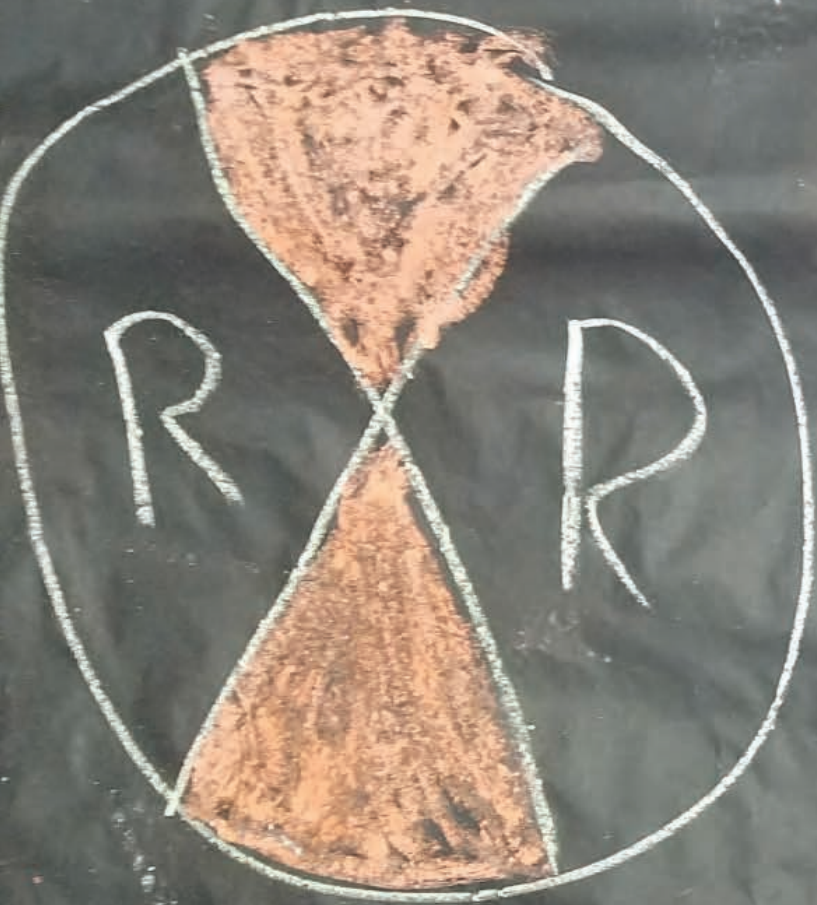
Newly-painted crosswalk, ADA curb ramps, and school signs at the intersection of Bixby Avenue and Hester Place can improve pedestrian visibility crossing Bixby Avenue.

The recommendations call for new school signs and pavement markings which will warn motorists of pedestrian crossings at various locations as indicated in the infrastructure improvement map.

Cost Summary

The cost estimate table below summarizes the Brookhurst Elementary area cost estimates for implementation, based on the cost assumptions described previously in Chapter 4 of this Plan.

SEGMENT	IMPROVEMENT	UNIT	COST	QTY	TOTAL	
Brookhurst Elementary	New Sign & New Post	Each	\$300	15	\$4,500	
	New Sign on Existing Post	Each	\$150	5	\$750	
	School Area Pavement Marking (Per Word)	Each	\$210	17	\$3,570	
	High Visibility Ladder Crosswalk	Each	\$1,480	5	\$7,400	
	ADA Curb Ramps	Each	\$4,968	11	\$54,648	
	Curb Extension - Raised	Per Intersection	\$72,685	1	\$72,685	
	Remove Sign and Post	Each	\$100	2	\$200	
	Paint Curb	Per Linear Foot	\$2	80	\$160	
	Remove Existing Pavement Marking	Per Square Foot	\$3	1180	\$3,540	
	Subtotal					\$147,453
	Design (D) (Subtotal * 15%)					\$22,118
	Environmental (E) (Subtotal * 5%)					\$7,373
	Construction Management (CM) ((Subtotal + D + E) * 10%)					\$17,694
	Mobilization (M) ((Subtotal + D + E) * 5%)					\$8,847
	Traffic Control (TC) ((Subtotal + D + E) * 5%)					\$8,847
	Contingency ((Subtotal + D + E + CM + M + TC) * 15%)					\$31,850
	Segment Total					\$244,182



7. Donald S. Jordan

Intermediate

- 7.1 Introduction
- 7.2 Existing Conditions
- 7.3 Existing Infrastructure
- 7.4 Observed Behaviors
- 7.5 Community Engagement
- 7.6 Programming Recommendations
- 7.7 Infrastructure Recommendations
- 7.8 Infrastructure Recommendation Details

7.1 INTRODUCTION

Donald S. Jordan Intermediate is located on 9821 Woodbury Avenue in the Southern portion of Garden Grove near the intersection of Brookhurst St and State Route 22. Settled in a peaceful residential neighborhood, the school is within walking distance to many local destinations. A.J Cook Elementary is located immediately adjacent to the school, while Bolsa Grande High School is situated at the western terminus of Woodbury Avenue. A strip mall with a Shun Fat Supermarket, Saigon’s Bakery, and Target is located to the East of the school. Other nearby points of interest include the Mall of Fortune, Garden Grove Plaza, and Garden Grove Park and Dog Park.

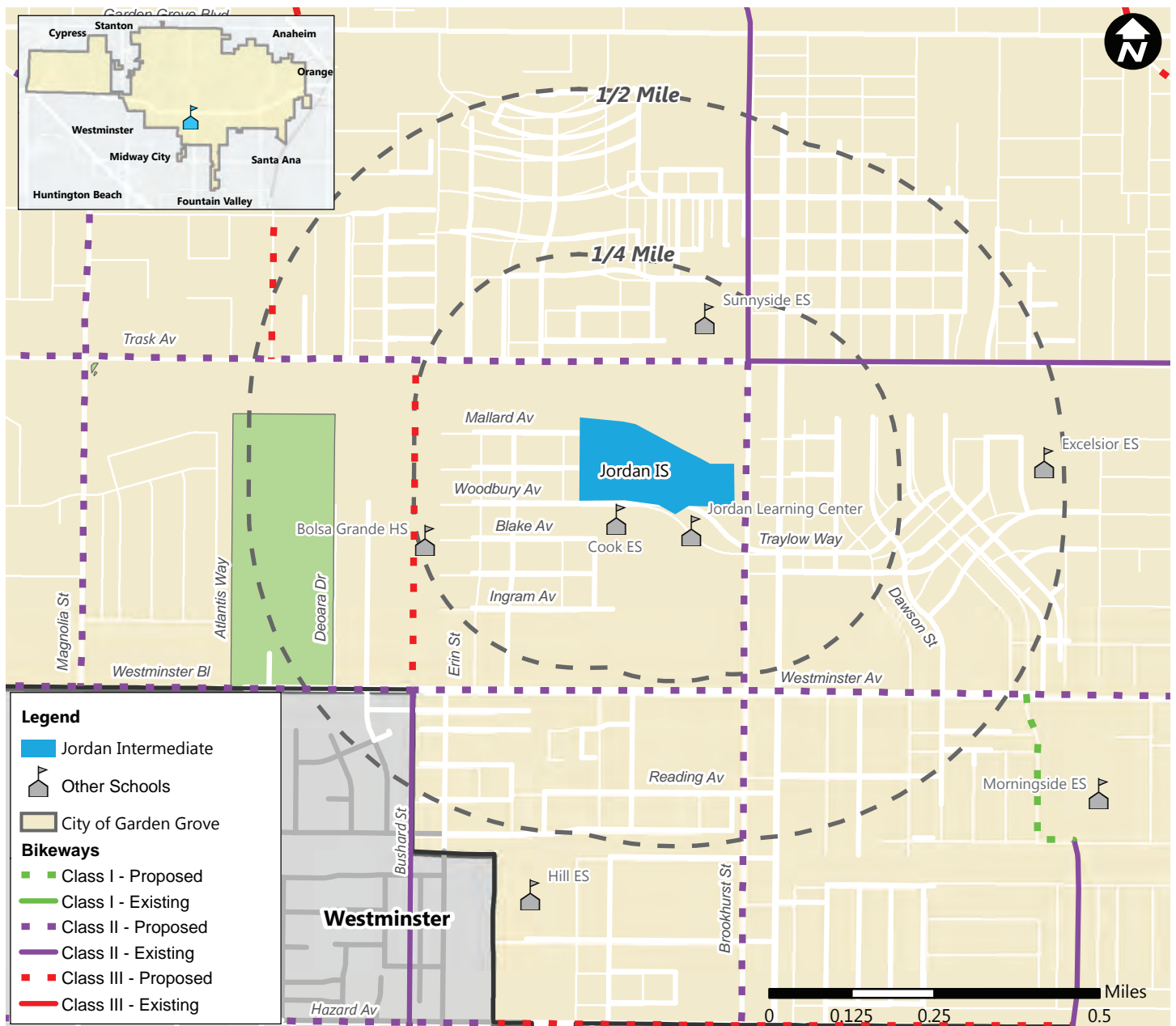


Figure 7-1: Map of School Location

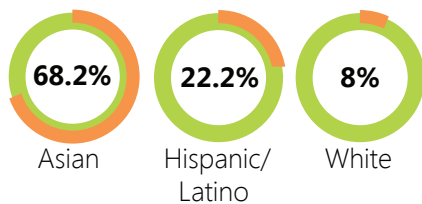
Donald S. Jordan Intermediate School

School Snapshot

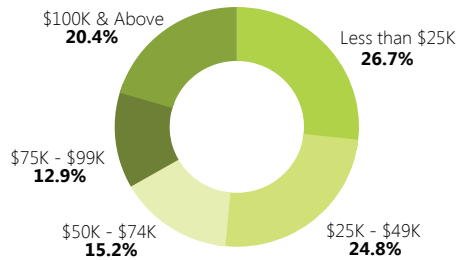
Donald S. Jordan Intermediate enrolled **716 students** in the 2017-2018 school year. Of these students, **23.5%** currently walk and bike to school, while **66.6%** of students are driven to school.

COMMUNITY CHARACTERISTICS

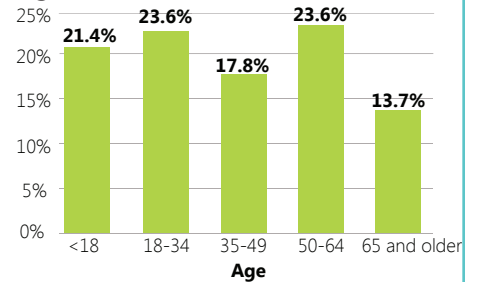
Race



Median Household Income

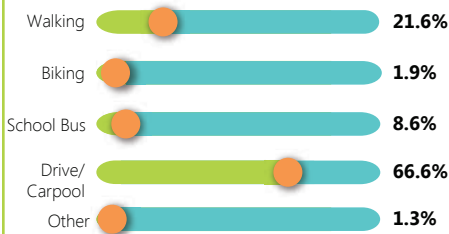


Age

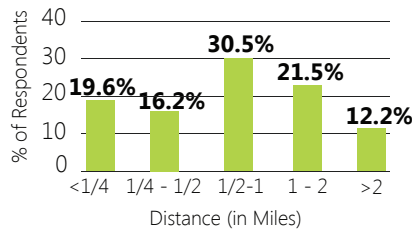


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



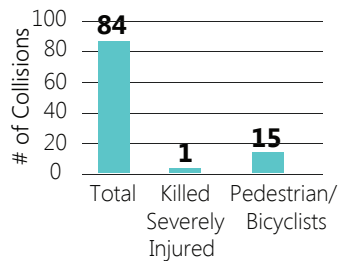
Input from the Community

"I would prefer a crossing guard. I worry about the crosswalk at the freeway. I also worry about traffic."

"I only let my son walk with our neighbors or friends."

SAFETY

Transportation Collisions within 1/4 Mile Radius



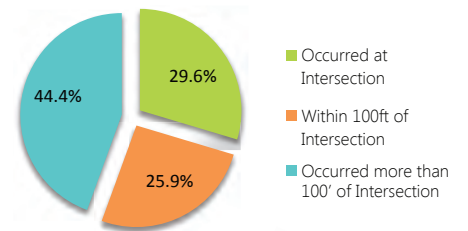
High Collision Roadways

- 1 Brookhurst Street (46)
- 2 Trask Avenue (27)

High Collision Intersections

- 1 Brookhurst Street and Trask Avenue (30)
- 2 Brookhurst Street and Woodbury Avenue/ Traylor Way (19)
- 3 Brookhurst Street and Route 22 (9)

Collision Locations



7.2 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near Jordan Intermediate. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children's access to health care, and communities' exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

Race

	0.25 Mile
White	8.00%
African American or Black	0.40%
American Indian or Native Alaskan	0.70%
Asian	68.20%
Native Hawaii or Pacific Islander	0.00%
Other	0.00%
Two or More	0.50%
Hispanic or Latino	22.20%

Median Household Income

	0.25 Mile
less than \$25,000	26.70%
\$25,000 - \$49,999	24.80%
\$50,000 - \$74,999	15.20%
\$75,000 - \$99,999	12.90%
\$100,000 - \$149,999	14.60%
\$150,000 or More	5.80%

Age

	0.25 Mile
Population under 18	21.40%
Age 18 - 34	23.60%
Age 35 - 49	17.80%
Age 50 - 64	23.60%
Age 65 or Older	13.70%

Language Capabilities

	0.25 Mile
English Only Households	17.10%
Spanish Speaking Households	17.20%
Limited English Speaking Housheolds	26.00%

Collision Type

	#	0.25 Mile
Pedestrian	5	6.00%
Bicycle	10	11.90%
Total Collisions	84	100%
Total Bicycle and Pedestrian	15	17.90%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	1	20.0%
Severely Injured	0	0.0%
Injury (Visible)	2	40.0%
Injury (Complaint of Pain)	2	40.0%
All Injured	4	80.0%
Property Damage Only	0	0.0%

Bicycle Injury Status

	#	0.25 Mile
Fatal	0	0.0%
Severely Injured	0	0.0%
Injury (Visible)	4	40.0%
Injury (Complaint of Pain)	6	60.0%
All Injured	4	40.0%
Property Damage Only	0	0.0%

Health Factors and Environmental Factors

	0.25 Mile
Asthma	26th percentile
Cardiovascular Disease	43rd percentile
Ozone	53rd percentile
PM 2.5	66th percentile
Diesel PM	52nd percentile
Traffic Density	88th percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile surrounding Jordan Intermediate, 84 collisions occurred between 2013 and 2017. Of those collisions, 15 (17.9%) involved a pedestrian or bicyclist, and 46.7% of collisions resulted in visible injuries or fatality. The primary collision factor for collisions involving a bicyclist was the bicyclist riding on the wrong side of the road. Meanwhile, more than half of all pedestrian collisions involved a pedestrian violation.

*Data retrieved from TIMS 2013-2017

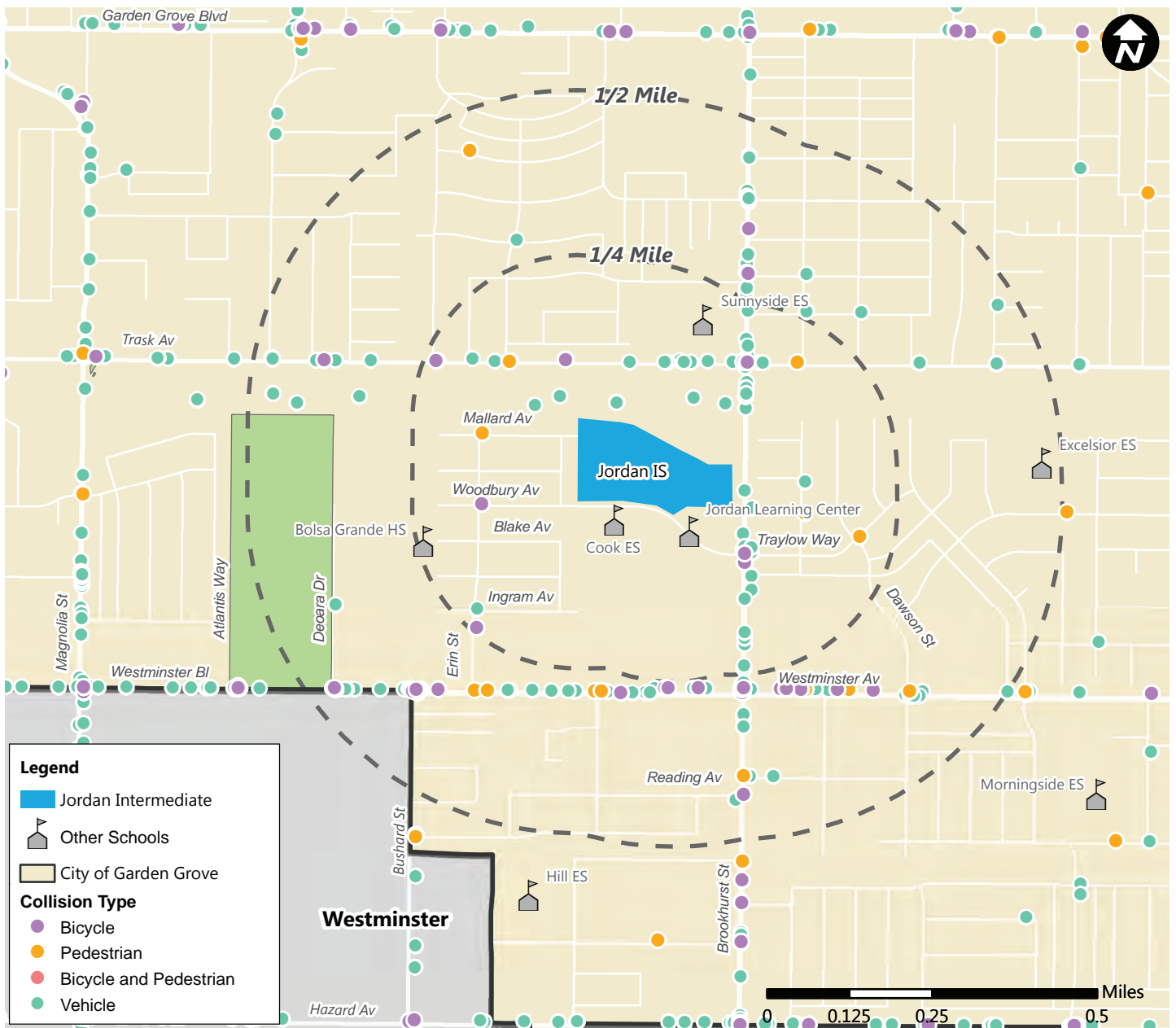


Figure 7-2: Map of Bike and Pedestrian Collisions within a 1/4 and 1/2 Mile of Jordan Intermediate School

Median Household Income

Approximately 50% of households within a ¼ mile of Jordan Intermediate have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$40,852- well below the statewide median household income of \$63,783, the county wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026

*Data retrieved from American Community Survey 2016 Estimates

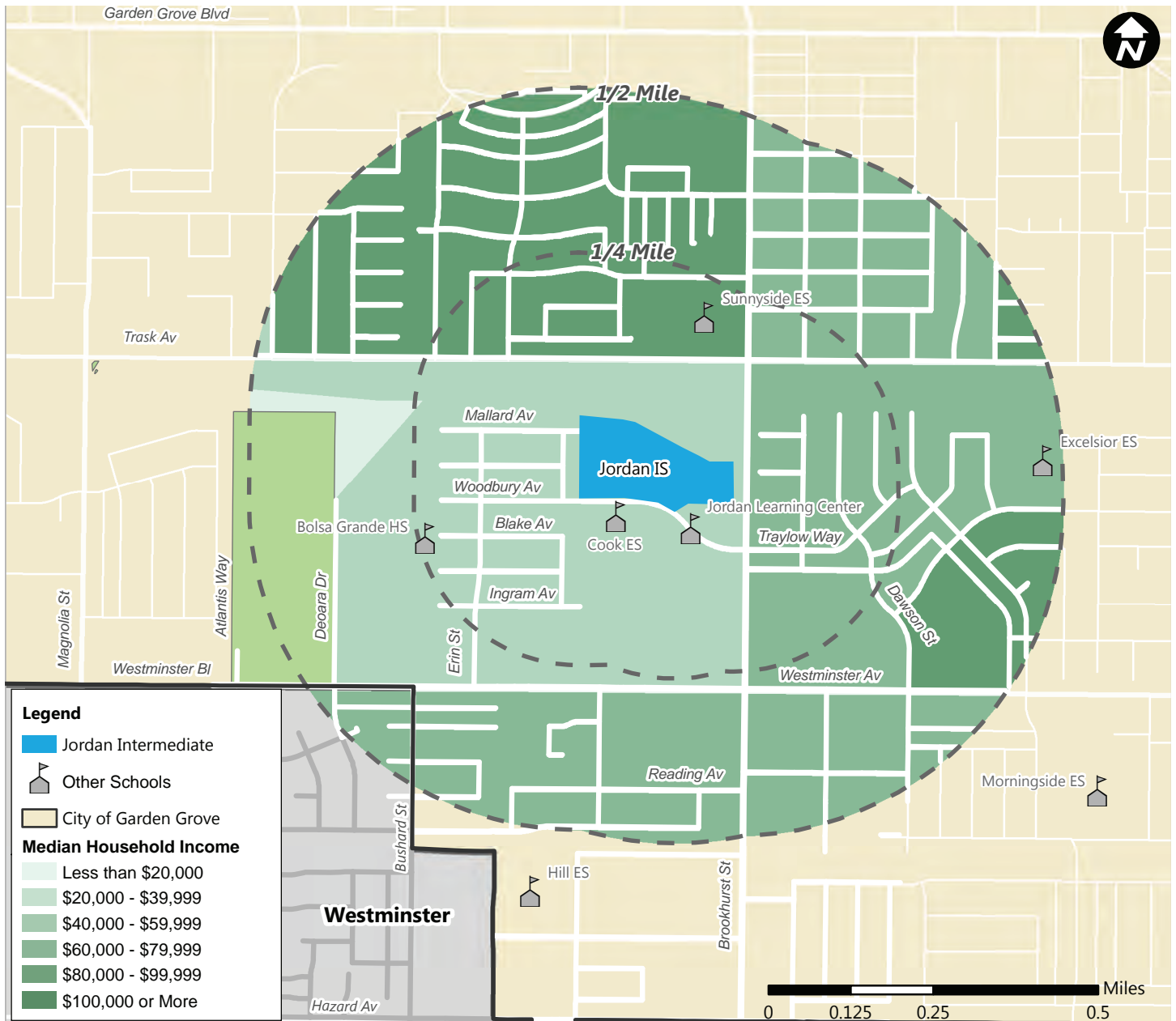


Figure 7-3: Map of Median Household Income

Population Younger Than 18 Years Old

Approximately 1 in 5 (22%) residents living in the ½ mile area surrounding Jordan Intermediate are under the age of 18 and . This rate is just under the citywide population share of 23.1%. Within a ½ mile area, some Census Block Groups have a rate as high as 30%.

*Data retrieved from American Community Survey 2016 Estimates

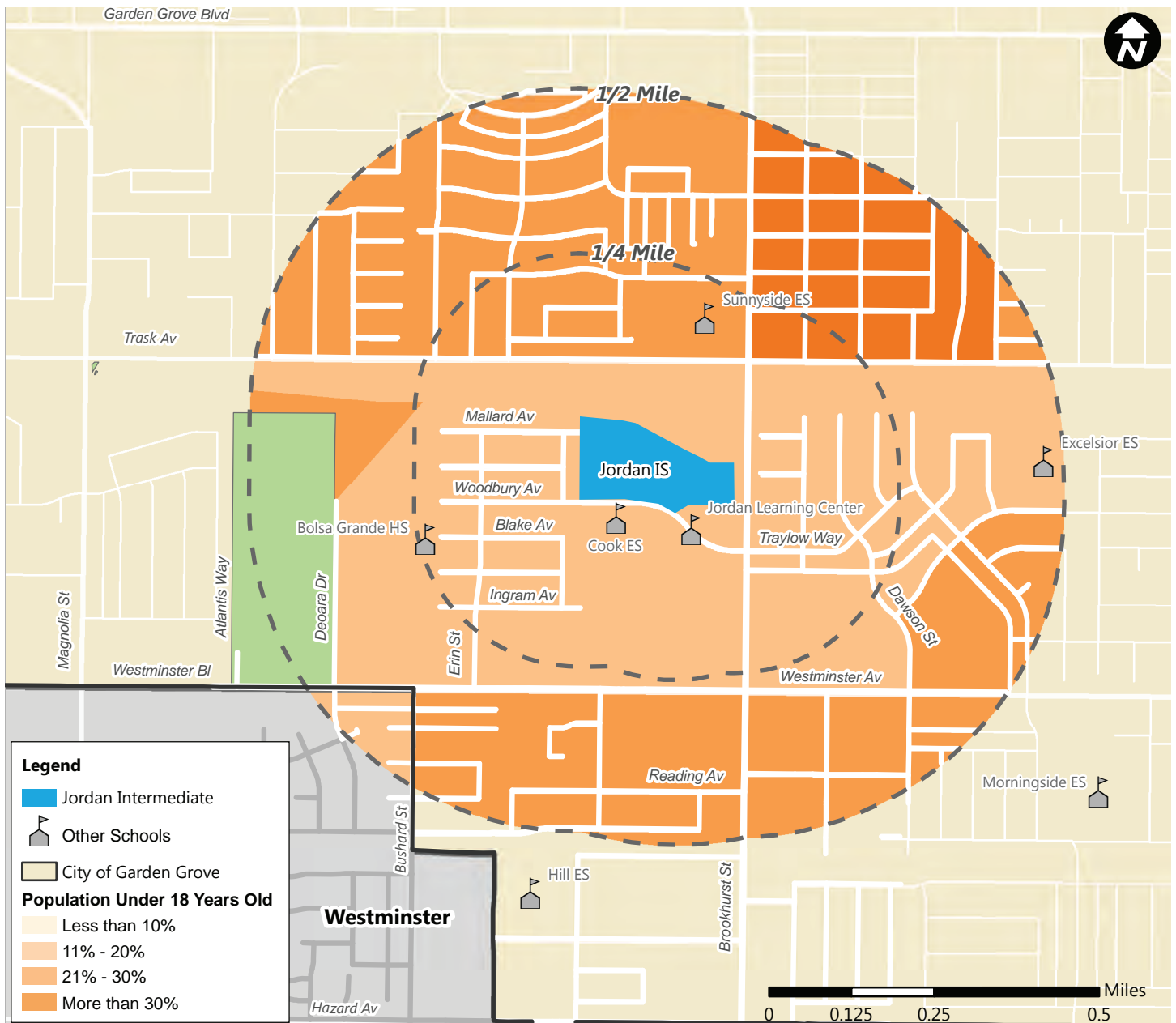


Figure 7-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Jordan Intermediate has a high rate of Asian and Hispanic residents. Approximately 68% of households within a ¼ mile of the school are of Asian descent and nearly 22% of households are of Hispanic or Latino descent. The high level of households that has limited English capabilities correlates to these demographic statistics. An average of 25% of all households has limited English communication abilities, although certain neighborhoods have as many as 50% or more households that have limited English capabilities.

*Data retrieved from American Community Survey 2016 Estimates

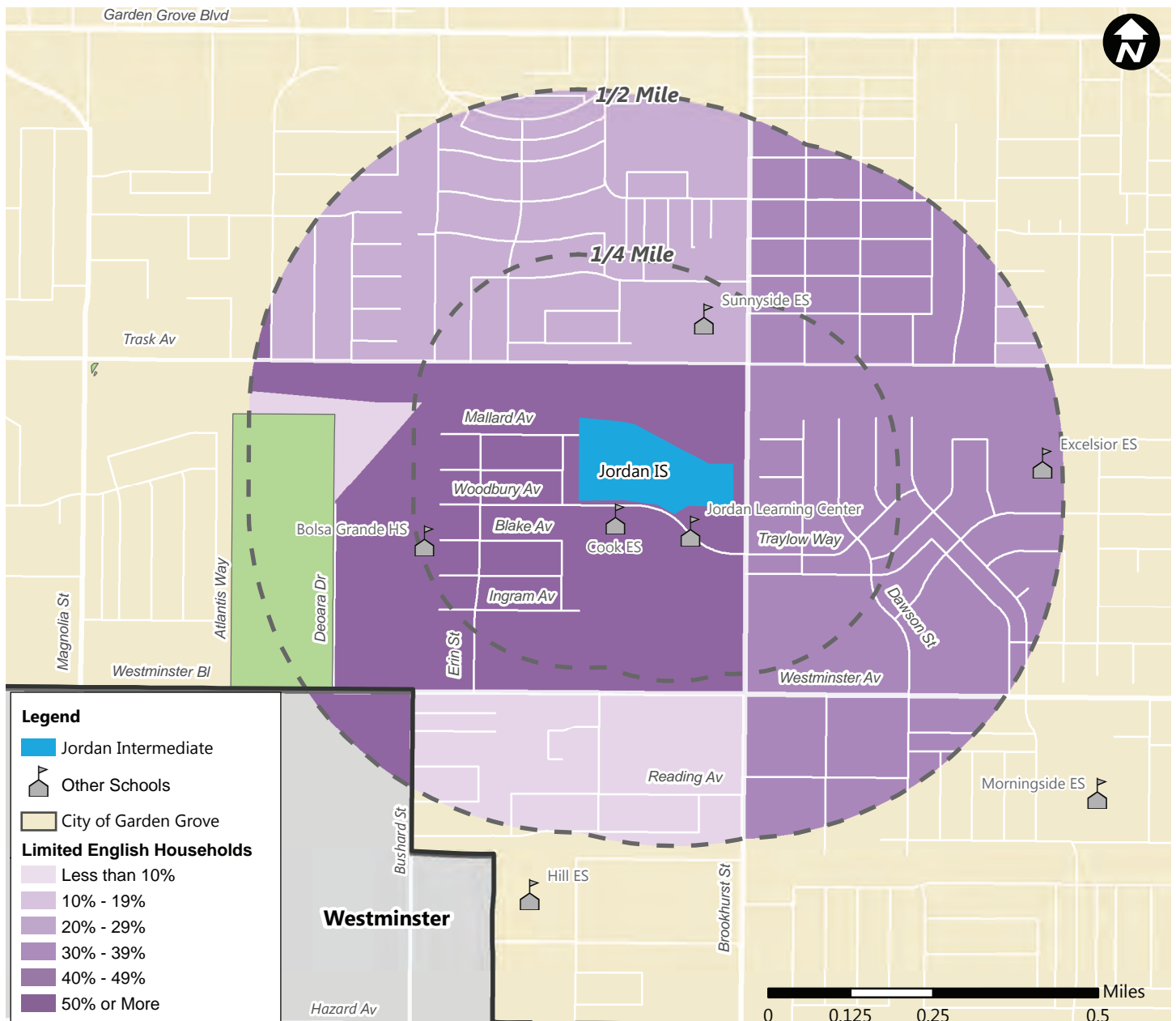


Figure 7-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding Jordan Intermediate are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the school all rank below the 60th percentile of all census tracts in California.

*Data retrieved from CalEnviroScreen 3.0

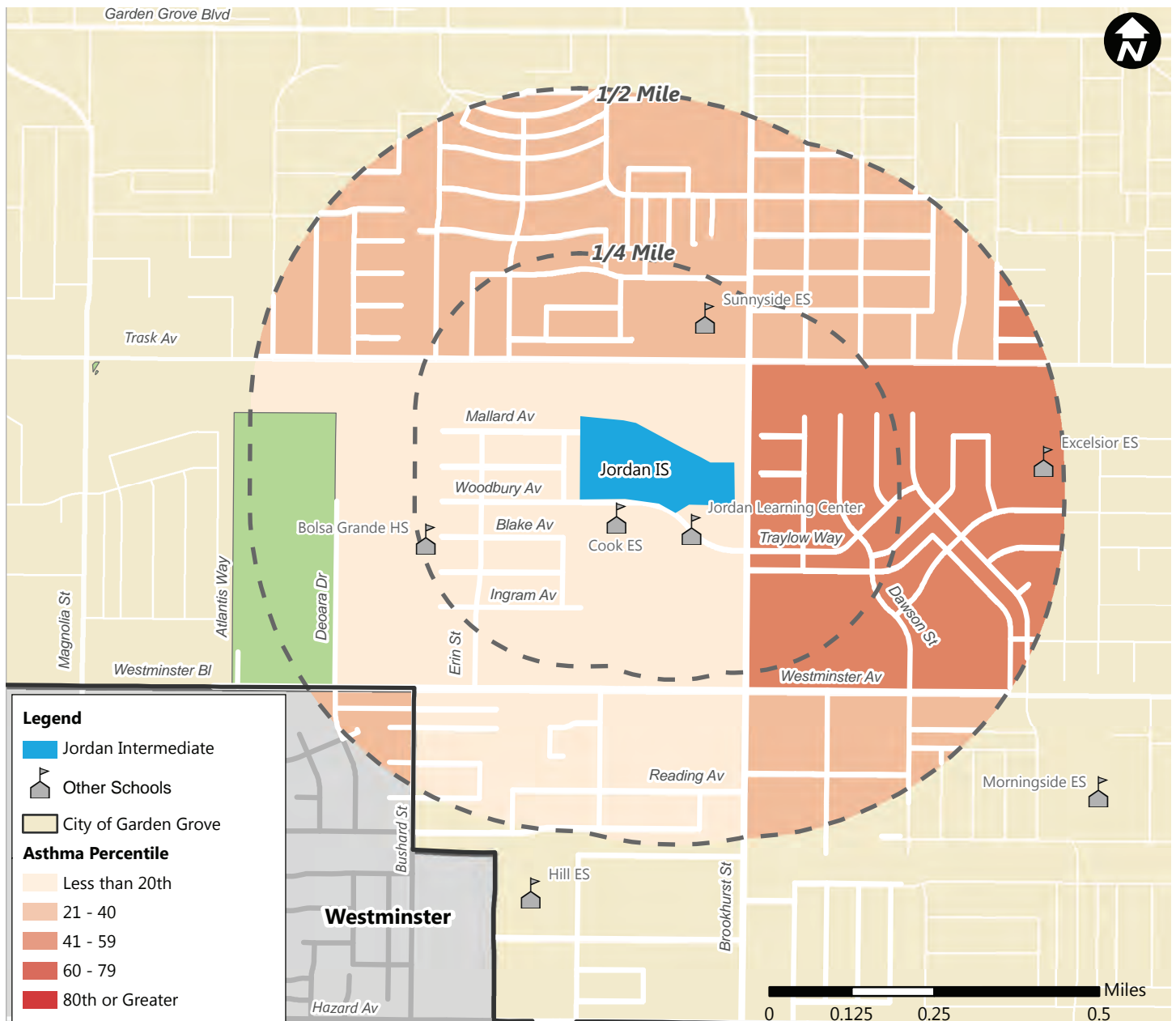


Figure 7-6: Map of Population With Asthma

Households With Cardiovascular Disease

The rates of Cardiovascular Disease-related hospital visits surrounding Jordan Intermediate are generally higher than most areas in California. According to CalEnviroScreen 3.0, multiple census tracts surrounding the school are ranked above the 89th percentile compared to census tracts in California. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood. *Data retrieved from CalEnviroScreen 3.0

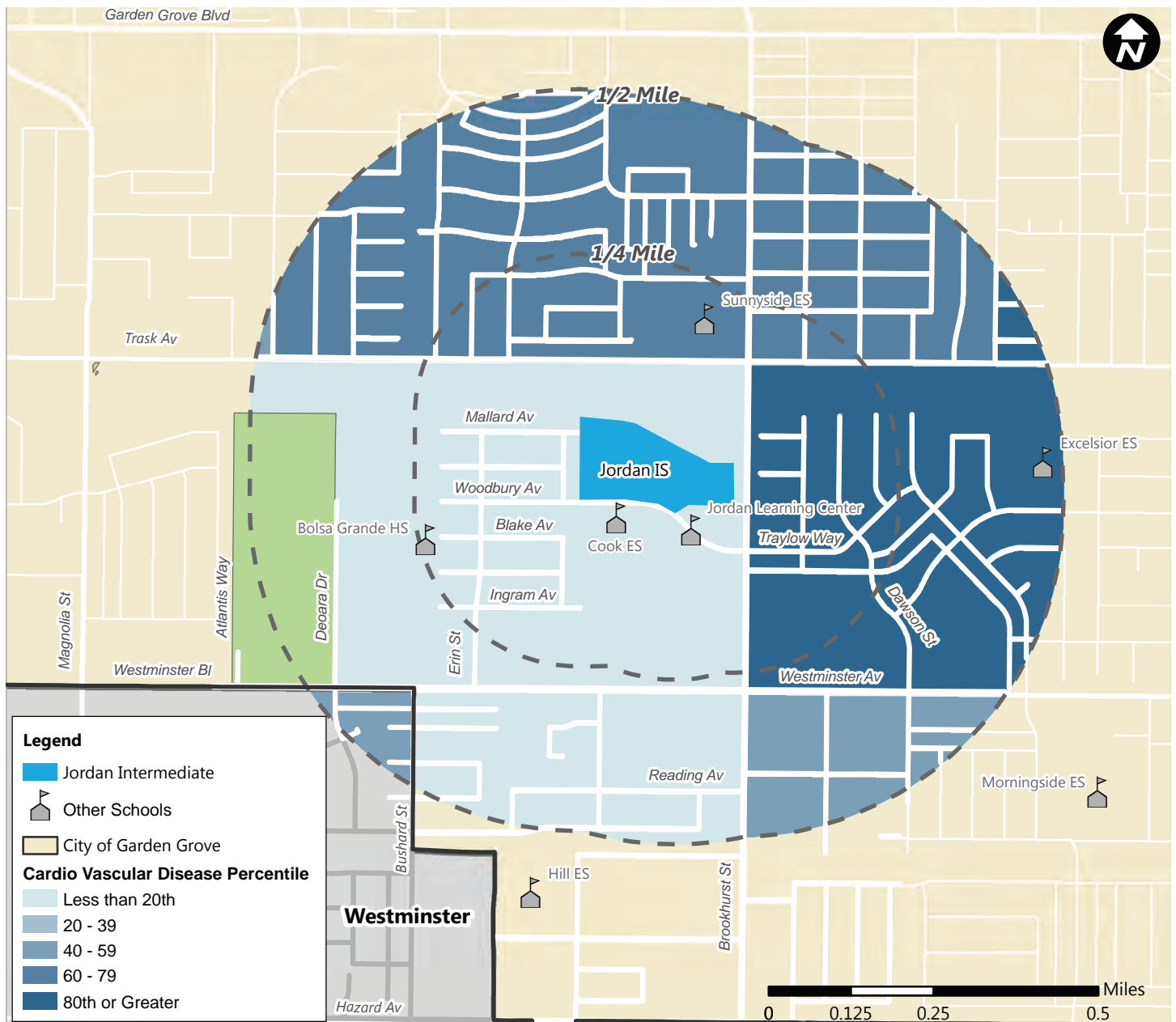


Figure 7-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. However, some census tracts surrounding Jordan Intermediate have a rate of children with no access to health care above 10%.

*Data retrieved from CalEnviroScreen 3.0

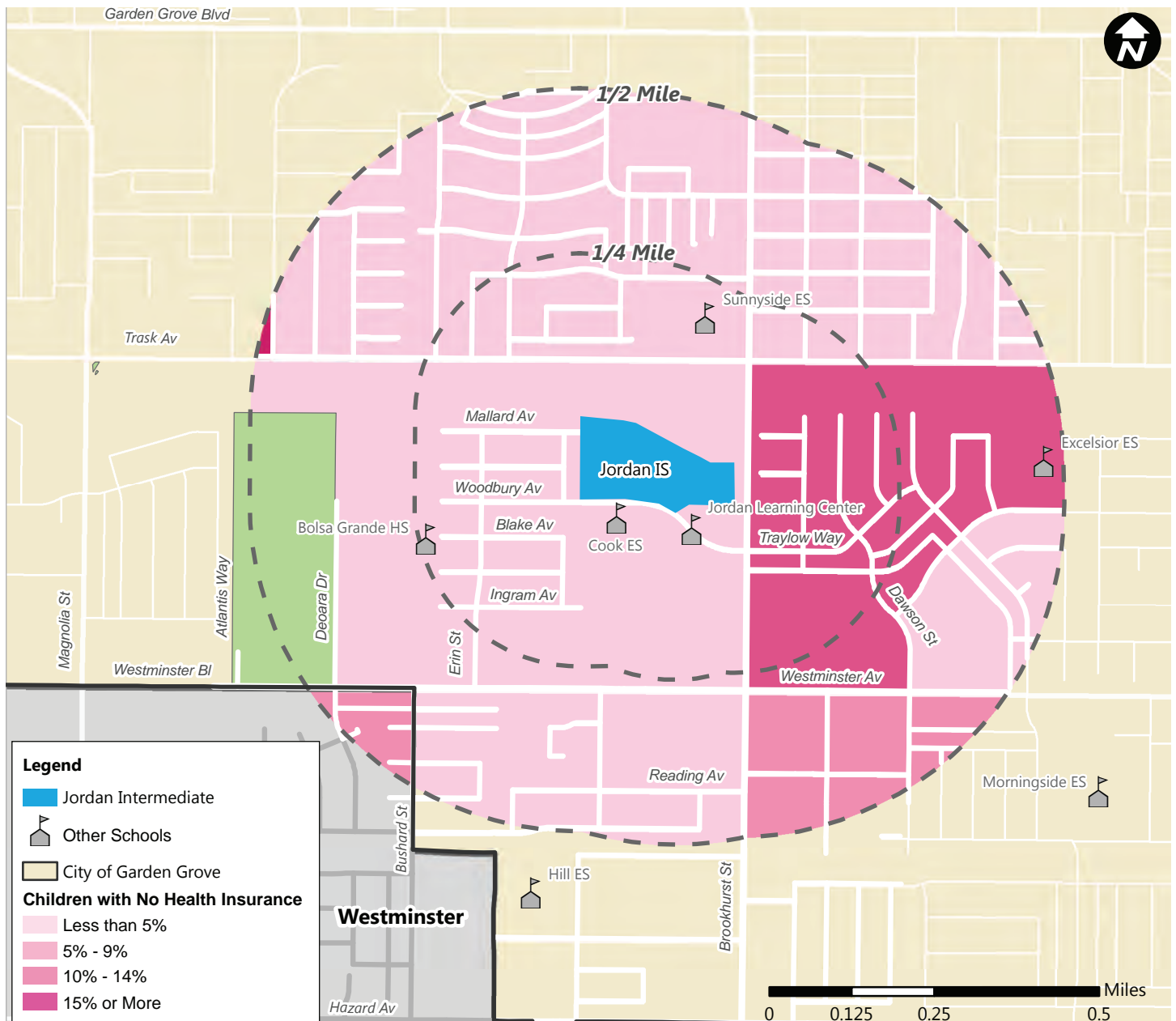


Figure 7-8: Map Of Children With No Access To Health Insurance

7.3 EXISTING INFRASTRUCTURE



Intersection with no traffic control devices on the major or minor road.



Students crossing Woodbury Avenue mid-block.



Lack of ADA-compliant curb ramps on Woodbury Ave.



Uneven sidewalk on Woodbury Ave.



Uncontrolled intersection without curb ramps.



Fading school pavement markings on Woodbury Ave.



Traffic signal with mid-block crossing immediately in front of Jordan Intermediate.



High visibility crosswalk on top of cracked pavement.

7.4 OBSERVED BEHAVIORS

The following presents a list of infrastructure concerns and behavioral issues that were observed at Donald S. Jordan Intermediate.

Jordan Drop-Off Parking Lot Area

- Majority of motorists traveling eastbound on Woodbury Avenue and some traveling westbound enter the parking lot to drop-off and pick-up students.

Jordan Staff Parking Lot

- This parking lot is closed for all traffic except for school buses and staff vehicles.
- Vehicles parked along the south side of Woodbury Avenue at the intersection approach, blocking vehicles from making right-turns.
- Long vehicle queue along Woodbury Avenue for the eastbound left-turn movement.
- Motorists along Woodbury Avenue at the eastbound approach block the driveway entrance to the Target parking lot.

Woodbury Avenue and Cork Street

- Uncontrolled 3-way intersection.
- Motorists drive too fast down Woodbury Avenue to notice pedestrians crossing the roadway.
- High visibility crosswalks are present, however they are painted on cracked road surface.
- Curb ramps are present, but missing truncated dome surface pad to be fully ADA-compliant.
- Parked vehicles on south side of Woodbury Avenue presents a visibility concern for pedestrians crossing the roadway.

Woodbury Avenue and Erin Street

- Stop controlled on Erin St.
- Doesn't have marked crosswalks.
- High levels of cut through traffic to reach Bolsa Grande High School.
- Elementary, Intermediate, and High School students cross at this intersection.

Woodbury Avenue and Teal Avenue

- High school students cross at this intersection and cross mid-block along segment of Erin Street between Teal Avenue and Woodbury Avenue.

Woodbury Avenue

- Motorists traveling at higher speeds than posted speed limit.
- No school signage along entire roadway, except at Woodbury Street and Cork Street crosswalks.
- Some pedestrians crossing the roadway between intersections.
- Vehicle/pedestrian conflicts at Cook's parking lot exit driveway.
- Motorist making U-turns along the roadway.

Erin Street

- Motorists traveling at higher speeds than posted speed limit.
- Intersections along Erin Street are uncontrolled.
- Some intersections provide no curb ramps.



7.5 COMMUNITY ENGAGEMENT

The City strove to implement infrastructure improvements that not only responded to the community's needs and address their concerns, but were also feasible within engineering limitations. To gather community input, the City conducted Walking Safety Assessments (WSA), collected Parent Surveys, and worked with teachers to collect Student Travel Tallies in classrooms. The City also collaborated with Jordan Intermediate School staff and Garden Grove Unified School District staff to market the project to the Jordan Intermediate School community, nearby businesses, and local organizations.

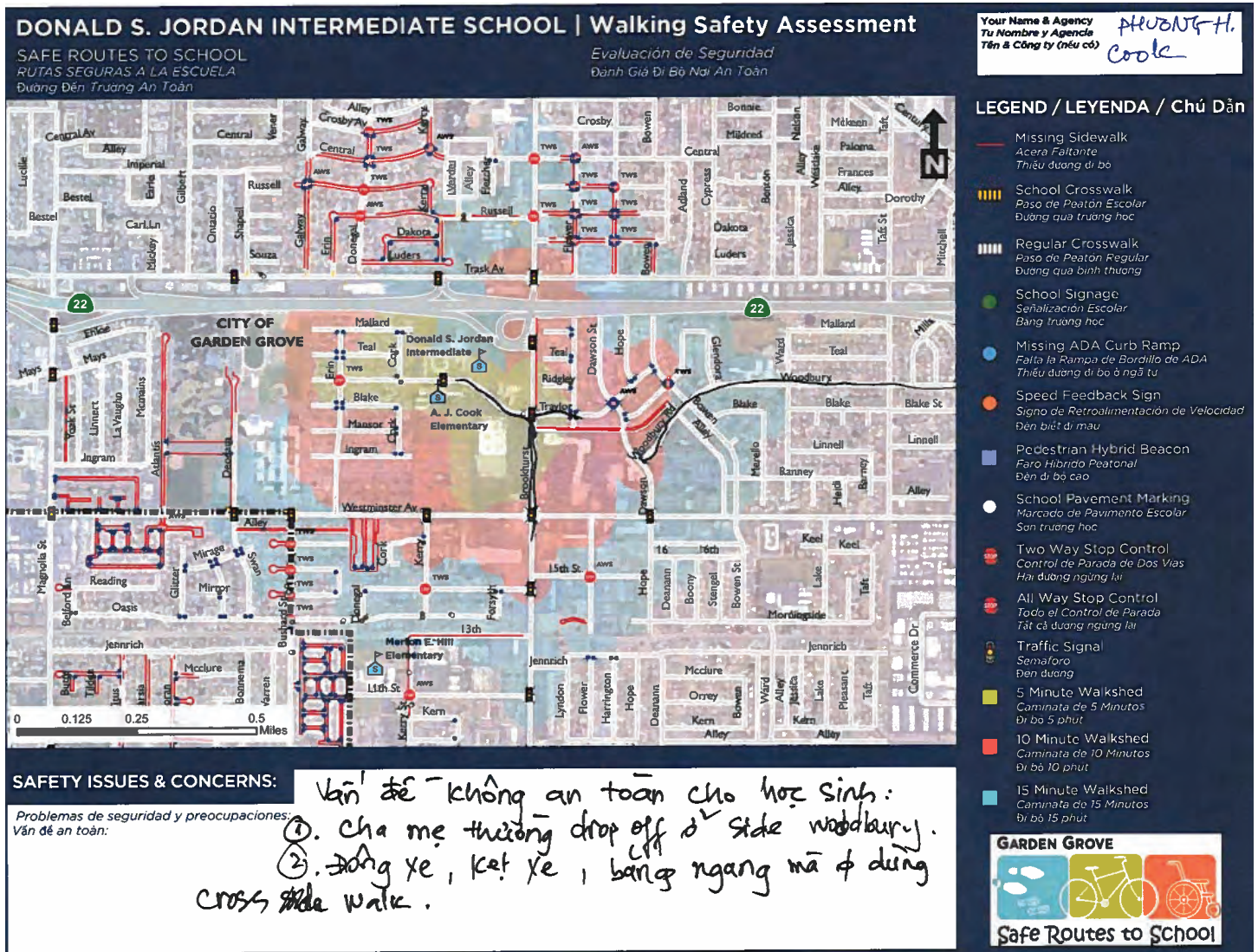


Figure 7-9: Map used at Walking Safety Assessment with comments from event participant

Walking Safety Assessment

The Project Team hosted a Walking Safety Assessment on November 9, 2017 to afford community members an opportunity to express their concerns and explore ideas to improve the roadways surrounding the school. A total of 20 parents and key stakeholders dedicated their valuable time to participate in the event.

Key stakeholders included:

- Parents/Guardians
- Jordan Intermediate Staff
- GGUSD Staff
- Garden Grove Police
- City Staff

At the Walking Safety Assessment, participants walked around the vicinity of schools, discussed key areas of concerns and explored a range of improvements that they would like to see. After the walk, participants gathered for a discussion on the primary issues that they saw during the walk, as well as routes that affect them going to and from the school. A wide range of potential solutions were explored during these exercises. Solutions that were discussed aimed at addressing participants' main concerns and adhering to engineering limitations so that the ultimate list of improvements would offer beneficial immediate and long-lasting outcomes to the community.



Participants walking around the school vicinity to identify areas of concerns



Group discussion of traffic concerns along Woodbury Avenue

Parent Surveys

The “Parent Survey About Walking and Biking to School” form from the National Safe Routes to School Center was used as an expanded data collection tool. The survey gathered information such as the distance from a student’s home to school, travel mode distribution, and parent perceptions regarding walking and biking to school.

	Count
Number of Survey Responses	424
# of K-8 Students in All Households	711

Travel Mode Distribution

	Percentage
Walk	21.57%
Bike	1.91%
School Bus	8.58%
Vehicle	63.41%
Carpool	3.22%
Transit	0.36%
Other	0.95%

Distance Between Home And School

	Percentage
Less than 1/4 mile	19.63%
1/4 mile up to 1/2 mile	16.18%
1/2 mile up to 1 mile	30.50%
1 mile up to 2 miles	21.49%
More than 2 miles	12.20%

Parent Concerns About Walking and Biking to School

	Percentage	Rank
Safety of Intersections and Crossings	72.88%	1
Distance	67.69%	2
Violence or Crime	67.69%	3
Amount of Traffic Along Route	66.75%	4
Speed of Traffic Along Route	64.15%	5
Time	62.97%	6
Weather or Climate	62.26%	7
Sidewalks or Pathways	61.32%	8
Convenience of Driving	59.43%	9
Crossing Guards	57.31%	10
Participation in After-School Programs	55.90%	11
Adults to Bike/Walk With	55.19%	12

Student Travel Tallies

The City collaborated with Jordan Intermediate Staff to collect data using the “Safe Routes to School Students Arrival and Departure Tally Sheet”. The Tally Sheet predominately gathers data on travel mode distribution. It supplements the data provided from the Parent Surveys.

	Count
Number of Students Assessed in Tally	439
Number of Trips Assessed in Tally	2407
Morning	1291
Afternoon	1116

Travel Mode Distribution (From Tallies)

	Percentage
Walk	24.03%
Bike	1.59%
School Bus	0.45%
Vehicle	68.80%
Carpool	4.66%
Transit	0.23%
Other	0.23%

Comments retrieved from Parent Surveys

"If there were more safety instructors, I would surely let my child walk/bike home."

"Mi hijo se va caminado no cuento con transporte y la casada de la carretera es peligrosa ya que los chóferes no respetan la luz verde. Muchas gracias también cuando llueve es peligroso."

"Traffic in the mornings and afternoon is crazy. From Sunnyside to Jordan it takes me 10-15 minutes to drive my daughter in the mornings to school. After school, she walks to Sunnyside because of how bad traffic is."

"I don't want my child to walk or ride a bike because we want to drop off and pick up in the school so we know my child is safe."

"Walking has many dangers."

"I would like for kids to walk to school safely."

"My child can walk to/from school, but I still watch/follow my child."

"My daughter is riding Uber because there isn't a bus."



7.6 PROGRAMMING RECOMMENDATIONS

The programs identified in the following section aim to garner momentum for active transportation activities at Jordan Intermediate. The school lacks a Parent Teacher Organization or similar group that can be champions for the Safe Routes to School Programs. However, the school participated in Make Cook and Jordan Safer Day which generated interest in the project.

The City received comments from parents and guardians through the Walking Safety Assessment and Parent Surveys. While many comments can be addressed through engineering improvements, concerns related to crime, safety, and long distances between home and school can be alleviated through encouragement, education, and enforcement programs.

The programming recommendations identified below are four programs that Jordan Intermediate can begin with. Safe Routes to School programming is primarily a volunteer effort, but there are dedicated ongoing resources to support these successful efforts; to that end, the school needs to put some effort towards developing a Safe Routes to School program using school staff and/or recruiting volunteers to begin the programming effort. Once the school builds momentum for the programs identified below, it can move towards other programs discussed in Ch. 4-5 Programming Toolbox.

Recommendation #1: Drop-Off Valet Program

The Drop-Off Valet Program would alleviate some of the traffic congestion on Woodbury Avenue which presents safety concerns for students walking and bicycling to school. Jordan Intermediate is located on Woodbury Avenue, a local residential street that provides access in the East and West directions. During school hours, Woodbury Avenue experience high levels of vehicular traffic.

SRTS volunteers can be positioned along the east side of the west parking lot to assist with traffic flow. Vehicles can arrive at the school from the east on Woodbury Avenue. SRTS volunteers can motion vehicles to come forward to the beginning of the drop-off zone, and assist students with exiting the vehicles. Through this program, vehicles can move quicker through the roadway and have more defined spaces for drop-off, which improves better visibility for pedestrians and bicyclists.

Recommendation #2: Drop-Off Point Program

The Drop-off Point Program offers opportunities for students to walk to school while reducing the high levels of vehicular traffic on Woodbury Avenue. According to comments received from the Walking Safety Assessment and Parent Surveys, parents stated that walking and bicycling to school is a challenge due to the long distance between home and school. The Drop-Off Point Program would continue to allow students to arrive to and depart from the school via personal vehicles, but participate in active transportation activities to and from Jordan Intermediate.

This program will develop a formal program for an existing practice where some Jordan Intermediate parents use the Target Parking Lot as a drop-off point. In addition to the Target Parking Lot, other potential drop-off locations include the Mall of Fortune Parking Lot and Starbucks on Brookhurst Street and

Westminster Avenue which are located within a 15 minute walk from the school. Walking to and from these potential drop-off locations would provide students with 30 minutes of physical activities per day-half of the recommended amount by the Centers for Disease Control and Prevention. The Drop-Off Point Program can be complemented with the Walking School Bus Program which is discussed below.

Recommendation #3: Weekly Walk-to-School Program

The Weekly Walk-to School Program is an encouragement program where Jordan Intermediate can provide small incentives for students to take active transportation to and from school. Many students live within close proximity to the school. According to the Parent Survey, 20% of students live less than a ¼ mile from the school, which is equivalent to less than ten minutes of walking. Another 16% of students live between ¼ and ½ mile from the school, an equivalent to less than 15 minutes of walking. Combined, 36% can walk to school within 15 minutes. Currently, 22% of Jordan Intermediate students already walk to school; this program can encourage more students to take active transportation to and from school.

For Make Cook and Jordan Safer Day, Jordan Intermediate offered a Front of the Line pass for students who participated at the event. The school can offer the pass or similar prize for students who participate in the Weekly Walk-to-School Program.

Recommendation #4: Golden Sneaker Walking Program

The Golden Sneaker Walking Program is a friendly competition between the classrooms to encourage as many students to walk to and from the school. As noted above, more than a third of Jordan Intermediate students live within close proximity to the school. Although the Golden Sneaker Walking Program strives

to encourage students to walk more, students who bike or take other forms of active transportation to school can participate as well. For students that live further away, they can participate by walking or biking during their free time. The classroom with students who walk (or bike) the most wins the Golden Sneaker Award (or another prize).

Recommendation #5: Walk and Roll Day and/or International Walk to School Day

Walk and Roll to School Day is an organized event where students walk or bike to school. International Walk to School Day is a similar effort; however, it is a part of a larger, international-wide event which occurs annually in October. The event can be simple or complex depending on the school's commitment. It can consist of organizing a Walking School Bus and/or providing small giveaways for participants.

To continue building momentum for the SRTS Programming effort, and recruit more parent volunteers to join the effort, Jordan Intermediate could host a Walk and Roll Day (and if time schedule aligns-International Walk to School Day). The school can provide print material and small giveaways. It can also help with marketing the event to Jordan Intermediate parents and other stakeholders.

7.7 DONALD S. JORDAN INTERMEDIATE INFRASTRUCTURE RECOMMENDATIONS



Engineering & Operational Improvement Notes

- (A) Install school crosswalks at all legs of Erin and Woodbury and remove the limit line pavement marking at the eastbound and westbound approaches.
- (B) Install "Slow School Xing" pavement markings at approximately 100 feet approaching the school crosswalks along Woodbury at Cork Street and at pedestrian signal in the east and west directions.
- (C) Install curb bulbout islands (maintaining existing gutter for drainage) at the north and south end of the school crosswalk along Woodbury at Cork Street to provide an 12 foot travel lane in each direction.
- (D) Install school crosswalks at various locations along Erin Street. Remove limit line pavement marking on Erin Street at Westminister.
- (E) Install school crosswalks at north, south and west legs of Woodbury and Brookhurst Street
- (F) Install R10-6 sign at existing stop bar locations near crosswalk
- (G) Replace old SR-1 sign with Assembly A sign
 - Install signs restricting on-street parking from 10 PM to 7 AM, Monday through Friday
 - Install red curb at various locations to improve sight distance

7.8 INFRASTRUCTURE RECOMMENDATION DETAILS

Recommendations

Install the following:

SIGNS:

- 2 x R10-6: STOP Here on Red
- 2 x R3-4: No U-Turn symbol
- 1 x SW24-1 (CA) School (Assembly A)
- 12 x SW24-2 (CA) School Crossing w/arrow (Assembly B)
- 2 x SW24-3 (CA) School Crossing Ahead
- 2 x Warning signs - "Blind Person Area"
- 1 x Regulatory sign - "Do Not Block Intersection"

CROSSWALKS:

- 15 x High visibility yellow school crosswalks

PAVEMENT MARKINGS:

- 3 x "SLOW SCHOOL XING" pavement markings

CURB PAINTING:

- Red curb areas at various roadway segments

SIGNAL HEAD MODIFICATIONS:

- 6 x Cap style head visor replacements
 - To replace existing full circle visors

ROADWAY MODIFICATIONS:

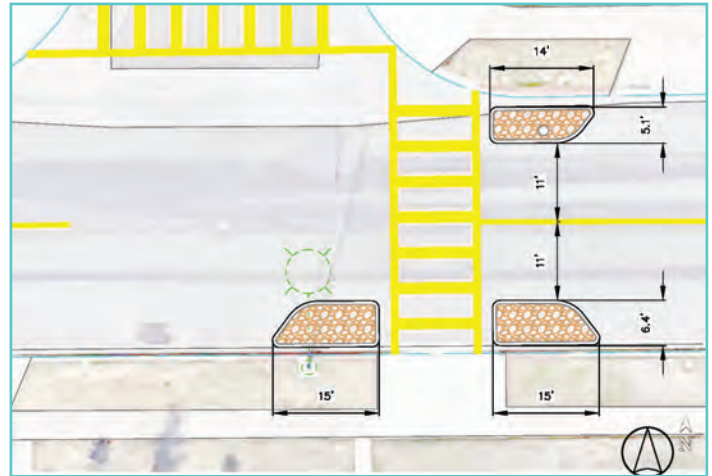
- 3 x curb extension islands at one pedestrian crossing location.

CURB RAMPS:

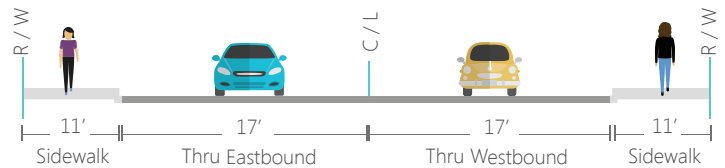
- 10 x ADA compliant curb ramps

Note: The recommendations listed above are the same recommendations as Cook Elementary as they are for the same locations. These should not be considered as separate improvements from those indicated for Cook Elementary.

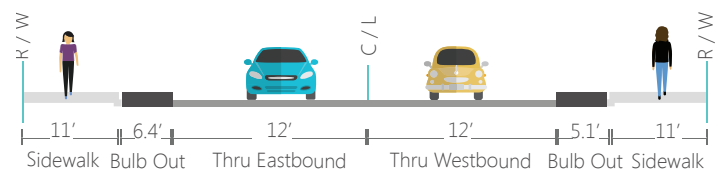
Curb Extension: Concept Plan



Existing Cross Section



Proposed Cross Section with Curb Extension



Discussion:

Pedestrians frequently use the crosswalks at Woodbury Avenue and Cork Street. However, Woodbury Avenue has high levels of vehicular traffic passing through this intersection during the school morning and afternoon hours. The curb extension islands at this crosswalk can help provide better line of sight between pedestrians and motorists, along with shortening the crossing for pedestrians. This improvement also provides traffic calming with reduced lane widths for vehicles traveling through the intersection.

Motorists were observed making U-Turns along Woodbury Avenue adjacent to the school after dropping off or picking up the student(s), along with some double parking along Woodbury Avenue. The new "No U-Turn" symbol signs can help prevent these actions from motorists along Woodbury Avenue.

Improvements to the traffic signal head covers at the Woodbury Avenue and Cook Elementary exit driveway can help provide better visibility of the signal heads to motorist existing the driveway. New traffic signs would remind motorists of pedestrian crossings ahead and the need to stop at the limit lines at this signal.

The painted red curb areas would help prevent motorists from parking immediately in front of the school, which can create better sight visibility for motorists to see pedestrians and other vehicles at the school's driveway location.

Woodbury Avenue also experiences vehicle queuing due to heavy volumes during drop-off and pick-up. The issue is exacerbated with high traffic volumes from Brookhurst Street. The City approved the installation of a new traffic signal to accommodate a left-turn phase for vehicles making left-turn movements onto Brookhurst Street from Woodbury Avenue. This would be installed in the future after further studying the Brookhurst Street corridor.

New "Do Not Block Intersection" signs can assist visitors arriving to and departing from the Target

shopping center by not being blocked by vehicles queuing along Woodbury Avenue at the intersection approach at Brookhurst Street.

Short-term parking issues during drop-off and pick-up, and long-term parking concerns due to vacation buses which parked on-street for extended amount of time contribute to poor visibility of motorist and pedestrians along Woodbury Avenue. Recommendations such as restricting and limiting on-street parking can help address these concerns.

Students walk along Erin Street to reach residential neighborhoods west of Jordan Intermediate and destinations south of the school. However, many intersections along this corridor lack school crosswalks and ADA curb ramps. The proposed crosswalks and ADA curb ramps, along with appropriate school signage, can help provide additional warnings to motorists of pedestrians crossing along the intersections and can help pedestrians better utilize the corridor by crossing at the crosswalk locations and not along mid-block areas.

As Cook Elementary, Jordan Intermediate, and Bolsa Grande High School host a program for the Blind and Visually Impaired, installation of new "Blind Person Area" signs along Woodbury Avenue and Erin Street provide warning to motorists as they travel within the school neighborhood area.

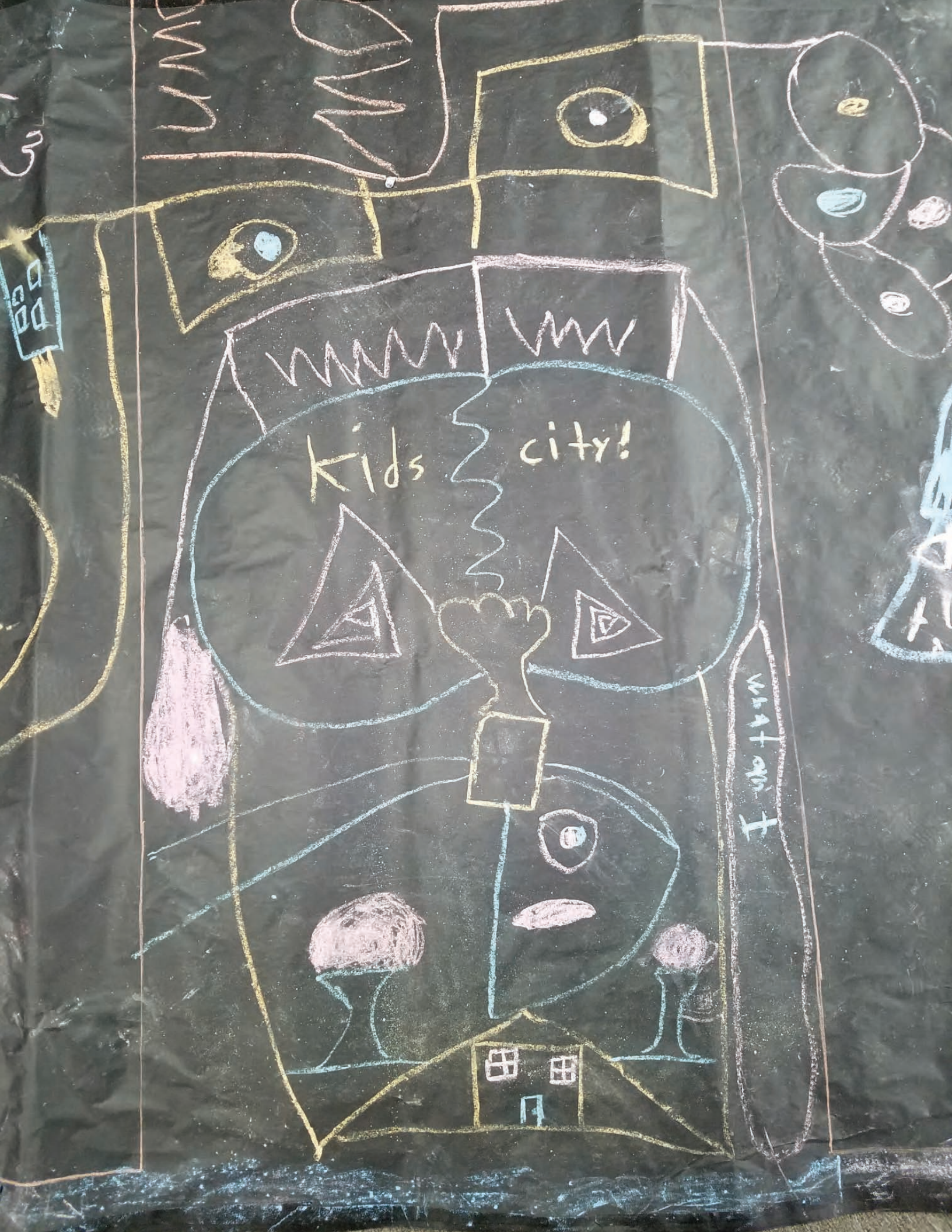
Cost Summary

The cost estimate table below summarizes the Jordan Intermediate area cost estimates for implementation, based on the cost assumptions described previously in Chapter 4 of this Plan.

SEGMENT	IMPROVEMENT	UNIT	COST	QTY	TOTAL	
Jordan Intermediate	New Sign & New Post	Each	\$300	22	\$6,600	
	School Area Pavement Marking (Per Word)	Each	\$210	19	\$3,990	
	High Visibility Ladder Crosswalk	Each	\$1,480	15	\$22,200	
	ADA Curb Ramps	Each	\$4,968	10	\$49,680	
	Curb Extension - Raised	Per Intersection	\$72,685	0.5	\$36,342	
	Paint Curb	Per Linear Foot	\$2	490	\$980	
	Replace Signal Heads	each head	\$1,500	12	\$18,000	
	Subtotal					\$137,792
	Design (D) (Subtotal * 15%)					\$20,669
	Environmental (E) (Subtotal * 5%)					\$6,890
	Construction Management (CM) ((Subtotal + D + E) * 10%)					\$16,535
	Mobilization (M) ((Subtotal + D + E) * 5%)					\$8,268
	Traffic Control (TC) ((Subtotal + D + E) * 5%)					\$8,268
	Contingency ((Subtotal + D + E + CM + M + TC) * 15%)					\$29,763
Segment Total					\$228,184	

Note: The cost assumptions listed above are the same cost assumptions as Cook Elementary as they are for the same locations. These should not be considered as separate costs from those indicated for Cook Elementary.

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8. John Murdy

Elementary

- 8.1 Introduction
- 8.2 Existing Conditions
- 8.3 Existing Infrastructure
- 8.4 Observed Behaviors
- 8.5 Community Engagement
- 8.6 Programming Recommendations
- 8.7 Infrastructure Recommendations
- 8.8 Infrastructure Recommendation Details

8.1 INTRODUCTION

John Murdy Elementary is located on 14851 Donegal Drive in the Southern portion of Garden Grove, adjacent to Little Saigon. The main entrance can be accessed via a quiet residential neighborhood that is located between Bushard Street to the West, Hazard Avenue to the North, Brookhurst Street to the East, and Bolsa Avenue to the South. The school is located in close proximity to countless eateries that serve ethnic cuisines, shops, and civic institutions. This includes San Young Market, Asian Garden Mall, and United States Post Office on Bolsa Avenue, as well as, Bolsa Grande High School, and Garden Grove Park and Dog Park to the North of the school.

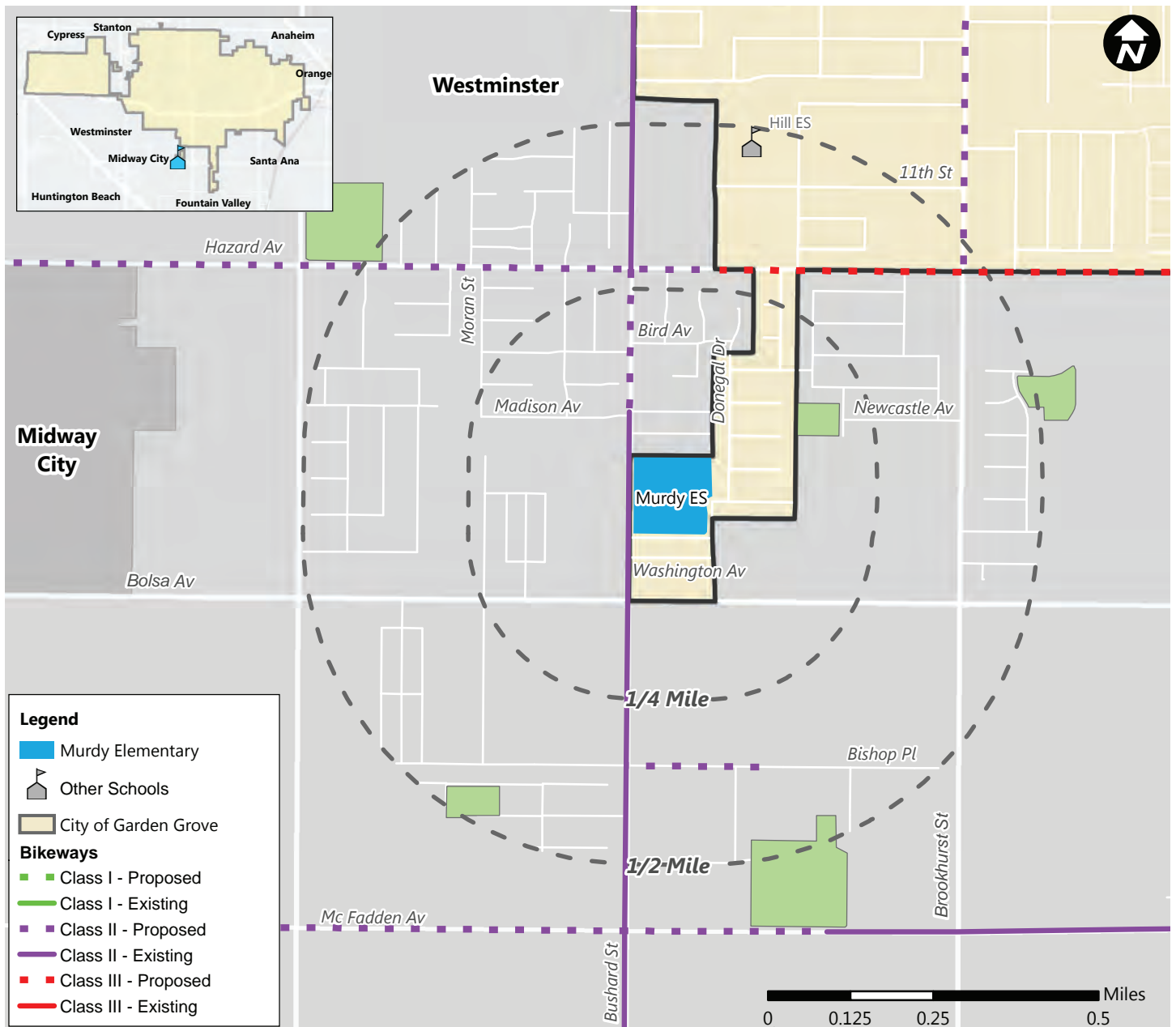


Figure 8-1: Map of School Location

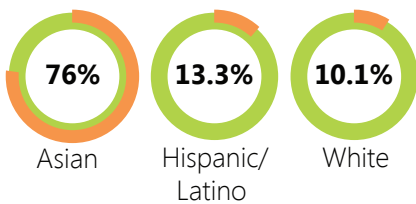
John Murdy Elementary School

School Snapshot

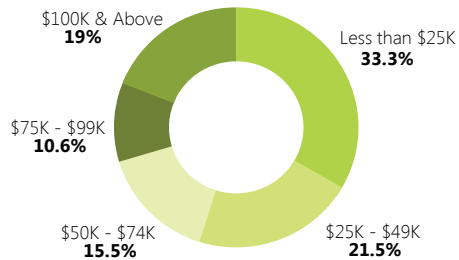
John Murdy Elementary enrolled **462 students** in the 2017-2018 school year. Of these students, **12.8%** currently walk and bike to school, while **78.0%** of students are driven to school.

COMMUNITY CHARACTERISTICS

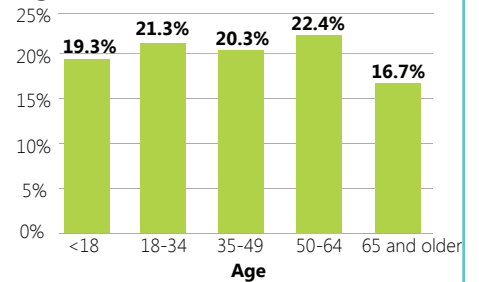
Race



Median Household Income

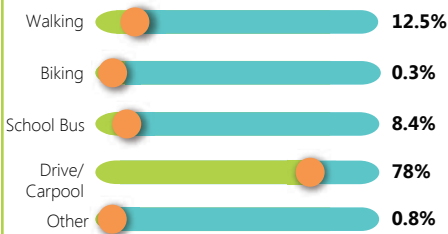


Age

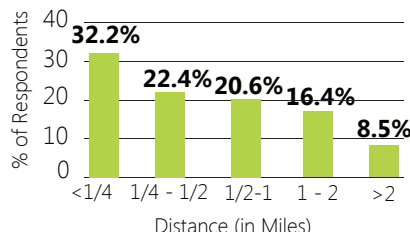


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



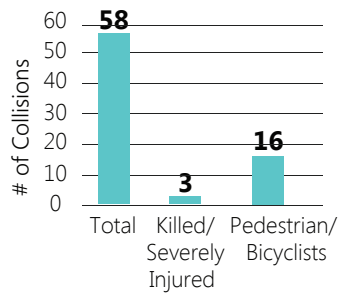
Input from the Community

"I like the idea of my children walk to/from school because it encourages them to become independent and responsible. It enables them to be more confident and secure."

"I think I would like my kids to bike to school in high school."

SAFETY

Transportation Collisions within 1/4 Mile Radius



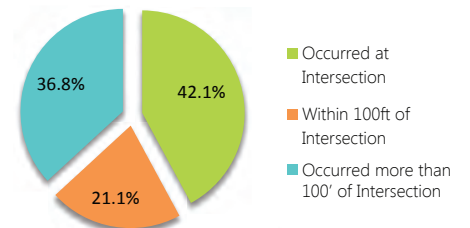
High Collision Roadways

- 1 Bolsa Avenue (32)
- 2 Bushard Street (24)

High Collision Intersections

- 1 Bolsa Avenue and Bushard Street (26)
- 2 Bolsa Avenue and Moran Street (10)
- 3 Bolsa Avenue and Dillow Street (7)

Collision Locations



8.2 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near Murdy Elementary. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children's access to health care, and communities' exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

Race

	0.25 Mile
White	10.10%
African American or Black	0.00%
American Indian or Native Alaskan	0.00%
Asian	76.00%
Native Hawaiian or Pacific Islander	0.00%
Other	0.00%
Two or More	0.60%
Hispanic or Latino	13.30%

Median Household Income

	0.25 Mile
MHHI less than \$25,000	33.30%
MHHI \$25,000 - \$49,999	21.50%
MHHI \$50,000 - \$74,999	15.50%
MHHI \$75,000 - \$99,999	10.60%
MHHI \$100,000 - \$149,999	13.30%
MHHI \$150,000 or More	5.70%

Age

	0.25 Mile
Population under 18	19.30%
Age 18 - 34	21.30%
Age 35 - 49	20.30%
Age 50 - 64	22.40%
Age 65 or Older	16.70%

Language Capabilities

	0.25 Mile
English Only Households	14.40%
Spanish Speaking Households	9.40%
Limited English Speaking Households	35.50%

Collision Type

	#	0.25 Mile
Pedestrian	5	8.60%
Bicycle	11	19.00%
Total Collisions	58	100%
Total Bicycle and Pedestrian	16	27.60%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	2	40.00%
Severely Injured	0	0.00%
Injury (Visible)	1	20.00%
Injury (Complaint of Pain)	2	40.00%
All Injured	3	60.00%
Property Damage Only	0	0%

Bicycle Injury Status

	#	0.25 Mile
Fatal	0	0.00%
Severely Injured	1	9.09%
Injury (Visible)	6	54.54%
Injury (Complaint of Pain)	4	36.36%
All Injured	11	100.00%
Property Damage Only	0	0%

Health and Environmental Factors

	0.25 Mile
Asthma	27th percentile
Cardiovascular Disease	39th percentile
Ozone	53rd percentile
PM 2.5	66th percentile
Diesel PM	54th percentile
Traffic Density	52nd percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile surrounding Murdy Elementary, 58 collisions occurred between 2013 and 2017. Of those collisions, 16 (28%) involved a pedestrian or bicyclist. More than half of the collisions involved resulted in a visible injuries, while 18.7% resulted in severe injury or fatalities.

*Data retrieved from TIMS 2013-2017

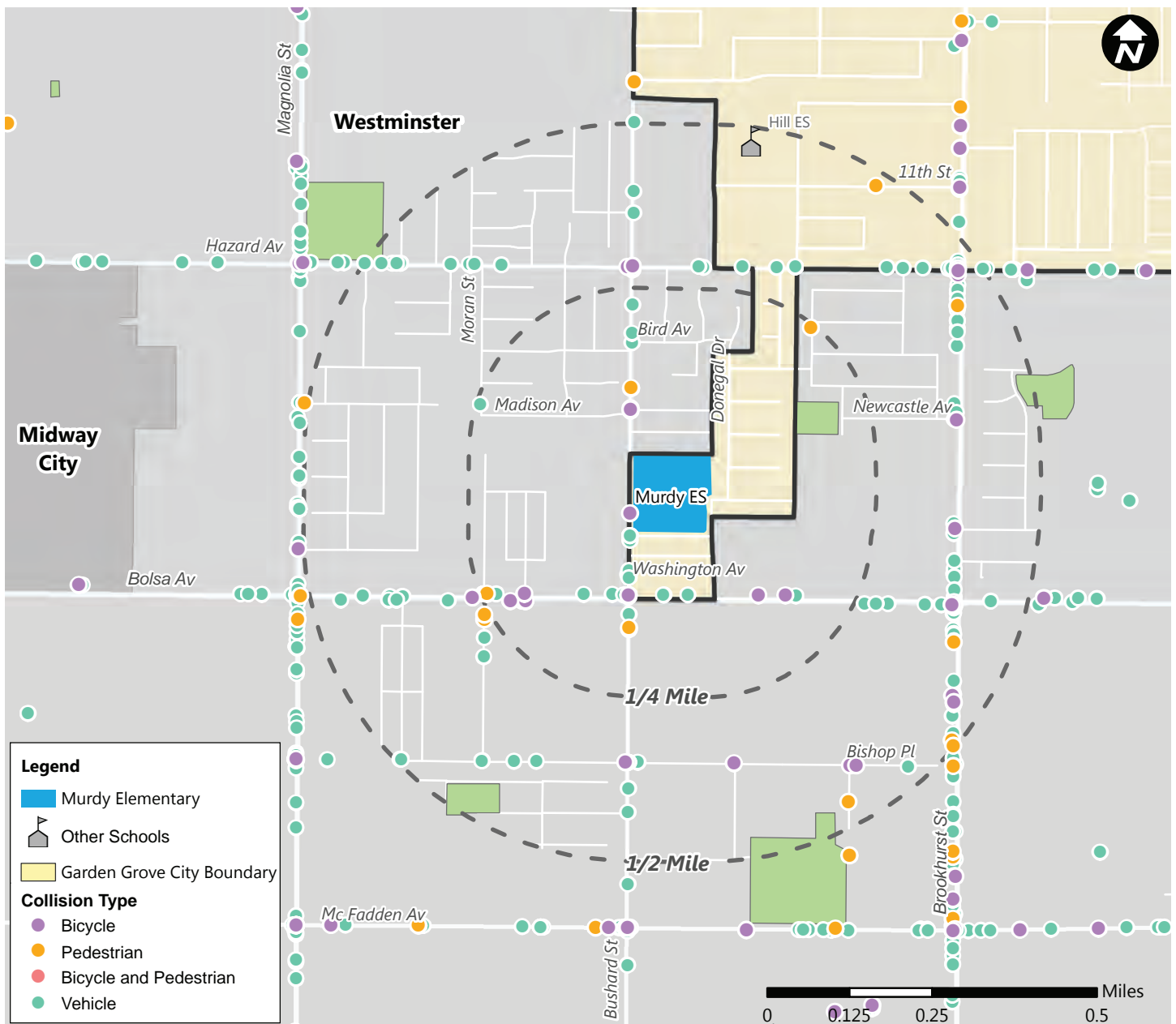


Figure 8-2: Map of Bike and Pedestrian Collisions within a 1/4 and 1/2 Mile of Murdy Elementary

Median Household Income

Almost 50% of households within a ¼ mile of Murdy Elementary have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$44,089- well below the statewide median household income of \$63,783, the county wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026

*Data retrieved from American Community Survey 2016 Estimates

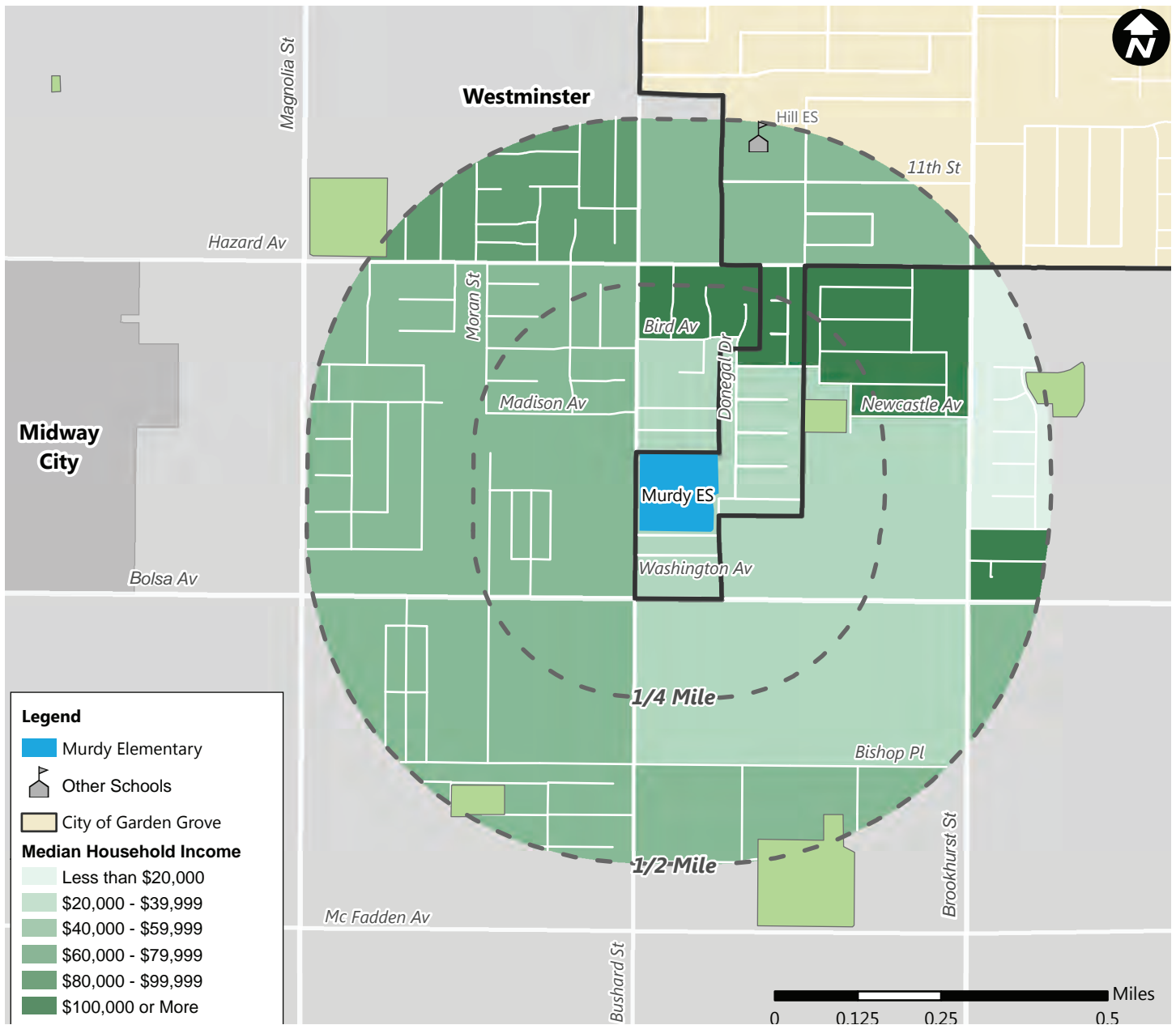


Figure 8-3: Map of Median Household Income

Population Younger Than 18 Years Old

Approximately 1 in 5 (19.3%) residents living in the ¼ mile area surrounding Cook Elementary are under the age of 18. This rate is just under the citywide population share of 23.1%. Within a ½ mile area, some Census Block Groups have a rate as high as 23%.

*Data retrieved from American Community Survey 2016 Estimates

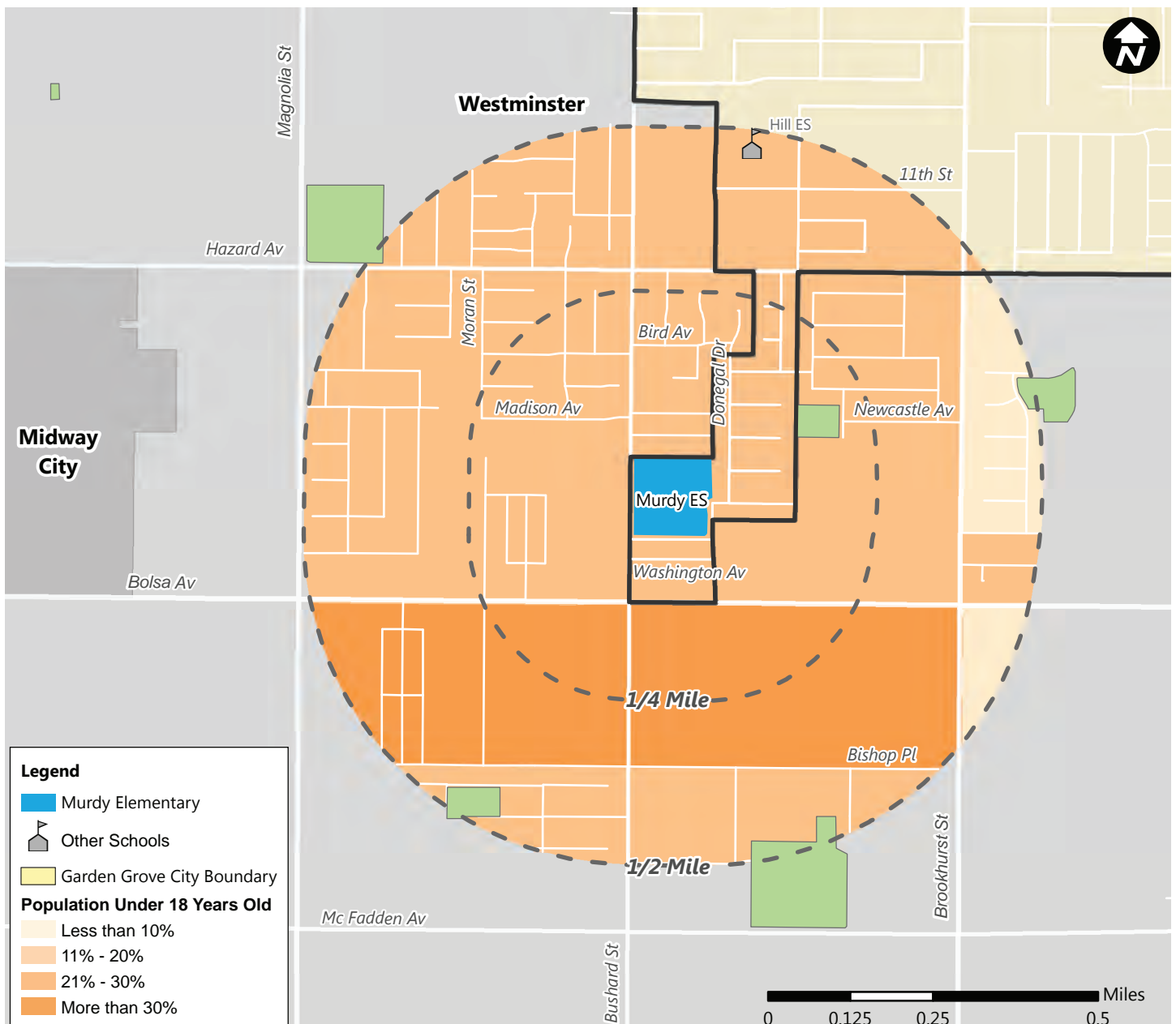


Figure 8-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Murdy Elementary has a high rate of Asian and Hispanic residents. Approximately 76% of households within a ¼ mile of the school are of Asian descent and nearly 13% of households are of Hispanic of Latino descent. The high level of households that has limited English capabilities correlates to these demographic statistics. An average of 35% of all households has limited English communication abilities, although certain neighborhoods have as many as 50% or more households that have limited English capabilities.

*Data retrieved from American Community Survey 2016 Estimates

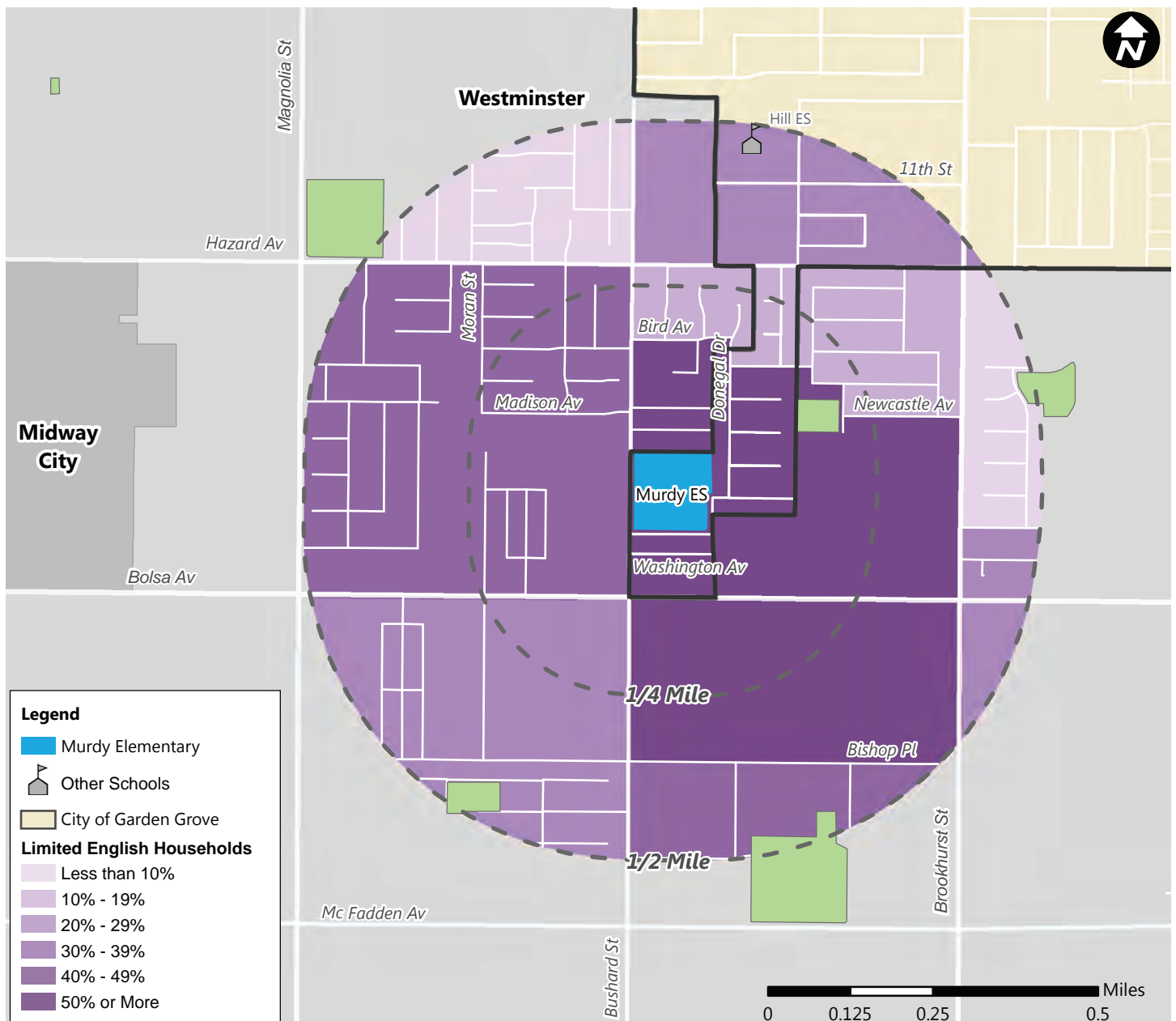


Figure 8-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding Murdy Elementary are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the school all rank below the 40th percentile of all census tracts in California.

*Data retrieved from CalEnviroScreen 3.0

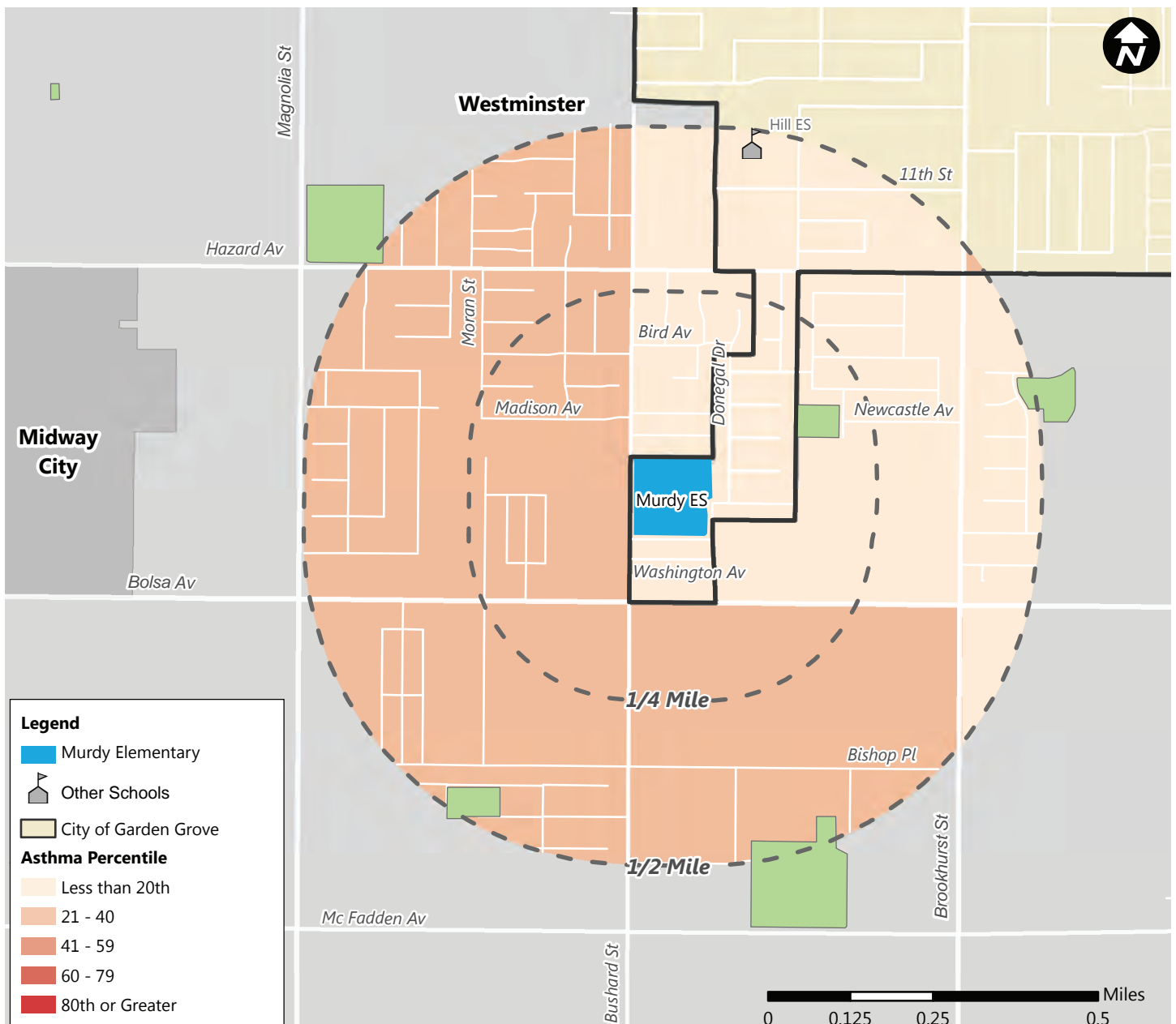


Figure 8-6: Map of Population With Asthma

Households With Cardiovascular Disease

The rates of Cardiovascular Disease-related hospital visits surrounding Murdy Elementary rank at the 39th percentile. According to CalEnviroScreen 3.0, multiple census tracts surrounding the school are ranked above the 60th percentile compared to census tracts in California. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood.

*Data retrieved from CalEnviroScreen 3.0

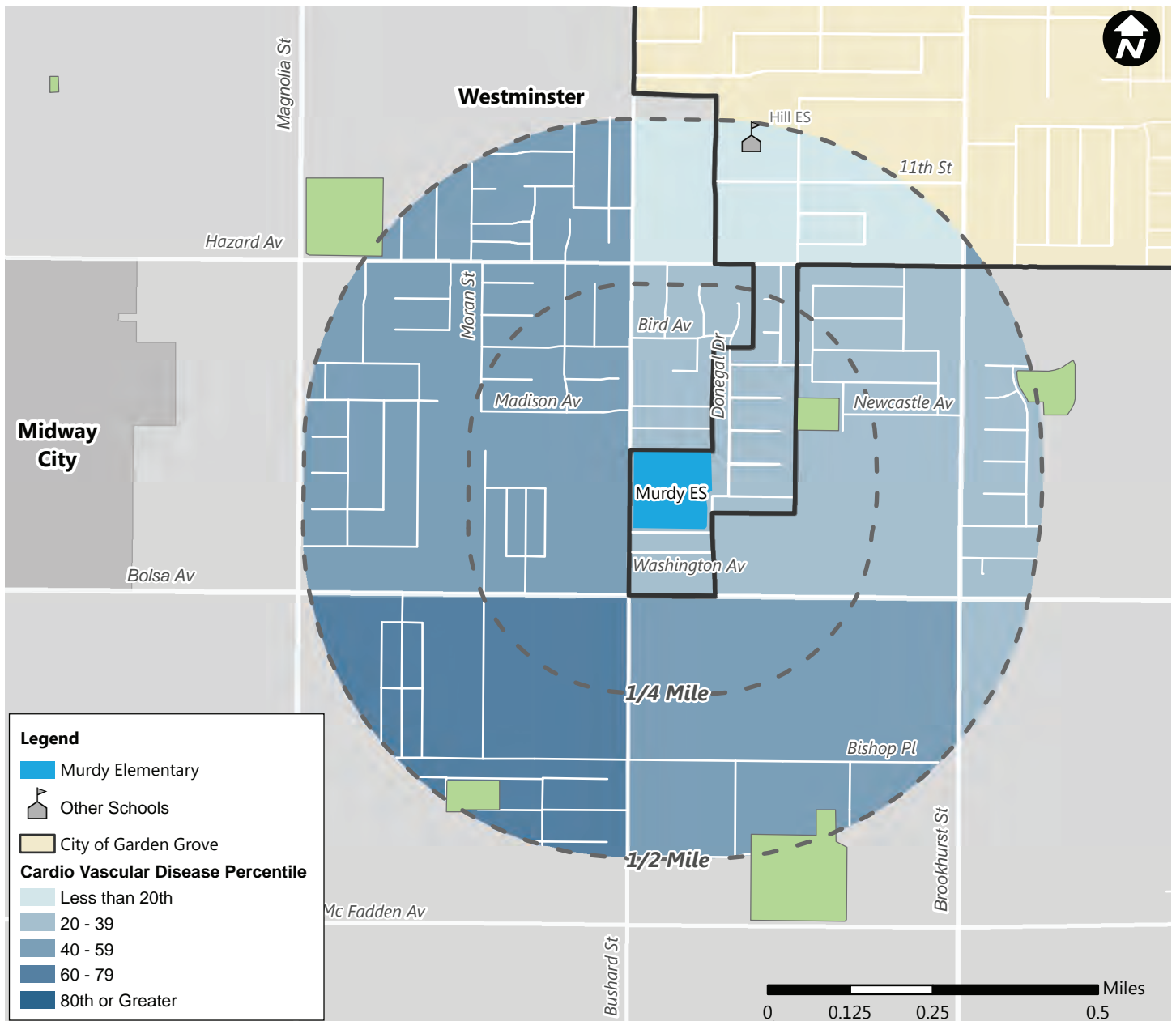


Figure 8-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. However, some census tracts surrounding Murdy Elementary have a rate of children with no access to health care above 15%.

*Data retrieved from CalEnviroScreen 3.0

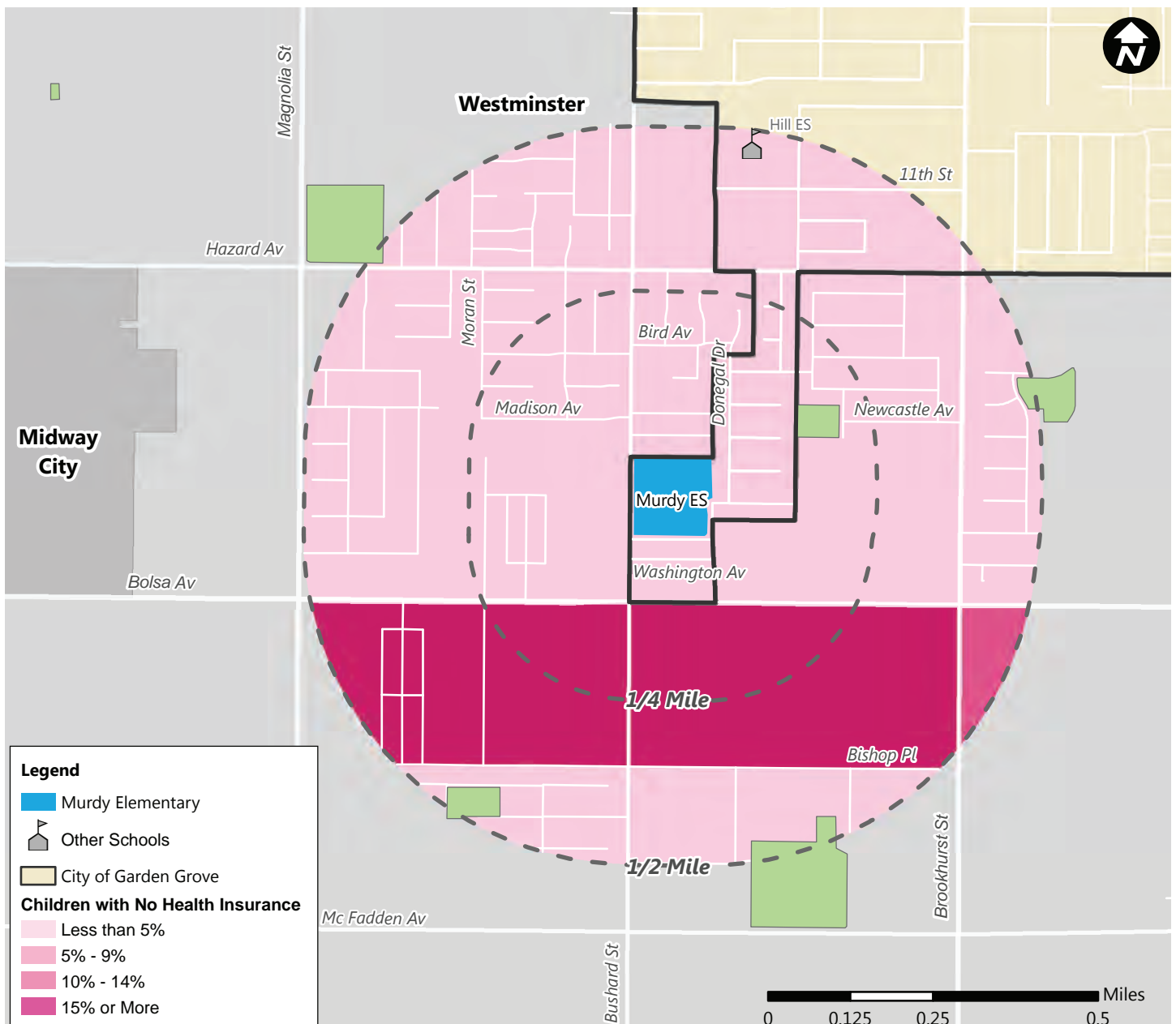


Figure 8-8: Map Of Children With No Access To Health Insurance

8.3 EXISTING INFRASTRUCTURE



Uneven sidewalk along Washington Avenue.



Intersection of Bushard Street and Washington Avenue: Main intersection for school traffic.



Recent sidewalk improvements at staff parking lot driveway along Bushard Street; not ADA compliant.



Wide sidewalks along Bushard Street.



Existing Assembly C signage along Bushard Street.



Bikes share the road along Bushard Street at Madison Avenue.



Existing bike lane with two vehicle travel lanes in each direction along Bushard Street adjacent to the school.



Intersection of Bushard Street and Madison Avenue, looking south.

8.4 OBSERVED BEHAVIORS

The following presents a list of infrastructure concerns and behavioral issues that were observed at John A. Murdy Elementary.

School Parking Lot Drop-Off Area

- Parking lot entrance driveway is split into two lanes; one for school buses, and the other for student drop-off and parking.
- Students are dropped-off near the entrance driveway, instead of moving further down the parking lot drive isle, creating vehicle backup along Washington Avenue.
- Vehicles attempting to enter the school parking lot arrive from both the northbound and southbound approaches of Washington Avenue, creating vehicle backups in both directions.
- Some vehicles attempt to make a left-turn out of the parking lot, when signs indicate "Right Turn Only".
- School staff assisting students cross at the parking lot crosswalk between bus arrivals.

Bushard Street and Washington Avenue

- Intersection is adjacent to the school.
- Main intersection for vehicles arriving and departing the school during morning drop-off and afternoon pick-ups.
- Vehicles park up to the curb radius along both sides of Washington Avenue at Bushard Street, creating some sight distance issues.
- No crosswalk provided.

Donegal Drive and Lexington Avenue

- Uncontrolled intersection.
- High visibility crosswalk provided along north leg and curb ramps.

Donegal Drive and Lexington Avenue (cont'd)

- Uncontrolled intersection.
- High visibility crosswalk provided along north leg
- Vehicles park up to crosswalk along Donegal Drive creating some visibility issues when pedestrians attempt to cross.

Bushard Street

- Four lane roadway with Class II bike lanes adjacent to the school.
- Posted speed limit of 40 mph, 25 mph when children are present.
- Some vehicles observed to be traveling at higher than posted speed limit.
- Pedestrian crossings along Bushard Street are provided only at Bolsa Avenue (approx. 450 feet south of Washington Avenue) and Hazard Avenue (approx. 2,100 feet north of Washington Avenue).

Washington Avenue

- On-street parking provided on both sides of the street.
- Vehicle backups in both directions from school entrance driveway.
- Vehicles observed double parking along roadway curve at Washington Avenue and Lexington Avenue.

Donegal Drive

- On-street parking on both sides of the street.
- Parents park along Donegal Drive and walk students to/from school.
- Some parents and students walk to school traveling southbound on Donegal Drive.



8.5 COMMUNITY ENGAGEMENT

The City strove to implement infrastructure improvements that not only responded to the community's needs and address their concerns, but were also feasible within engineering limitations. To gather community input, the City conducted Walking Safety Assessments (WSA), collected Parent Surveys, and worked with teachers to collect Student Travel Tallies in classrooms. The City also collaborated with Murdy Elementary School staff and Garden Grove Unified School District staff to market the project to the Murdy Elementary School community, nearby businesses, and local organizations.

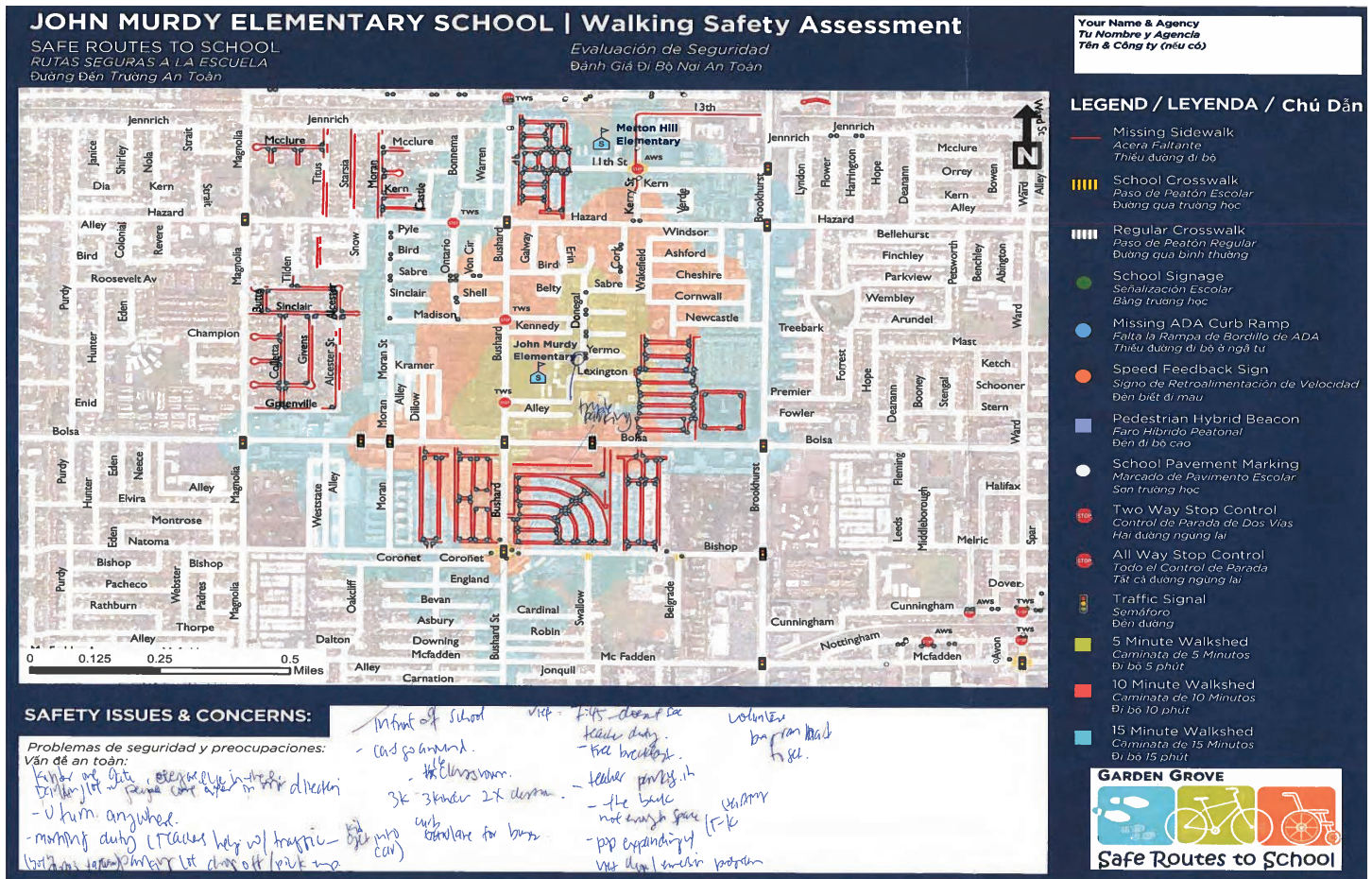


Figure 8-9: Map used at Walking Safety Assessment with comments from event participant

Walking Safety Assessment

The Project Team hosted a Walking Safety Assessment on March 14, 2018 to afford community members an opportunity to express their concerns and explore ideas to improve the roadways surrounding the school. Approximately 20 parents and key stakeholders dedicated their valuable time to participate in the event.

Key stakeholders included:

- Parents/Guardians
- Murdy Elementary Staff
- GGUSD Staff
- Garden Grove Police
- City Staff

At the Walking Safety Assessment, participants walked around the vicinity of schools, discussed key areas of concerns and explored a range of improvements that they would like to see. After the walk, participants gathered for a discussion on the primary issues that they saw during the walk, as well as routes that affect them going to and from the school. A wide range of potential solutions were explored during these exercises. Solutions that were discussed aimed at addressing participants' main concerns and adhering to engineering limitations so that the ultimate list of improvements would offer beneficial immediate and long-lasting outcomes to the community.



Walk audit participants listening to a brief presentation before the walk



Observations of the bike usage on Bushard Street in front of the school

Parent Surveys

The “Parent Survey About Walking and Biking to School” form from the National Safe Routes to School Center was used as an expanded data collection tool. The survey gathered information such as the distance from a student’s home to school, travel mode distribution, and parent perceptions regarding walking and biking to school.

Parent Surveys

	Count
Number of Survey Responses	185
# of K-8 Students in All Households	252

Travel Mode Distribution

	Percentage
Walk	12.50%
Bike	0.27%
School Bus	8.42%
Vehicle	77.72%
Carpool	0.27%
Transit	0.27%
Other	0.54%

Distance Between Home And School

	Percentage
Less than 1/4 mile	32.12%
1/4 mile up to 1/2 mile	22.42%
1/2 mile up to 1 mile	20.61%
1 mile up to 2 miles	16.36%
More than 2 miles	8.48%

Parent Concerns About Walking and Biking to School

	Percentage	Rank
Safety of Intersections and Crossings	67.03%	1
Amount of Traffic Along Route	65.95%	2
Speed of Traffic Along Route	64.32%	3
Violence or Crime	64.32%	4
Distance	61.62%	5
Weather or Climate	59.46%	6
Crossing Guards	56.22%	7
Convenience of Driving	51.89%	8
Participation in After-School Programs	51.35%	9
Time	49.19%	10
Adults to Bike/Walk With	48.65%	11
Sidewalks or Pathways	47.03%	12

Student Travel Tallies

The City collaborated with Murdy Elementary Staff to collect data using the “Safe Routes to School Students Arrival and Departure Tally Sheet”. The Tally Sheet predominately gathers data on travel mode distribution. It supplements the data provided from the Parent Surveys.

Student Travel Tallies

	Count
Number of Students Assessed in Tally	221
Number of Trips Assessed in Tally	1151
Morning	594
Afternoon	557

Travel Mode Distribution (From Tallies)

	Percentage
Walk	11.60%
Bike	0.52%
School Bus	4.42%
Vehicle	80.61%
Carpool	2.86%
Transit	0.00%
Other	0.00%

Comments retrieved from Parent Surveys

"If my house were closer, kids would walk or bike to school with an adult. [Kids] under 15 years old should not be walking or biking by themselves because they don't know yet how to handle dangerous situations."

"There are no crossing guards at any of the crossings/ intersections, and then the traffic around the school is too unorganized. People drive wherever they want, making it too dangerous to walk around the school."

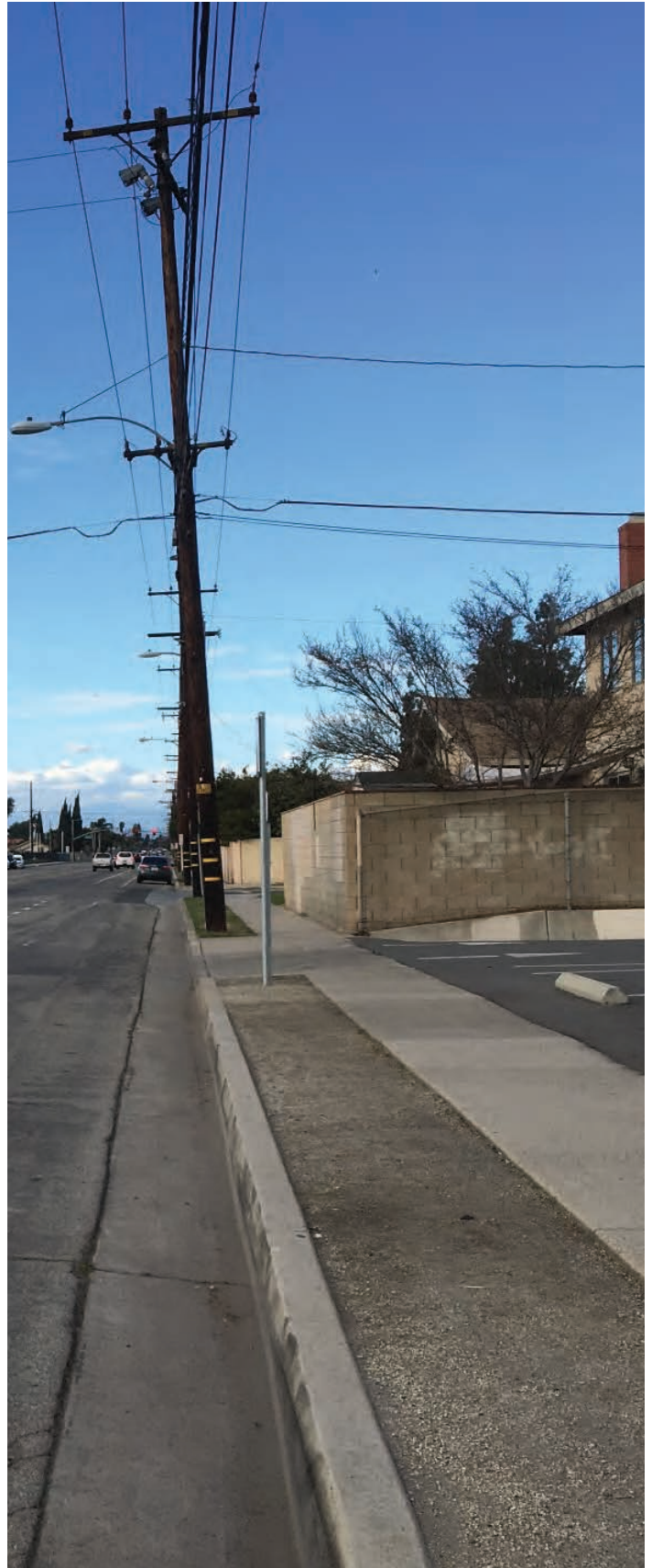
"If my house was closer, my kids could walk or bike to school with an adult. They should not be walking or biking by themselves under 15 years because they don't know how to handle dangerous situations or they could follow a stranger."

"I can let my child bike to school."

"There needs to be one more signal on Bushard and Donegal so that when you turn left, it is safer and there won't be a lot of traffic."

"I am happy to allow my child to walk to school by himself, but I am uncomfortable as well. I know there was an issue of kidnapping and too much traffic on intersections."

"I don't want young kids to bike to school. When biking on the street, many cars drive right by and don't see them. It would also take longer to get to and from school, taking time away from their studies."



8.6 PROGRAMMING RECOMMENDATIONS

The five programs recommended for Murdy Elementary aim to generate momentum for active transportation activities at the school. The school lacks a Parent Teacher Organization or similar group that can be champions for the Safe Routes to School Programs. However, parents who attended the Walking Safety Assessments can be champions given the valuable input that they had provided at the event.

The City received comments from parents and guardians through the Walking Safety Assessment and Parent Surveys. While many comments can be addressed through engineering improvements, concerns related to crime, safety, and long distances between home and school can be alleviated through encouragement, education, and enforcement programs.

The programming recommendations identified below are five programs that Murdy Elementary can begin with. Safe Routes to School programming is primarily a volunteer effort, but there are dedicated ongoing resources to support these successful efforts; to that end, the school needs to put some initial effort towards developing a Safe Routes to School program using school staff and/or recruiting volunteers to begin the programming effort. Once the school builds momentum for the programs identified below, it can move towards other programs discussed in Ch. 4-5 Programming Toolbox.

Recommendation #1: Weekly Walk-to-School Program

The Weekly Walk-to-School Program is an encouragement program where Murdy Elementary can provide small incentives for students to take active transportation to and from school. Many students live within close proximity to the school. According to the Parent Survey, 32% of students live less than a $\frac{1}{4}$ mile from the school, which is equivalent to less than ten minutes of walking. Another 22% of students live between $\frac{1}{4}$ and $\frac{1}{2}$ mile from the school, an equivalent to less than 15 minutes of walking. Combined, more than half (54%) can walk to school within 15 minutes. Currently, only 13% of Murdy Elementary students walk to school, while 78% of students arrive/ depart from the school via vehicle; this program can encourage more students to take active transportation to and from school. The school can offer a small prize for students who participate in the Weekly Walk-to-School Program.

Recommendation #2: Walk and Roll Day and/or International Walk to School Day

Walk and Roll to School Day is an organized event where students walk or bike to school. International Walk to School Day is a similar effort; however, it is a part of a larger, international-wide event which occurs annually in October. These events can be simple or complex depending on the school's commitment. It can consist of organizing a Walking School Bus and/or providing small giveaways for participants.

To kick-off the SRTS Programming efforts, and recruit parent volunteers to join the effort, Murdy Elementary School could host a Walk and Roll Day (and if time schedule aligns- International Walk to School Day). This strategy would require more time commitment than a Weekly Walk-to-School Program since it's an organize event.

Recommendation #3: Golden Sneaker Walking Program

The Golden Sneaker Walking Program is a friendly competition between the classrooms to encourage as many students to walk to and from the school. As noted above, more than half of Murdy Elementary students live within close proximity to the school. Although the Golden Sneaker Walking Program strives to encourage students to walk more, students who bike or take other forms of active transportation to school can participate as well. For students that live further away, they can participate by walking or biking during their free time. The classroom with students who walk (or bike) the most wins the Golden Sneaker Award (or another prize.)

Recommendation #4: Drop-Off Point Program

The Drop-off Point Program offers opportunities for students to walk to school while reducing the high levels of vehicular traffic on the roadways in front of the school. According to comments received from the Walking Safety Assessment and Parent Surveys, parents stated that walking and bicycling to school is a challenge due to the long distance between home and school. The Drop-Off Point Program would continue to allow students to arrive to and depart from the school via personal vehicles, but participate in active transportation activities to and from Murdy Elementary.

This program will develop a formal program for an existing practice where some Murdy Elementary parents use the San Young Market Parking Lot as a drop-off point. In addition to the Target Parking Lot, other potential drop-off locations include the Asian Garden Mall Parking Lot and Bolsa Mini Mall on Bolsa Avenue which are located within a 15 minute walk from the school. Walking to and from these potential

drop-off locations would provide students with approximately 30 minutes of physical activities per day- half of the recommended amount by the Centers for Disease Control and Prevention. The Drop-Off Point Program can be complemented with the Walking School Bus Program which is discussed below.

Recommendation #5: Walking School Bus Program

The Walking School Bus Program would provide the adult supervision needed to address the concerns associated with crime and violence. During the Walking Safety Assessment, participants repeatedly voiced this concern. This was supported with findings from the Parent Survey; according to the survey, 70% of parents of children who do not currently walk or bike to school stated that violence or crime is one of the main factors for not allowing their child to walk or bike to and from Murdy Elementary.

Murdy Elementary already has many students walking to and from the school. The program can form a group comprised of parents who already walk their child to school, and develop "Bus Routes" and "Bus Stops" to pick up/ drop off students to and from the school. Other "Bus Stop" locations include drop-off points such as San Young Market and Asian Garden Mall.

This program should be coordinated with the Weekly Walk-to-School Program.

8.7 MURDY ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



Engineering & Operational Improvement Notes

- (A) Install high visibility school crosswalk at the east leg crossing of Washington Ave and Bushard St & relocate the limit line and "STOP" pavement marking. Install 50 feet of red curb from ECR to the east along the north side of Washington Avenue.
- (B) Install Stop sign at north leg crossing of Donegal Dr and Lexington Ave along with "STOP" pavement parking. Install "STOP AHEAD" pavement markings at approx. 100 feet approaching the new limit line. Re-stripe existing high visibility crosswalk and install approximately 25 feet of red curb along the southbound approach (west side).

Inset A: Provides for mid-block pedestrian crossing on Bushard Street near the school to allow for pedestrians in the area to cross the four lane roadway with signalized traffic control that requires vehicles to stop during a programmed pedestrian phase.

8.8 INFRASTRUCTURE RECOMMENDATION DETAILS

Recommendations

Install the following:

SIGNS:

- 2 x R10-6: STOP Here on Red
- 1 x SW24-2 (CA) School Crossing w/arrow (Assembly B)
- 2 x SW24-3 (CA) School Crossing Ahead
- 1 x R2-1: Speed Limit
- 2 x SR4-1: School Speed Limit
- 1 x S4-5: School Speed Limit Ahead
- 1 x R1-1: STOP

CROSSWALKS:

- 3 x High visibility yellow school crosswalks

PAVEMENT MARKINGS:

- 2 x "SLOW SCHOOL XING"
- 3 x "STOP"
- 5 x Stop bar

CURB PAINTING:

- Red curb areas at various locations

PEDESTRIAN SIGNAL:

- 1 x Traffic signal with push button activation for pedestrian crossing.

CURB RAMPS:

- 18 x ADA compliant curb ramps

Discussion

Parents and students head west on Madison Avenue to the residences located west of Murdy Elementary. The roadways in the neighborhood predominately lack curb ramps. The addition of ADA compliant curb ramps on roadways along this corridor will address this deficiency and provide adequate accessibility for all users.

Walk Audit participants expressed safety concerns with crossing Bushard Street. Many Murdy Elementary students live west of the school; as such, they need to walk across Bushard Street to reach their destinations. However, there are no mid-block crossings along Bushard Street for pedestrians to safely cross the roadway near the school. The nearest traffic signal is at the intersection with Bolsa Avenue, more than 450 feet south of Murdy Elementary, and at Bushard Street and Hazard Avenue to the north. A new mid-block pedestrian crossing signal can provide pedestrians with a crossing near the school to cross the high traffic volume roadway of Bushard Street. New signs and pavement markings can help provide motorists with warnings of pedestrian crossings in the area.

Many students and parents cross Washington Avenue at Bushard Street to reach their destinations south of the school. Walk Audit Participants commented on the high speed along Bushard Street which creates an unsafe and unpleasant feeling for pedestrians. Additionally, participants noted the high rates of collisions in which motorists crash into the corner of the school fence. New school signs along Bushard Street can help bring attention to motorists to become more aware of students walking along the street. Painted red curbs which can prevent on-street parking at the intersection of Bushard Street and Washington Avenue can also help improve sight distance of pedestrian and vehicle activities at the intersection. Along with a new school crosswalk, these recommendations can improve the visibility of pedestrians using Bushard Street.

Donegal Drive is a north-south corridor located approximately 100 feet from Murdy Elementary. As such, it's heavily utilized by students and parents to reach destinations north and east of the school. The east side of the corridor is comprised of short blocks with many local streets terminating at Donegal Drive. These intersections lack curb ramps. The recommendations call for ADA compliant curb ramps at these intersections to provide adequate access for all users.

Walk Audit Participants identified safety concerns such as motorists not seeing pedestrians crossing Donegal Drive and parking issues with the intersection of Donegal Drive and Lexington Avenue. In addition to these concerns, this segment shares many of the characteristics as the Donegal Drive Corridor. It lacks school crosswalks and ADA curb ramps. A new stop sign, high visibility school crosswalk, red curb, ADA compliant curb ramps, along with school signs and pavement markings, can help provide adequate access to all users.

Cost Summary

The cost estimate table below summarizes the Murdy Elementary area cost estimates for implementation, based on the cost assumptions described previously in Chapter 4 of this Plan.

SEGMENT	IMPROVEMENT	UNIT	COST	QTY	TOTAL	
Murdy Elementary	Double Yellow Centerline Stripe (Detail 22)	Per Linear Foot	\$2	50	\$100	
	New Sign & New Post	Each	\$300	9	\$2,700	
	New Sign on Existing Post	Each	\$150	1	\$150	
	School Area Pavement Marking (Per Word)	Each	\$210	11	\$2,310	
	High Visibility Ladder Crosswalk	Each	\$1,480	3	\$4,440	
	ADA Curb Ramps	Each	\$4,968	18	\$89,424	
	Yield Line	Per Linear Foot	\$3	125	\$375	
	Paint Curb	Per Linear Foot	\$2	250	\$500	
	Remove Existing Pavement Marking	Per Square Foot	\$3	200	\$600	
	Pedestrian Mid-block Signal (two poles, mast arms, 4 signal heads, PPB)	each	\$125,000	1	\$125,000	
	Subtotal					\$225,599
	Design (D) (Subtotal * 15%)					\$33,840
	Environmental (E) (Subtotal * 5%)					\$11,280
	Construction Management (CM) ((Subtotal + D + E) * 10%)					\$27,072
	Mobilization (M) ((Subtotal + D + E) * 5%)					\$13,536
	Traffic Control (TC) ((Subtotal + D + E) * 5%)					\$13,536
	Contingency ((Subtotal + D + E + CM + M + TC) * 15%)					\$48,729
	Segment Total					\$373,592

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watch
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9. Hill

Elementary

- 9.1 Introduction
- 9.2 Existing Conditions
- 9.3 Existing Infrastructure
- 9.4 Observed Behaviors
- 9.5 Community Engagement
- 9.6 Programming Recommendations
- 9.7 Infrastructure Recommendations
- 9.8 Infrastructure Recommendation Details

9.1 INTRODUCTION

Hill Elementary is located on 9681 11th St in the Southern portion of Garden Grove, adjacent to a water channel. Nested in a tranquil residential neighborhood, the school offers easy access to countless local destinations. The Islamic Society of Orange County sits adjacent to Hill Elementary with entrances via 11th Street and Kerry Street; meanwhile the Americana Mobile Home Estates lies to the West of the school. Other nearby destinations include the Mall of Fortune on Westminster Boulevard and Brookhurst Street, and shops and eateries on Brookhurst Avenue and Hazard Avenue.

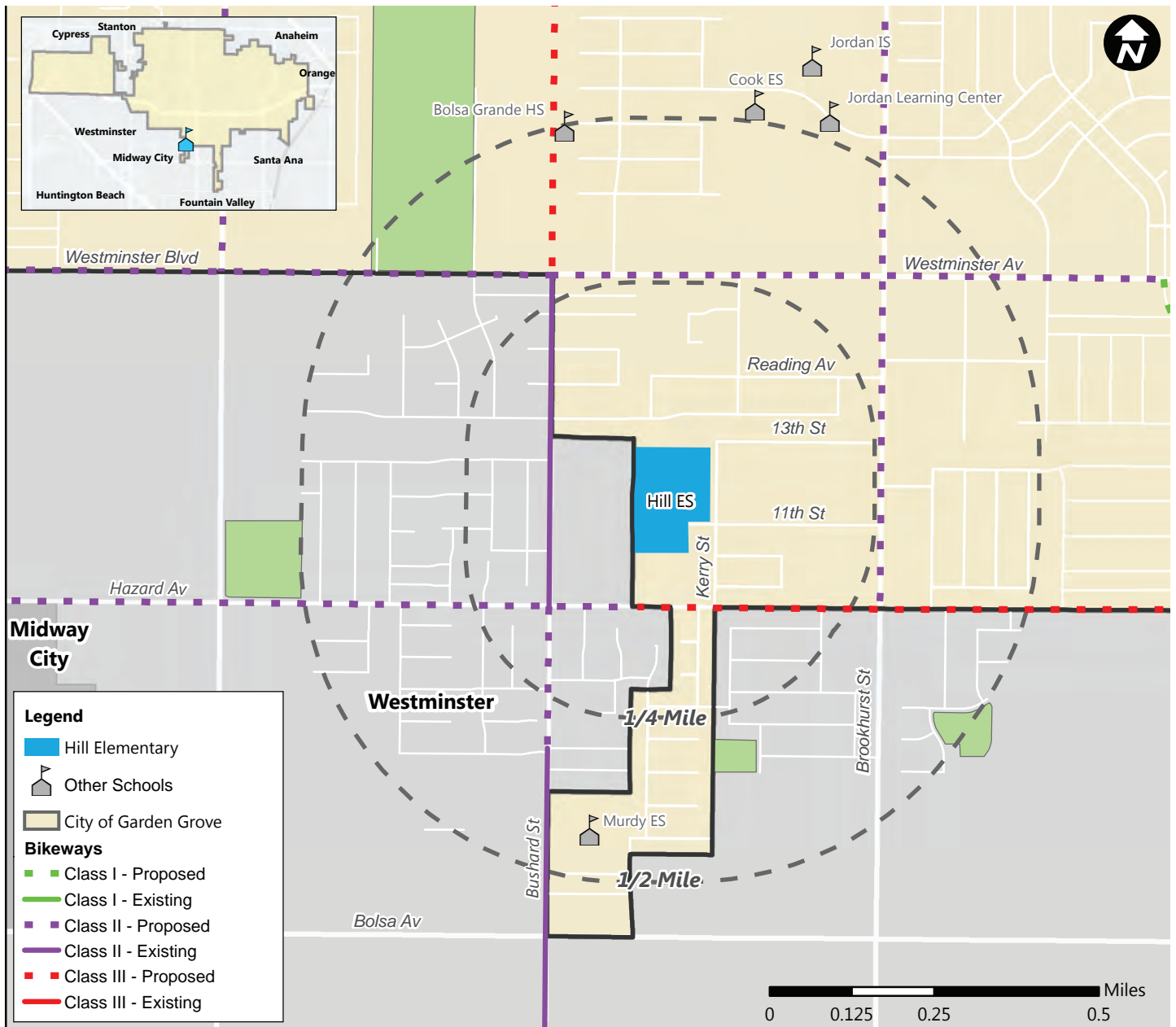


Figure 9-1: Map of School Location

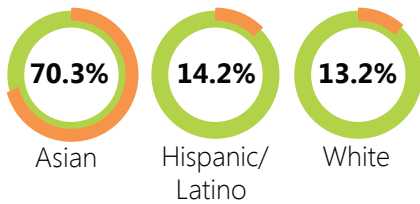
Hill Elementary School

School Snapshot

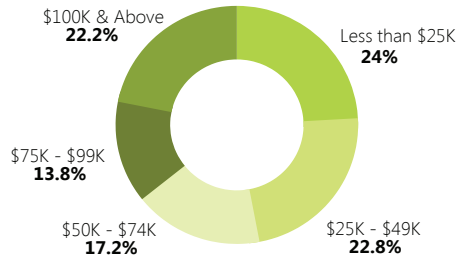
Hill Elementary enrolled **336 students** in the 2017-2018 school year. Of these students, **20.3%** currently walk and bike to school, while **73.2%** are driven to school.

COMMUNITY CHARACTERISTICS

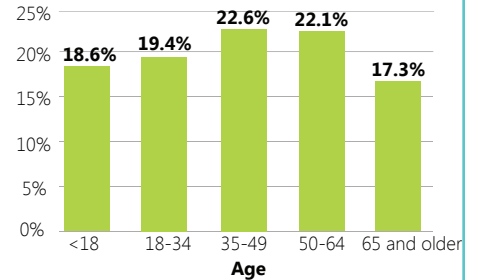
Race



Median Household Income

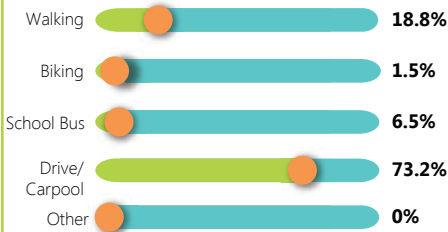


Age

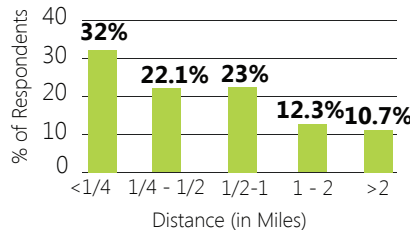


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



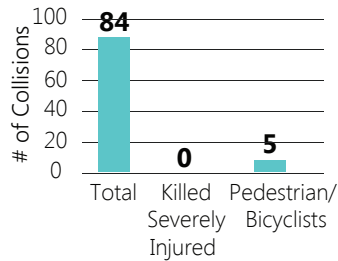
Input from the Community

"Some kids are too young to let them walk by themselves, and I don't think its safe, or when biking when kids are older."

"When walking or biking, there needs to be a person watching for kids darting across the street."

SAFETY

Transportation Collisions within 1/4 Mile Radius



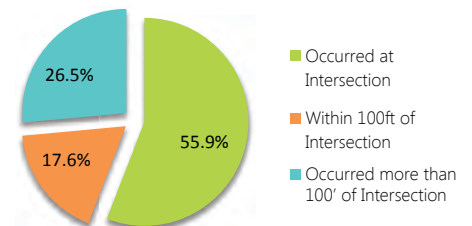
High Collision Roadways

- 1 Bushard Street (19)
- 2 Hazard Avenue (12)

High Collision Intersections

- 1 Bushard Street and Hazard Avenue (13)
- 2 Bushard Street and Oasis Avenue (4)
- 3 Hazard Avenue and Kerry Street (3)

Collision Locations



9.2 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near Hill Elementary. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children’s access to health care, and communities’ exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

Race

	0.25 Mile
White	13.20%
African American or Black	0.80%
American Indian or Native Alaskan	0.00%
Asian	70.30%
Native Hawaiian or Pacific Islander	0.00%
Other	0.10%
Two or More	1.40%
Hispanic or Latino	14.20%

Median Household Income

	0.25 Mile
MHHI less than \$25,000	24.00%
MHHI \$25,000 - \$49,999	22.80%
MHHI \$50,000 - \$74,999	17.20%
MHHI \$75,000 - \$99,999	13.80%
MHHI \$100,000 - \$149,999	13.80%
MHHI \$150,000 or More	8.40%

Age

	0.25 Mile
Population under 18	18.60%
Age 18 - 34	19.40%
Age 35 - 49	22.60%
Age 50 - 64	22.10%
Age 65 or Older	17.30%

Language Capabilities

	0.25 Mile
English Only Households	17.60%
Spanish Speaking Households	10.20%
Limited English Speaking Households	24.20%

Collision Type

	#	0.25 Mile
Pedestrian	3	3.60%
Bicycle	2	2.40%
Total Collisions	84	100%
Total Bicycle and Pedestrian	5	6.00%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	0	0%
Severely Injured	0	0%
Injury (Visible)	0	40%
Injury (Complaint of Pain)	3	100%
All Injured	3	100%
Property Damage Only	0	0%

Bicycle Injury Status

	#	0.25 Mile
Fatal	0	0%
Severely Injured	0	0%
Injury (Visible)	2	100%
Injury (Complaint of Pain)	0	0%
All Injured	2	100%
Property Damage Only	0	0%

Health and Environmental Factors

	0.25 Mile
Asthma	19th percentile
Cardiovascular Disease	25th percentile
Ozone	53rd percentile
PM 2.5	66th percentile
Diesel PM	53rd percentile
Traffic Density	74th percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile surrounding Hill Elementary, 84 collisions occurred between 2013 and 2017. Of those collisions, 5 (5.9%) involved a pedestrian or bicyclist. All of the collisions involved resulted in a complaint of pain or visible injuries.

*Data retrieved from TIMS 2013-2017

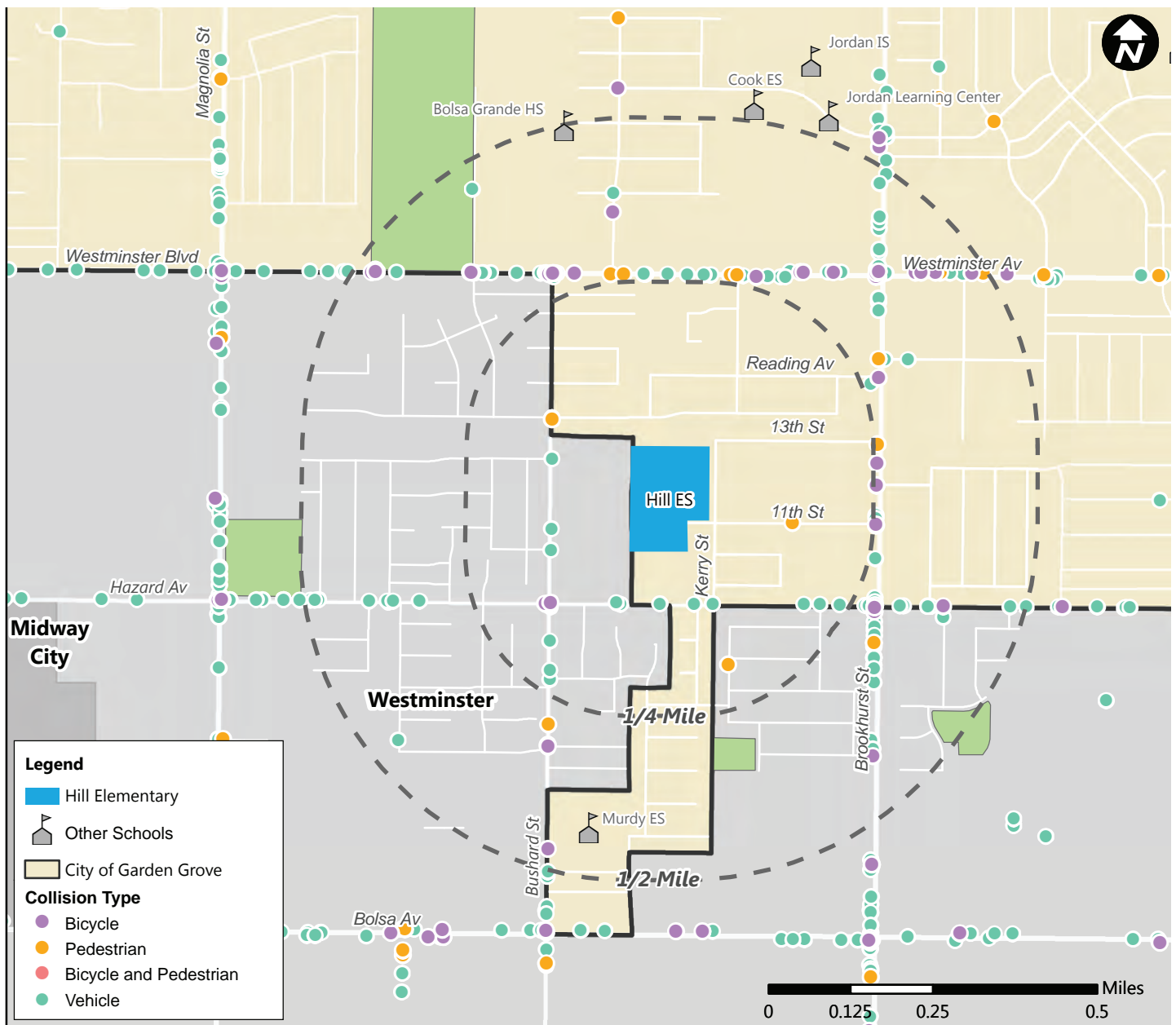


Figure 9-2: Map of Bike and Pedestrian Collisions within a 1/4 and 1/2 Mile of Hill Elementary

Median Household Income

Approximately half (46.8%) of households within a ¼ mile of Hill Elementary have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$59,664- slightly below the statewide median household income of \$63,783, the county wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026

*Data retrieved from American Community Survey 2016 Estimates

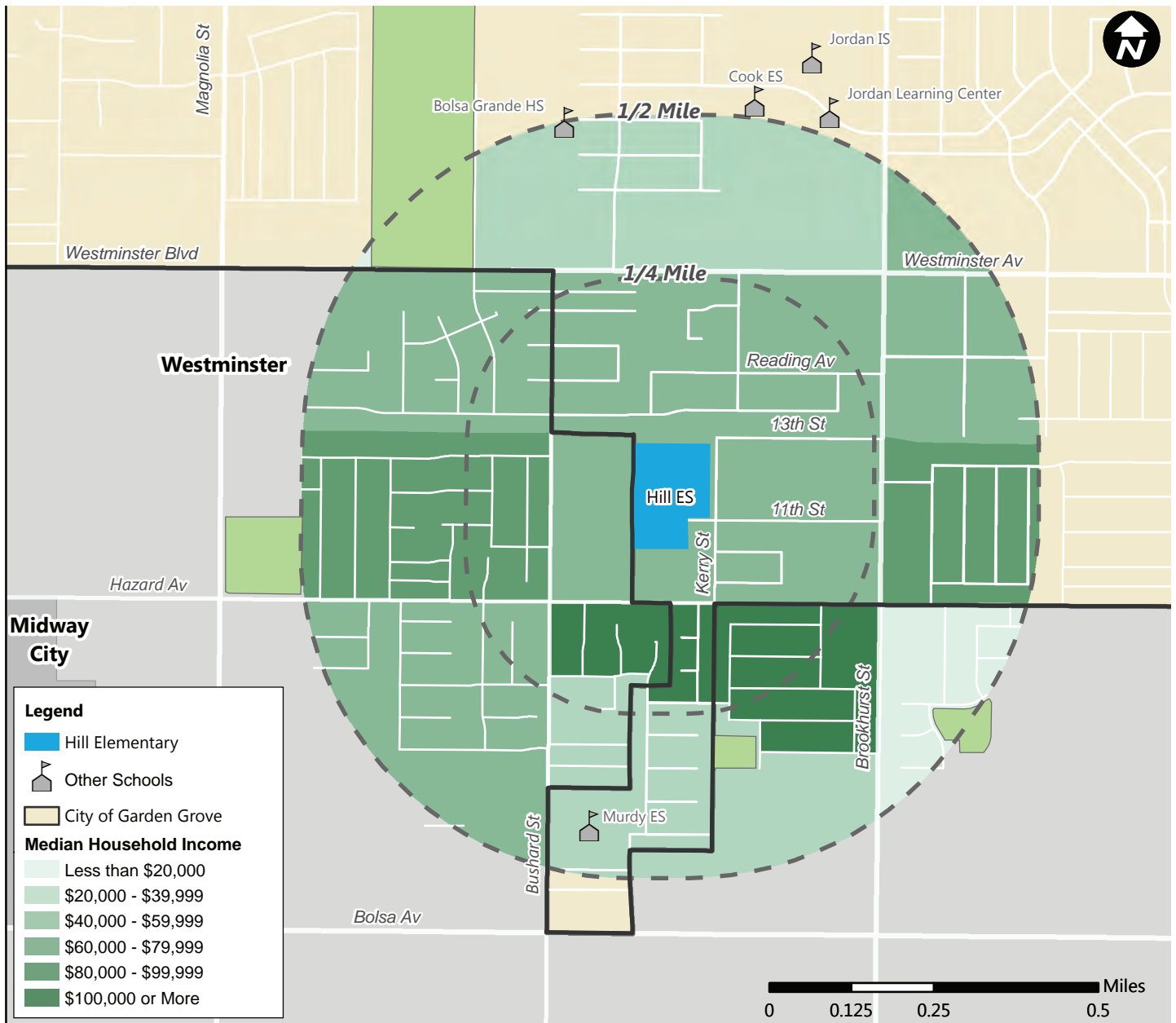


Figure 9-3: Map of Median Household Income

Population Younger Than 18 Years Old

Nearly 1 in 5 (18.6%) residents living in the ¼ mile area surrounding Hill Elementary are under the age of 18. This rate is just under the citywide population share of 23.1%. Within a ½ mile area, some Census Block Groups have a rate as high as 24%.

*Data retrieved from American Community Survey 2016 Estimates

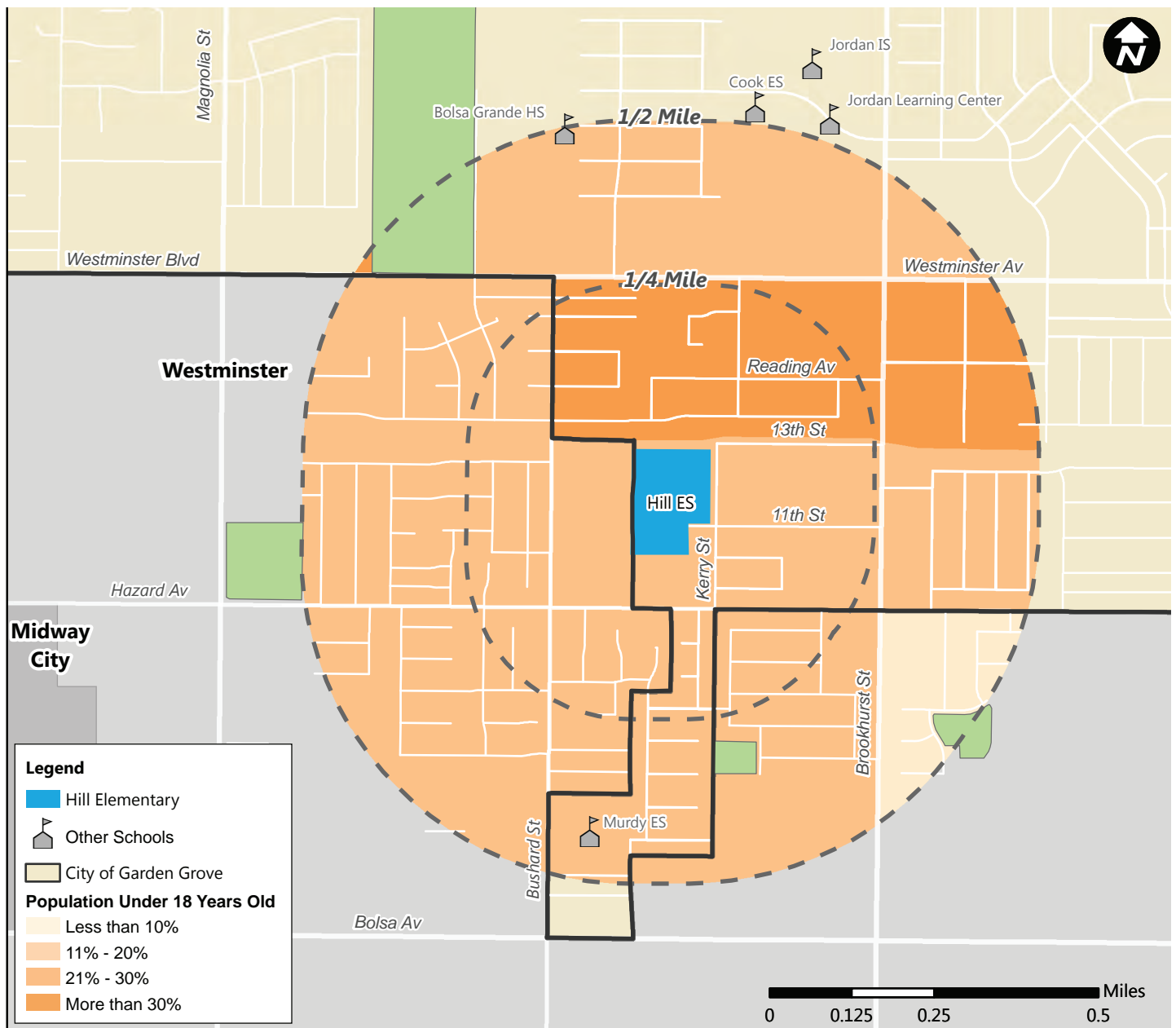


Figure 9-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Hill Elementary has a high rate of Asian and Hispanic residents. Approximately 70% of households within a ¼ mile of the school are of Asian descent and nearly 14% of households are of Hispanic of Latino descent. The high level of households that has limited English capabilities correlates to these demographic statistics. An average of 24% of all households has limited English communication abilities, although certain neighborhoods have as many as 50% or more households that have limited English capabilities.

*Data retrieved from American Community Survey 2016 Estimates

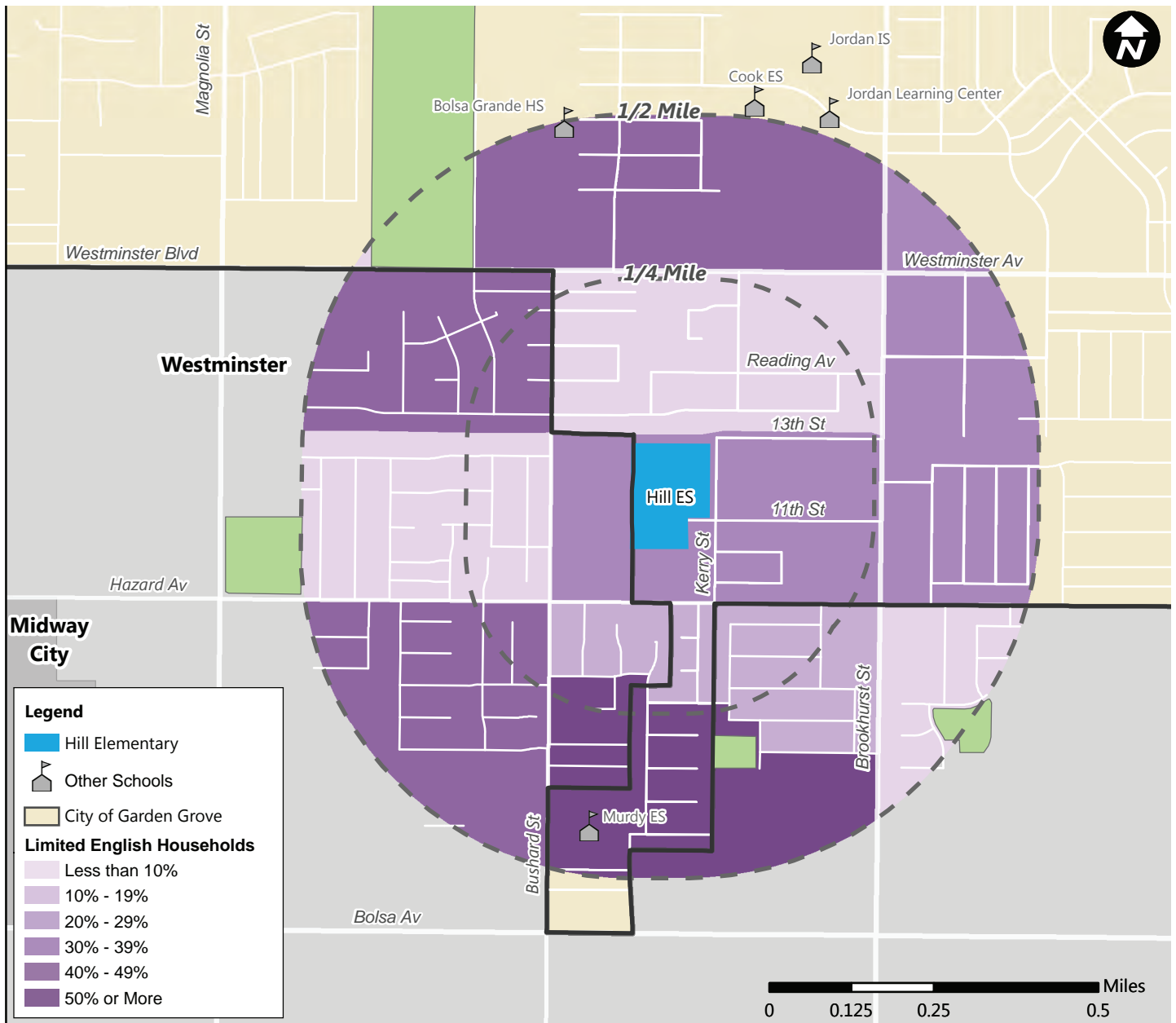


Figure 9-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding Hill Elementary are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the school all rank below the 50th percentile of all census tracts in California.

*Data retrieved from CalEnviroScreen 3.0

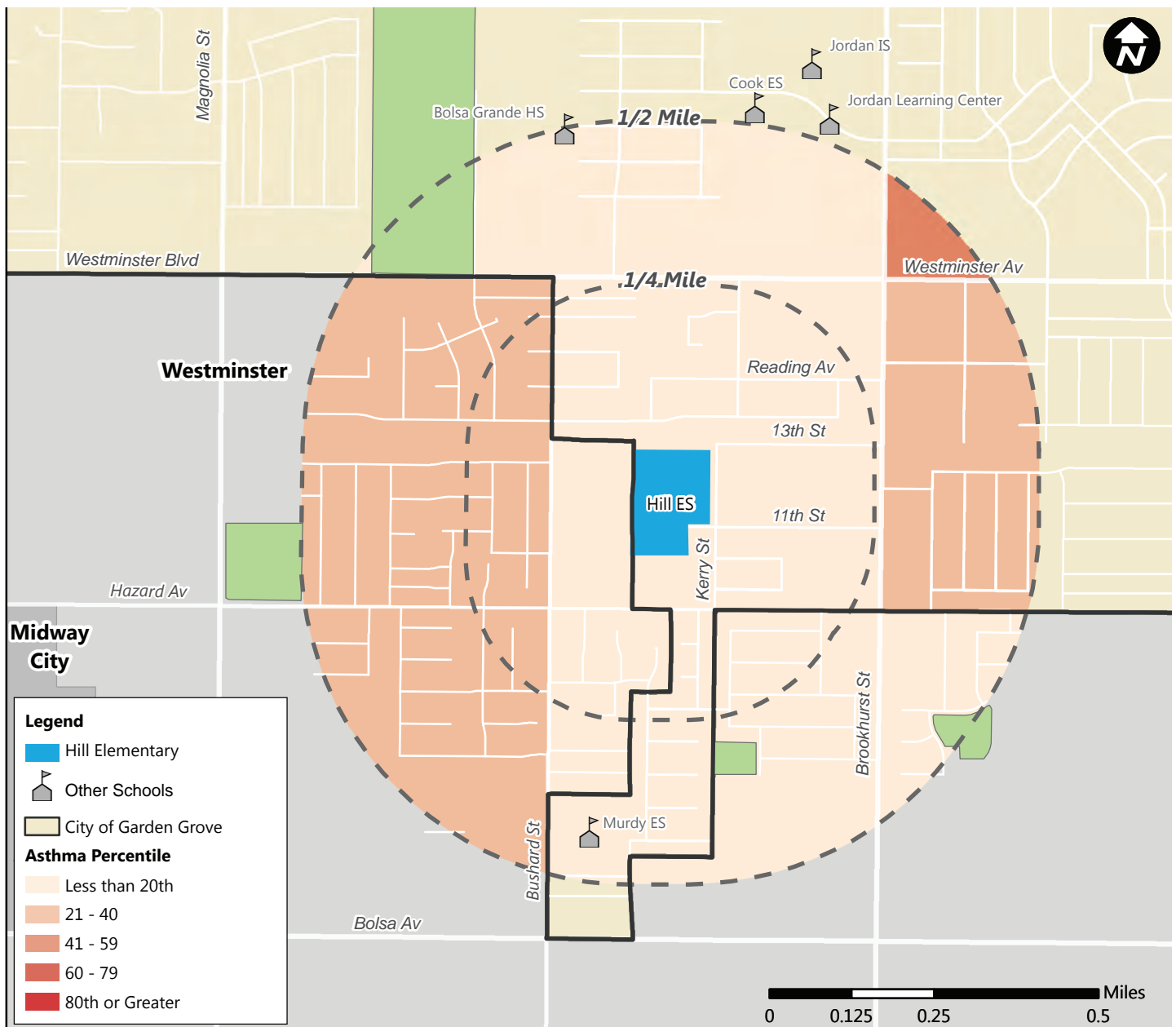


Figure 9-6: Map of Population With Asthma

Households With Cardiovascular Disease

The average rate of Cardiovascular Disease-related hospital visits surrounding Hill Elementary rank at the 39th percentile compared to census tracts in California. However, multiple census tracts surrounding the school rank above the 89th percentile. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood.

*Data retrieved from CalEnviroScreen 3.0

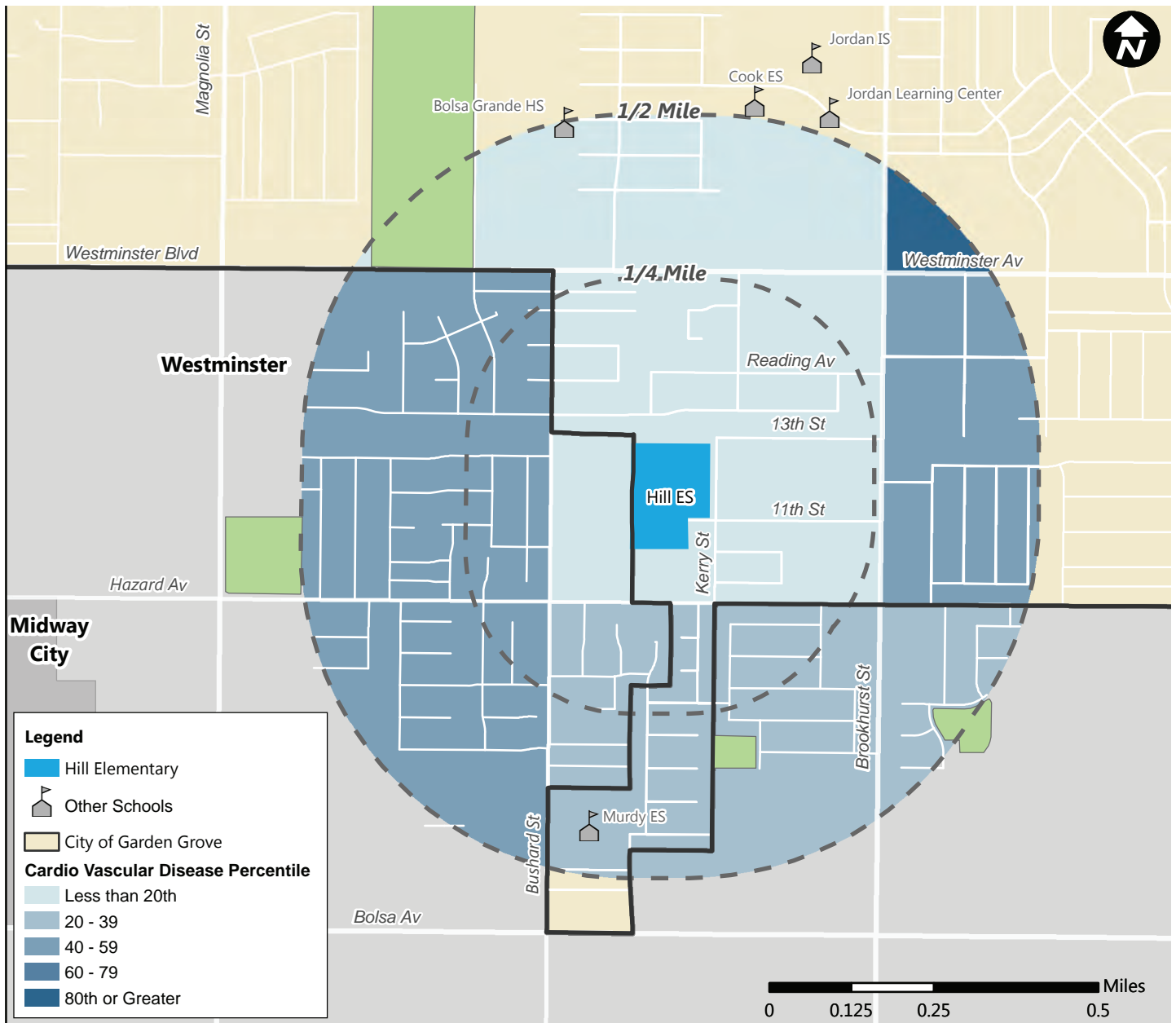


Figure 9-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. However, some census tracts surrounding Hill Elementary have a rate of children with no access to health care above 10%.

*Data retrieved from CalEnviroScreen 3.0

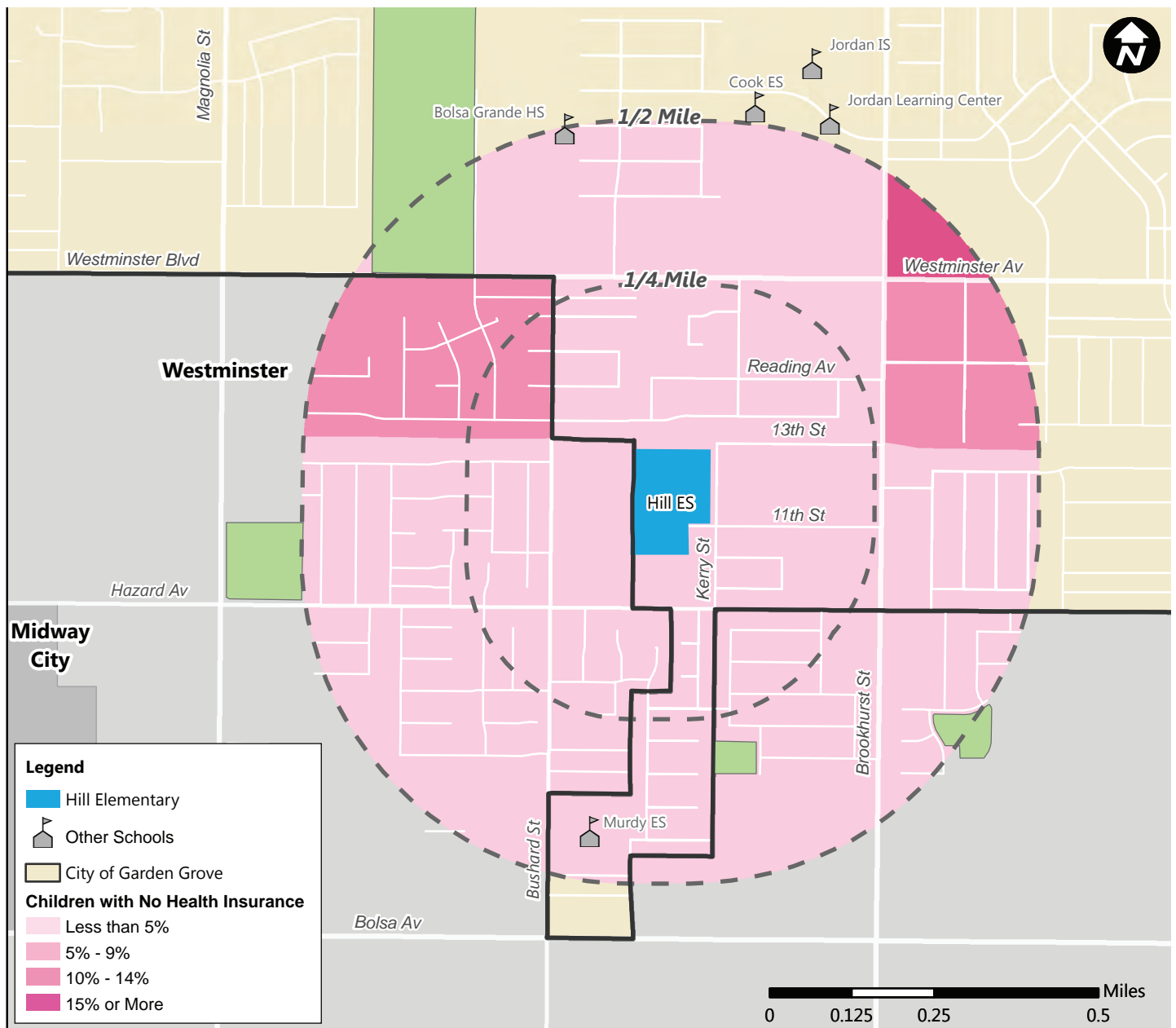


Figure 9-8: Map Of Children With No Access To Health Insurance

9.3 EXISTING INFRASTRUCTURE



Incomplete sidewalk along 13th Street. Sidewalk ends at the fire hydrant followed by dirt path.



Vehicles making mid-block u-turns along 11th Street.



Missing ADA compliant curb ramps along Hazard Avenue at Kerry Street.



Outdated school signage along 11th Street.



Sidewalk improvements needed along 11th Street to eliminate tripping hazards.



Pedestrians crossing mid-block along Kerry Street due to missing sidewalk along the west side of street.



Missing sidewalk along portion of Kerry Street, south of 11th Street.



Faded pavement markings along Kerry Street and 11th Street.

9.4 OBSERVED BEHAVIORS

The following presents a list of infrastructure concerns and behavioral issues that were observed at Hill Elementary.

Kerry Street and 11th Street

- All-Way Stop-controlled intersection with faded high visibility crosswalks.
- High vehicle and pedestrian activity.
- Main and only entry point to school.
- Two through westbound lanes on 11th Street west of Kerry Street; one drop-off lane and one through lane to school parking lot.
- Long southbound vehicle queue along Kerry Street and around the corner onto 11th Street, blocking crosswalk on the west leg.

Kerry Street and Hazard Avenue

- Stop-controlled approach on Kerry Street.
- Missing ADA compliant curb ramps at both corners.
- Vehicles park along the west side of the street just before the stop bar, creating visibility issues.
- High vehicle activity with some pedestrian activity.

Kerry Street and Johannah Avenue

- Uncontrolled 3-way intersection.
- Curb ramps provided along Kerry Street.

Kerry Street and Kern Avenue

- Uncontrolled 3-way intersection.
- Curb ramps provided along Kerry Street.

Kerry Street

- Sidewalks provided along both sides of the street, south of 11th Street, except for a small gap along the west side of the street.
- On-street parking allowed along both sides of the street north of 11th Street.

Kerry Street (cont'd)

- Many parents park along the north segment of Kerry Street and walk the students to/from school.

11th Street

- On-street parking along both sides of the street.
- Many parents park along this street and walk students to/from school.

13th Street

- Small portions of sidewalk exist along the south side of street, remaining segments are unpaved and many obstructions exist.
- High vehicle activity due to private school at the corner of Kerry Street and 13th Street.



9.5 COMMUNITY ENGAGEMENT

The City strove to implement infrastructure improvements that not only responded to the community's needs and address their concerns, but were also feasible within engineering limitations. To gather community input, the City conducted Walking Safety Assessments (WSA), collected Parent Surveys, and worked with teachers to collect Student Travel Tallies in classrooms. The City also collaborated with Hill Elementary School staff and Garden Grove Unified School District staff to market the project to the Hill Elementary School community, nearby businesses, and local organizations.

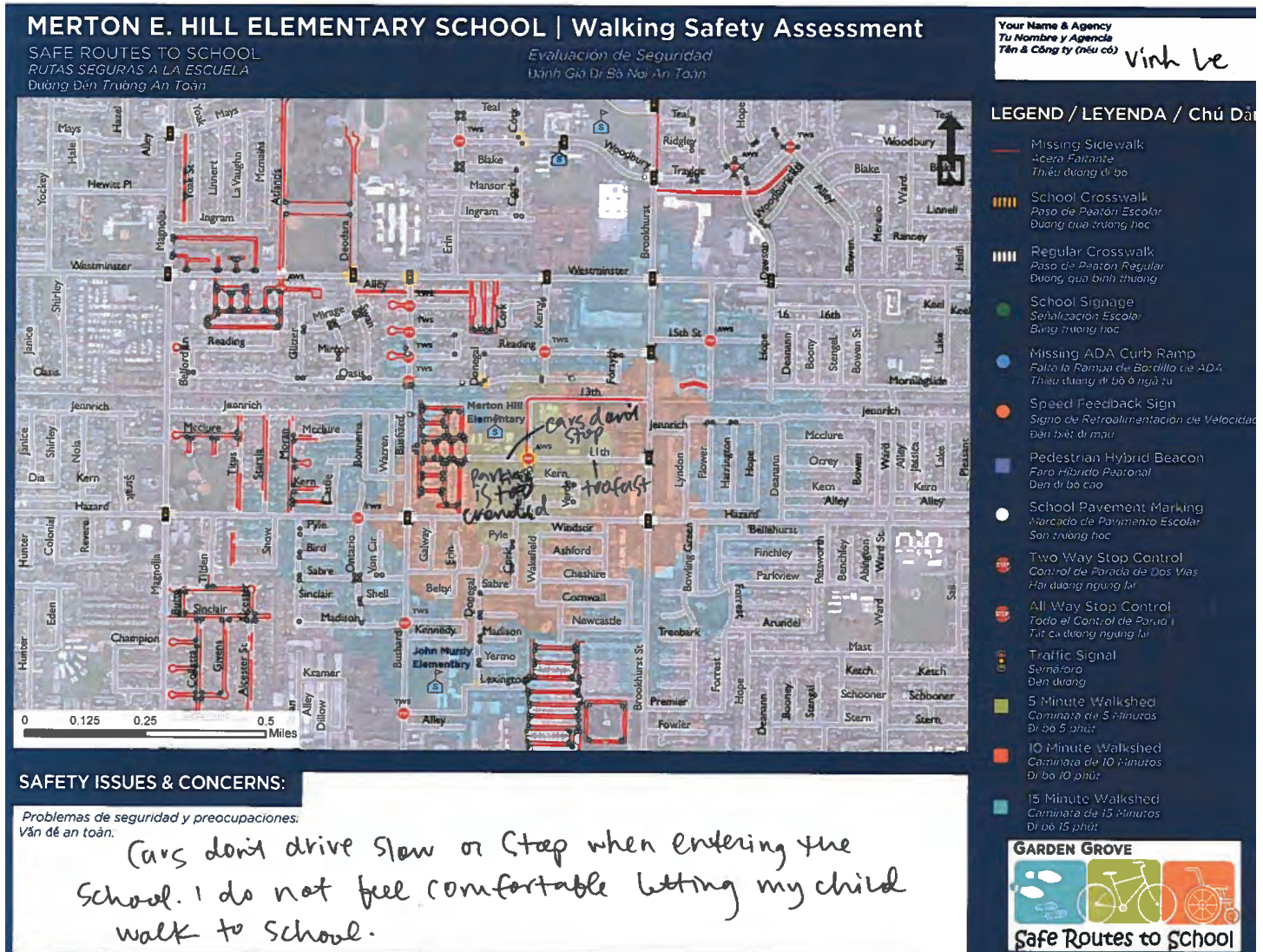


Figure 9-9: Map used at Walking Safety Assessment with comments from event participant.

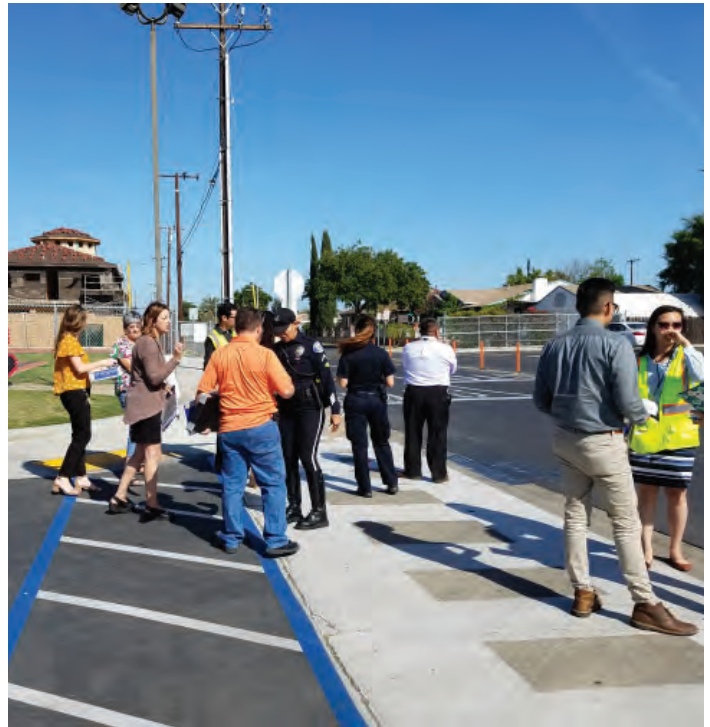
Walking Safety Assessment

The Project Team hosted a Walking Safety Assessment on April 11, 2018 to afford community members an opportunity to express their concerns and explore ideas to improve the roadways surrounding the school. Approximately 15 parents and key stakeholders dedicated their valuable time to participate in the event.

Key stakeholders included:

- Parents/Guardians
- Hill Elementary Staff
- GGUSD Staff
- Garden Grove Police
- City Staff
- Community organization representatives

At the Walking Safety Assessment, participants walked around the vicinity of schools, discussed key areas of concerns and explored a range of improvements that they would like to see. After the walk, participants gathered for a discussion on the primary issues that they saw during the walk, as well as routes that affect them going to and from the school. A wide range of potential solutions were explored during these exercises. Solutions that were discussed aimed at addressing participants' main concerns and adhering to engineering limitations so that the ultimate list of improvements would offer beneficial immediate and long-lasting outcomes to the community.



Participants discussing their concerns at a stopping point along the walking route



Walk audit participants engaging in a conversation after the walk.

Parent Surveys

The “Parent Survey About Walking and Biking to School” form from the National Safe Routes to School Center was used as an expanded data collection tool. The survey gathered information such as the distance from a student’s home to school, travel mode distribution, and parent perceptions regarding walking and biking to school.

Parent Surveys

	Count
Number of Survey Responses	136
# of K-8 Students in All Households	199

Travel Mode Distribution

	Percentage
Walk	18.77%
Bike	1.53%
School Bus	6.51%
Vehicle	72.03%
Carpool	1.15%
Transit	0.00%
Other	0.00%

Distance Between Home And School

	Percentage
Less than 1/4 mile	31.97%
1/4 mile up to 1/2 mile	22.13%
1/2 mile up to 1 mile	22.95%
1 mile up to 2 miles	12.30%
More than 2 miles	10.66%

Parent Concerns About Walking and Biking to School

	Percentage	Rank
Amount of Traffic Along Route	63.24%	1
Safety of Intersections and Crossings	63.24%	2
Speed of Traffic Along Route	61.76%	3
Distance	60.29%	4
Violence or Crime	56.62%	5
Adults to Bike/Walk With	55.15%	6
Convenience of Driving	53.68%	7
Crossing Guards	52.94%	8
Weather or Climate	52.21%	9
Time	51.47%	10
Sidewalks or Pathways	51.47%	11
Participation in After-School Programs	48.53%	12

Student Travel Tallies

The City collaborated with Hill Elementary Staff to collect data using the “Safe Routes to School Students Arrival and Departure Tally Sheet”. The Tally Sheet predominately gathers data on travel mode distribution. It supplements the data provided from the Parent Surveys.

Student Travel Tallies

	Count
Number of Students Assessed in Tally	280
Number of Trips Assessed in Tally	1642
Morning	823
Afternoon	819

Travel Mode Distribution (From Tallies)

	Percentage
Walk	15.57%
Bike	0.73%
School Bus	7.66%
Vehicle	72.45%
Carpool	3.41%
Transit	0.18%
Other	0.00%

Comments retrieved from Parent Surveys

"Mi nieto camina a la escuela debido a que la escuela esta muy cerca. Caminar es saludable para el." (My grandchild walks to school because the school is very close. Walking is healthy for him.)

"It is heavy with traffic after school; there are too many vehicles at the dismiss time, so it should open a gate on the Kerry Street."

"Walking takes much longer to get to school/ get from school and kids will have less time for school."

"A lot of cars don't stop at the stop sign. Vehicle speeds are fast in the school area."

"My husband and I both have the privilege to be able to drop off and pick up our kids. Regardless of how close we live to the school, we feel more comfortable picking them up."

"Por la seguridad de los niños no estoy de acuerdo que use bicicleta. Hay mucho transito y peatones." (For the safety of the children i do not agree they use bicycles. There is a lot of traffic and pedestrians.)

"The streets are too dangerous for kids to walk to school without an adult."



9.6 PROGRAMMING RECOMMENDATIONS

The programs identified in the following section aim to garner momentum for active transportation activities at Hill Elementary. The school lacks a Parent Teacher Organization or parent volunteers that can assist with the Safe Routes to School Programs. Parent participation at the Walking Safety Assessments was also low. Safe Routes to School programming is primarily a volunteer effort, but there are dedicated ongoing resources to support these successful efforts; as such, the Hill Elementary needs to put some initial effort towards developing a Safe Routes to School program by providing incentives for school staff to participate and/or recruiting volunteers to begin the effort. In a way, the school has already begun doing that. During drop-off, school staff assisted with students exiting their parent's/guardian's vehicles- similar to the Drop-Off Valet Program.

The programming recommendations identified below builds off of that effort, and can be the starting point Safe Routes to School Programming at Hill Elementary. It strives to respond to the concerns and comments received from the outreach process which is primarily comprised of the Walking Safety Assessment and Parent Surveys. While infrastructure improvements can address many of comments gathered, concerns related to crime, safety, and long distances between home and school can be tackled through encouragement, education, and enforcement programs. Once the school garners momentum for the programs identified below, it can move towards other programs discussed in Ch. 4-5 Programming Toolbox.

Recommendation #1: Drop-Off Valet Program

The Drop-Off Valet Program would alleviate some of the traffic congestion on 11th Street which presents safety concerns for students walking and bicycling to school. Hill Elementary is located at the terminus of 11th Street. Once motorists made it past the school gate on 11th Street, they are routed to the parking lot. Consequently, during drop-off and pick-up, 11th Street and the parking lot experience high levels of vehicular traffic.

SRTS volunteers can be positioned at the south end of the parking lot to assist with traffic flow. They can motion vehicles to come forward to the beginning of the drop-off zone, and assist students with exiting the vehicles. Through this program, vehicles can move quicker through the roadway, and have more defined spaces for drop-off, which improves visibility for pedestrians and bicyclists.

Recommendation #2: Weekly Walk-to-School Program

The Weekly Walk-to School Program is an encouragement program where Hill Elementary can provide small incentives for students to take active transportation to and from school. Many students live within close proximity to the school. According to the Parent Survey, 32% of students live less than a $\frac{1}{4}$ mile from the school, which is equivalent to less than ten minutes of walking. Another 22% of students live between $\frac{1}{4}$ and $\frac{1}{2}$ mile from the school, an equivalent to less than 15 minutes of walking. Combined, more than half (54%) of Hill Elementary students can walk to school within 15 minutes. Currently, only 18% of Hill Elementary students walk to school, while 72% of students arrive/ depart from the school via vehicle; this program can encourage more students to take active transportation to and from school. The school can offer a small prize for students who participate in the Weekly Walk-to-School Program.

Recommendation #3: Golden Sneaker Walking Program

The Golden Sneaker Walking Program is a friendly competition between the classrooms to encourage as many students to walk to and from the school. As noted above, more than half of Hill Elementary students live within close proximity to the school. Although the Golden Sneaker Walking Program strives to encourage students to walk more, students who bike or take other forms of active transportation to school can participate as well. For students that live further away, they can participate by walking or biking during their free time. The classroom with students who walk (or bike) the most wins the Golden Sneaker Award (or another prize.)

Recommendation #4: Drop-Off Point Program

The Drop-off Point Program offers opportunities for students to walk to school while reducing the high levels of vehicular traffic at the access point. According to comments received from the Walking Safety Assessment and Parent Surveys, parents stated that walking and bicycling to school is a challenge due to the long distance between home and school. The Drop-Off Point Program would continue to allow students to arrive to and depart from the school via personal vehicles, but participate in active transportation activities to and from Hill Elementary.

Hill Elementary is located primarily in a residential neighborhood; as such, there exists limited local destinations that can serve as drop-off points. However, the Mall of Fortune on Brookhurst Street and Westminster Avenue does lie within a quarter mile from the school, and can be an excellent drop-off point. Walking to and from the Mall of Fortune would provide students with approximately 30 minutes of physical activity per day- half of the recommended amount by the Centers for Disease Control and Prevention.

Recommendation #5: Walking School Bus Program

The Walking School Bus Program would provide the adult supervision needed to address the concerns associated with crime and violence. During the Walking Safety Assessment, participants repeatedly voiced this concern. This was supported with findings from the Parent Survey; according to the survey, 63% of parents of children who do not currently walk or bike to school stated that violence or crime is one of the main factors for not allowing their child to walk or bike to and from Hill Elementary.

Hill Elementary already has many students walking to and from the school. The program can form a group comprised of parents who already walk their child to school, and develop "Bus Routes" and "Bus Stops" to pick up/ drop off students to and from the school. Other "Bus Stop" locations include drop-off points such as the Mall of Fortune on Brookhurst Street and Westminster Avenue. This program should be coordinated with the Weekly Walk-to-School Program.

9.7 HILL ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



SCHOOL

- School
- School Access Location
- School Boundary

PROPOSED IMPROVEMENTS

- School Crosswalk
- ADA Curb Ramp
- Traffic Sign
- School Signage
- School Pavement Marking

Engineering & Operational Improvement Notes

Provide for upgraded pedestrian crossing of uncontrolled approaches with upgraded school area signage and markings per the latest CA MUTCD standards.



9.7 HILL ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



Conduct maintenance along pedestrian path (trimming bushes, trash clean up, etc.) on a regular basis to promote use of pedestrian bridge

Remove old staggered entrance gates and install new staggered entrance gates that will allow access to bicyclists. (Example Below)



Potential installation of light pole and pedestrian-scale lighting

Work with County Public Works to install vertical bar fence for pedestrian and student security. (Example below)



SCHOOL

School Access Location

School Boundary

PROPOSED IMPROVEMENTS

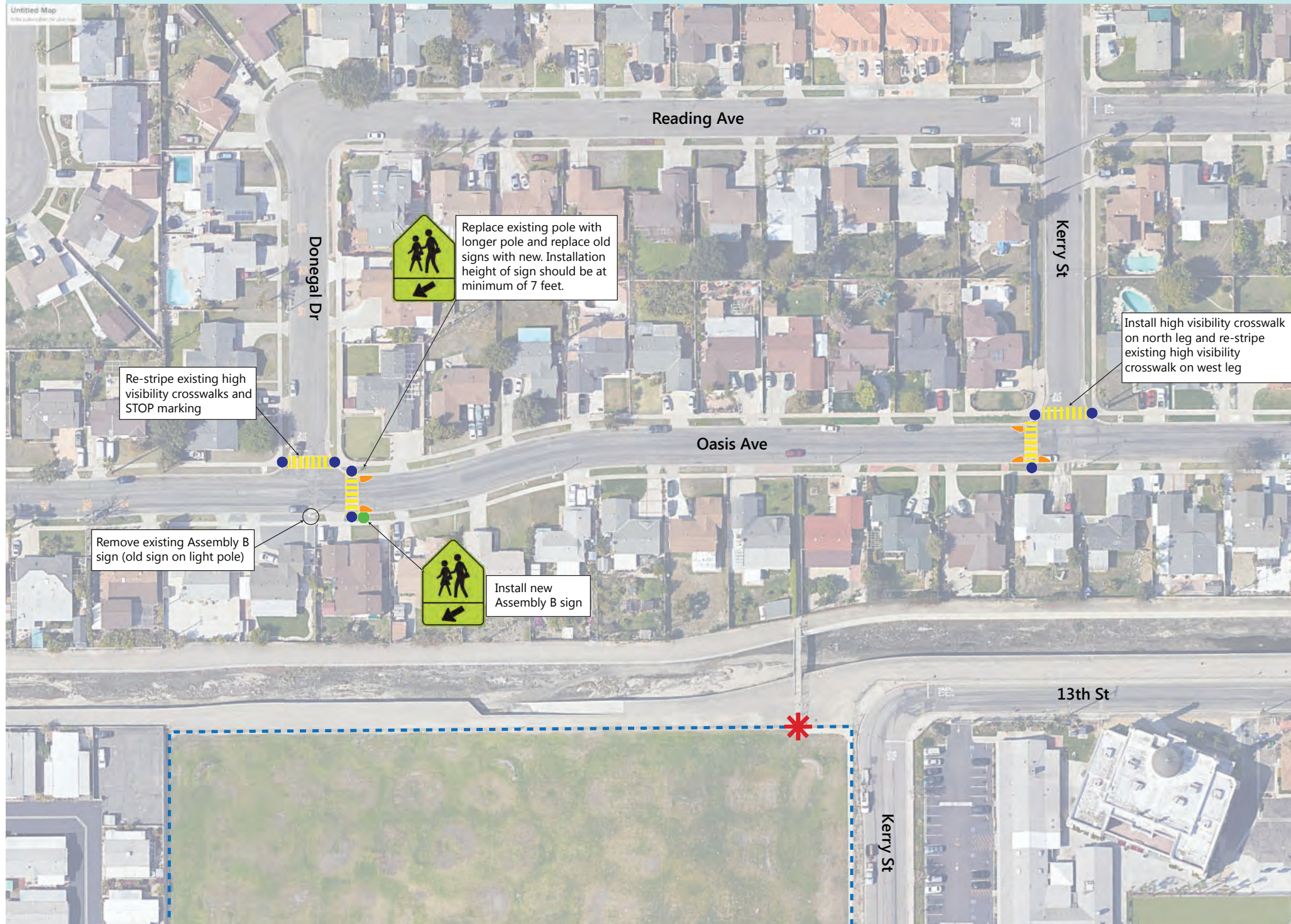
Pedestrian Scale Lighting





Engineering & Operational Improvement Notes

Provide for upgraded pedestrian crossing of uncontrolled approaches with upgraded school area signage and markings per the latest CA MUTCD standards.





9.7 HILL ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



SCHOOL

-  School Access Location
-  School Boundary

PROPOSED IMPROVEMENTS

-  School Crosswalk
-  ADA Curb Ramp
-  School Signage
-  Bulbout / Curb Extension

Engineering & Operational Improvement Notes

Provide for upgraded pedestrian crossing of uncontrolled approaches with upgraded school area signage and markings per the latest CA MUTCD standards.



9.8 INFRASTRUCTURE RECOMMENDATION DETAILS

Recommendations:

Install the following:

SIGNS:

- 4 x SW24-1 (CA) School (Assembly A)
- 4 x SW24-2 (CA) School Crossing w/arrow (Assembly B)
- 2 x R9-3: No Pedestrians

CROSSWALKS:

- 11 x High visibility yellow school crosswalks
- 1 x White parallel bar crosswalk

PAVEMENT MARKINGS:

- 3 x "SLOW SCHOOL XING"
- 4 x "STOP"

CURB RAMPS:

- 7 x ADA compliant curb ramps

ROADWAY MODIFICATIONS:

- 5 x curb extension islands at two pedestrian crossing locations.

OTHER MODIFICATIONS / IMPROVEMENTS:

- 1 x Security vertical bar fence along pedestrian bridge across storm water channel.
- 1 x Pedestrian access gate with staggered entrance that will allow access to pedestrian and bicyclists.
- 1 x pedestrian-scale light pole along pedestrian access bridge area.

Discussion:

11th Street is one of the most heavily utilized roadways for students and parents to access Hill Elementary. During drop-off and pick-up, the segment experiences high levels of vehicle volume which presents safety concerns for pedestrians crossing the roadway. Additionally, existing crosswalks are faded which further decrease visibility of pedestrians crossing Kerry Street and 11th Street. New pavement markings and freshly-painted high visibility school crosswalks at the intersection, along with the proper installation of signs can enhance the visibility of pedestrians crossing the two roadways and warn motorists of pedestrian activities.

Intersections such as Kerry Street and Kern Avenue, Kerry Street & Johannah Avenue, and Kerry Street and Hazard Avenue are the main access locations for pedestrians traveling to and from Hazard Avenue. A small section on the west side of Kerry Street is missing sidewalk; consequently, pedestrians were observed to walk on Kerry Street in the street adjacent to vehicles or in the dirt path. Due to right-of-way constraints, the east side of Kerry Street is the only appropriate access route for pedestrians. Therefore, new school signs and pavement markings can warn motorists of pedestrian crossings near the school, while new high visibility school crosswalks can increase visibility of pedestrians crossing Kern Avenue, Johannah Avenue, and Kerry Street.

Many students and parents that live north of Hill Elementary use the pedestrian bridge to access the school via the back gate. The crosswalks at the intersections of Oasis Avenue & Donegal Drive and Oasis Avenue & Kerry Street are faded, and some school signs need to be replaced. The recommendations call for re-striping the high visibility yellow school crosswalks to improve the visibility of pedestrians crossing the roadway, and installing a new crosswalk at the intersection of Oasis Avenue and Kerry Street for students and parents to cross Oasis Avenue while providing warning to motorists of pedestrian activity.

The combination of a small alley and pedestrian bridge that terminates at a gate that provides access to Hill Elementary is used by students and parents of Hill Elementary. As a result, it acts as a second access point to and from the school. Walk Audit participants expressed the convenience of this access point; it provides them, particularly those who walk or bike to school, with a short cut to the school. This segment, however, has many safety and accessibility concerns. Vegetation overgrowth and lack of pedestrian-scale lighting contribute to an unwelcoming environment for pedestrians and bicyclists. Meanwhile, Walk Audit Participants pointed out problems with coyotes that walk along the channel. The recommendations of installation of new vertical bar security fence, pedestrian lighting, and access gate would help improve the safety concerns and welcome pedestrians and bicyclists.

Students and parents walk along Brookhurst Street to reach their destinations east and north of Hill Elementary. A white parallel bar crosswalk at the intersection of 13th Street and Brookhurst Street can provide users with a marked crossing and also provide warn motorists of pedestrian activity at the intersection.

Hill Elementary is located at the western terminus of 11th Street. As such, many students walk along 11th Street to reach their destinations east of the school. New pavement markings can help warn motorists of pedestrian activity and crossings.

Cost Summary

The cost estimate table below summarizes the Hill Elementary area cost estimates for implementation, based on the cost assumptions described previously in Chapter 4 of this Plan.

SEGMENT	IMPROVEMENT	UNIT	COST	QTY	TOTAL	
Hill Elementary	Roadway Lighting (1 side of road)	Per Linear Foot	\$84	125	\$10,500	
	New Sign & New Post	Each	\$300	8	\$2,400	
	New Sign on Existing Post	Each	\$150	2	\$300	
	School Area Pavement Marking (Per Word)	Each	\$210	13	\$2,730	
	High Visibility Ladder Crosswalk	Each	\$1,480	11	\$16,280	
	ADA Curb Ramps	Each	\$4,968	7	\$34,776	
	Curb Extension - Raised	Per Intersection	\$72,685	0.75	\$54,513	
	Standard Crosswalks	Each	\$480	1	\$480	
	Remove Gate	Each	\$250	1	\$250	
	Install New Gate	Each	\$2,000	2	\$4,000	
	Vertical Bar Security Fence	Per Linear Foot	\$100	100	\$10,000	
	Subtotal					\$136,229
	Design (D) (Subtotal * 15%)					\$20,434
	Environmental (E) (Subtotal * 5%)					\$6,811
	Construction Management (CM) ((Subtotal + D + E) * 10%)					\$16,348
	Mobilization (M) ((Subtotal + D + E) * 5%)					\$8,174
	Traffic Control (TC) ((Subtotal + D + E) * 5%)					\$8,174
Contingency ((Subtotal + D + E + CM + M + TC) * 15%)					\$29,426	
Segment Total					\$225,596	

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STOP



10. Thomas Paine Elementary

- 10.1 Introduction
- 10.2 Existing Conditions
- 10.3 Existing Infrastructure
- 10.4 Observed Behaviors
- 10.5 Community Engagement
- 10.6 Programming Recommendations
- 10.7 Infrastructure Recommendations
- 10.8 Infrastructure Recommendation Details

10.1 INTRODUCTION

Thomas Paine Elementary is located on 15792 Ward Street in the Southern portion of Garden Grove near the intersection of Ward Street and Edinger Avenue. The main access point to the school is located on Ward Street, and the school is surrounded by residential housing. Nearby destinations include La Quinta High School to the North and Mile Square Park to the South. Other nearby destinations include local eateries and retail along Brookhurst Street and McFadden Avenue.

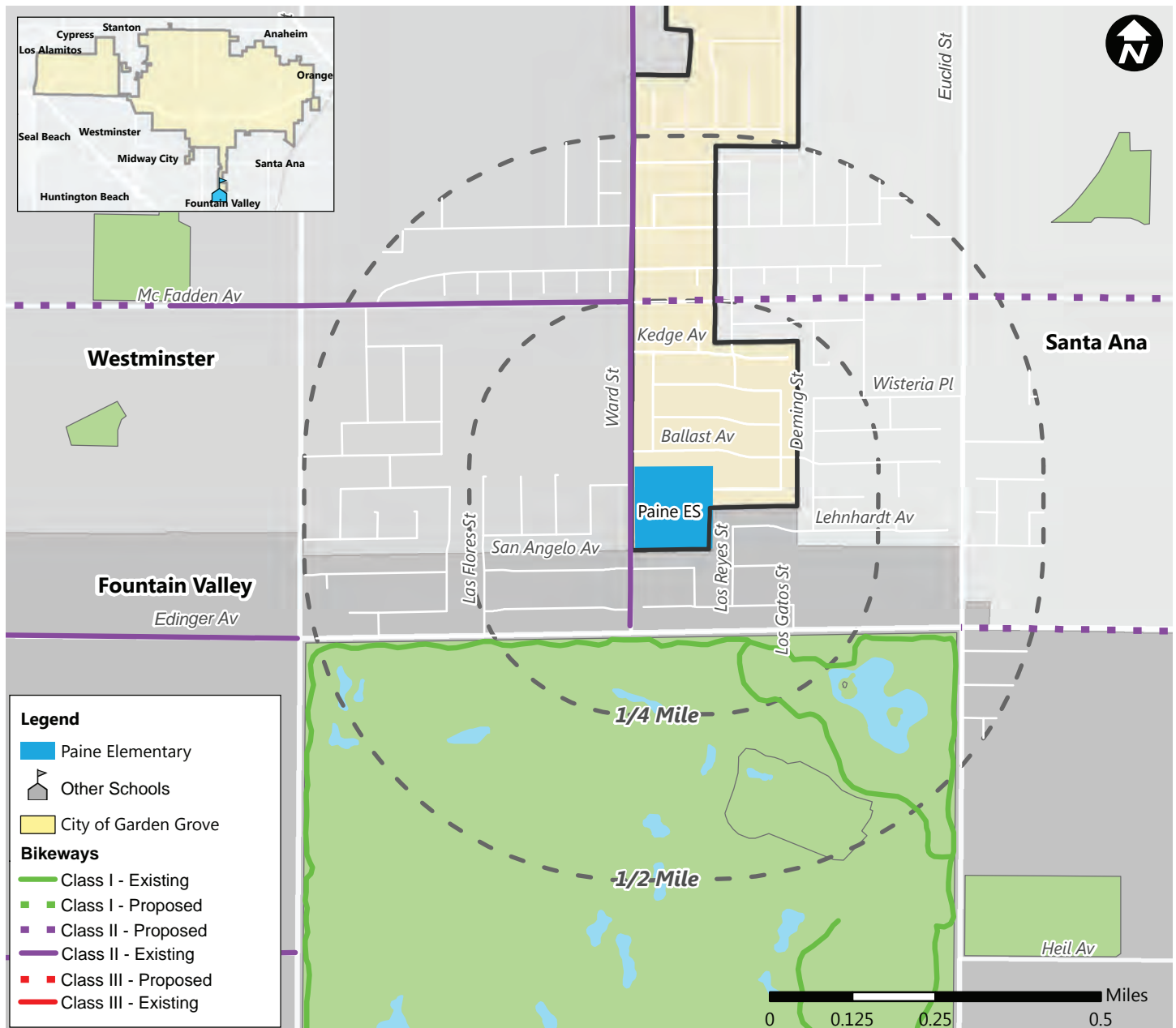


Figure 10-1: Map of School Location

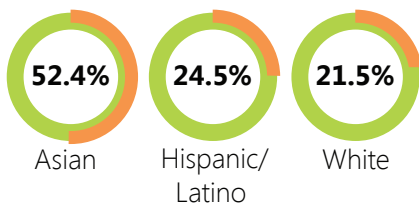
Thomas Paine Elementary School

School Snapshot

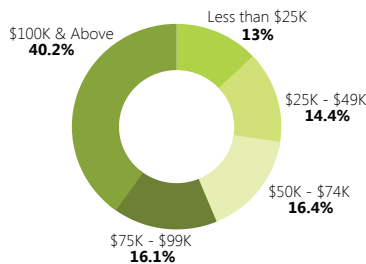
Thomas Paine Elementary enrolled **477 students** in the 2017-2018 school year. Of these students, **15.3%** currently walk and bike to school, while **58.5%** of students are drive to school.

COMMUNITY CHARACTERISTICS

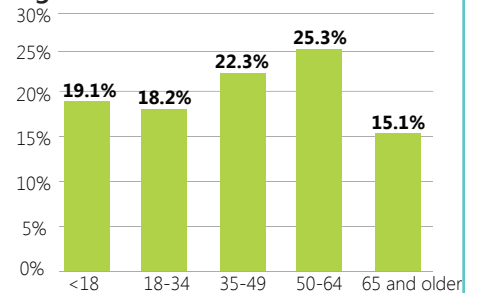
Race



Median Household Income

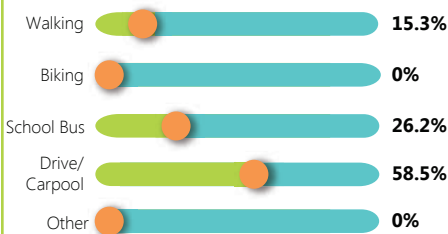


Age

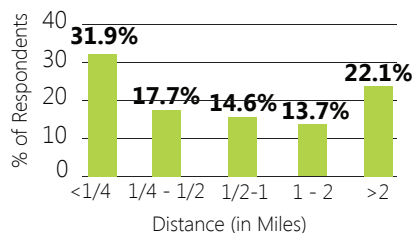


TRANSPORTATION

Mode Share to/from School



Distance between Home and School



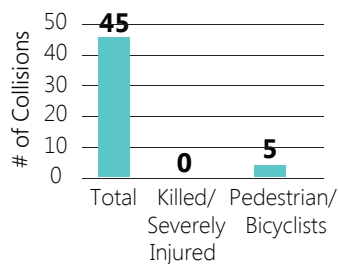
Input from the Community

"We would like a crossing guard to help the children cross."

"Too many people have been driving carelessly. Even though the light turned red at the crossing lane, they still drove past."

SAFETY

Transportation Collisions within 1/4 Mile Radius



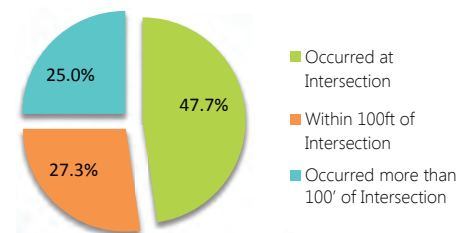
High Collision Roadways

- 1 Edinger Avenue (34)
- 2 McFadden Avenue (6)

High Collision Intersections

- 1 Edinger Avenue and Ward Street (28)
- 2 McFadden Avenue and Ward Street (8)
- 3 Edinger Avenue and Los Gatos Street (7)

Collision Locations



10.2 EXISTING CONDITIONS

An understanding of existing demographics, socio-economic conditions, and health conditions help identify the needs of the communities that live near Paine Elementary. This section displays seven factors that the City examined to better understand the communities. These seven factors are: bicycle and pedestrian collisions, median household income, population under 18 years old, households with limited English capabilities, children's access to health care, and communities' exposure to asthma and cardiovascular disease. The charts below summarize the findings from this effort. In the following pages, each factor will be discussed in further detail.

Race

	0.25 Mile
White	21.50%
African American or Black	0.10%
American Indian or Native Alaskan	0.00%
Asian	52.40%
Native Hawaiian or Pacific Islander	0.50%
Other	0.30%
Two or More	0.60%
Hispanic or Latino	24.50%

Median Household Income

	0.25 Mile
MHHI less than \$25,000	13.00%
MHHI \$25,000 - \$49,999	14.40%
MHHI \$50,000 - \$74,999	16.40%
MHHI \$75,000 - \$99,999	16.10%
MHHI \$100,000 - \$149,999	26.90%
MHHI \$150,000 or More	13.30%

Age

	0.25 Mile
Population under 18	19.10%
Age 18 - 34	18.20%
Age 35 - 49	22.30%
Age 50 - 64	25.30%
Age 65 or Older	15.10%

Language Capabilities

	0.25 Mile
English Only Households	34.20%
Spanish Speaking Households	15.10%
Limited English Speaking Households	19.00%

Collision Type

	#	0.25 Mile
Pedestrian	2	4.40%
Bicycle	3	6.70%
Total Collisions	45	100%
Total Bicycle and Pedestrian	5	11.10%

Pedestrian Injury Status

	#	0.25 Mile
Fatal	0	0%
Severely Injured	0	0%
Injury (Visible)	0	0%
Injury (Complaint of Pain)	2	100%
All Injured	2	100%
Property Damage Only	0	0%

Bicycle Injury Status

	#	0.25 Mile
Fatal	0	0%
Severely Injured	0	0%
Injury (Visible)	0	0%
Injury (Complaint of Pain)	3	100%
All Injured	3	100%
Property Damage Only	0	0%

Health and Environmental Factors

	0.25 Mile
Asthma	17th percentile
Cardiovascular Disease	22nd percentile
Ozone	51st percentile
PM 2.5	64th percentile
Diesel PM	49th percentile
Traffic Density	60th percentile

Demographic and socio-economic data retrieved from American Community Survey 2016 Estimates. Collision data was retrieved from TIMS 2013-2017, which does not include property-damage only related collisions. The TIMS data reviewed in this chapter focuses on collisions involving vehicles, pedestrians, and bicyclists for the surrounding areas of the six study school locations.

Vehicle, Pedestrian, and Bicycle Collisions

Within the 1/4 mile surrounding Paine Elementary, 45 collisions occurred between 2013 and 2017. Of those collisions, 5 (11.1%) involved a pedestrian or bicyclist. All injuries resulted in complaint of pain.

*Data retrieved from TIMS 2013-2017

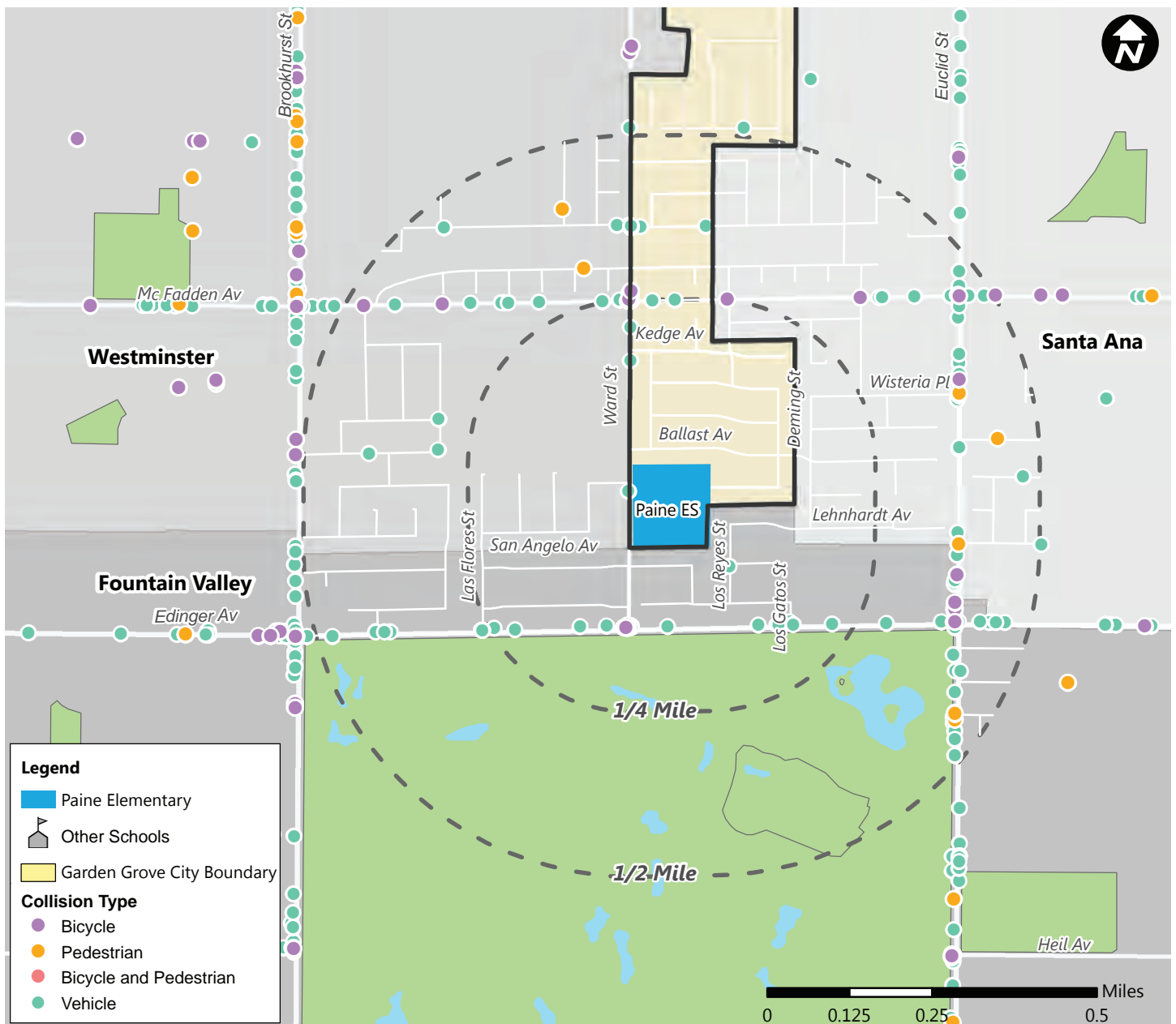


Figure 10-2: Map of Bike and Pedestrian Collisions within a 1/4 and 1/2 Mile of Paine Elementary.

Median Household Income

Approximately 28% of households within a ¼ mile of Paine Elementary have a median household income less than \$50,000 a year. For this same area, the estimated median household income is \$80,198- well above the statewide median household income of \$63,783, the county wide median household income of \$78,145, and the Active Transportation Program’s most recent cycle application threshold for disadvantaged community severity of \$51,026

*Data retrieved from American Community Survey 2016 Estimates

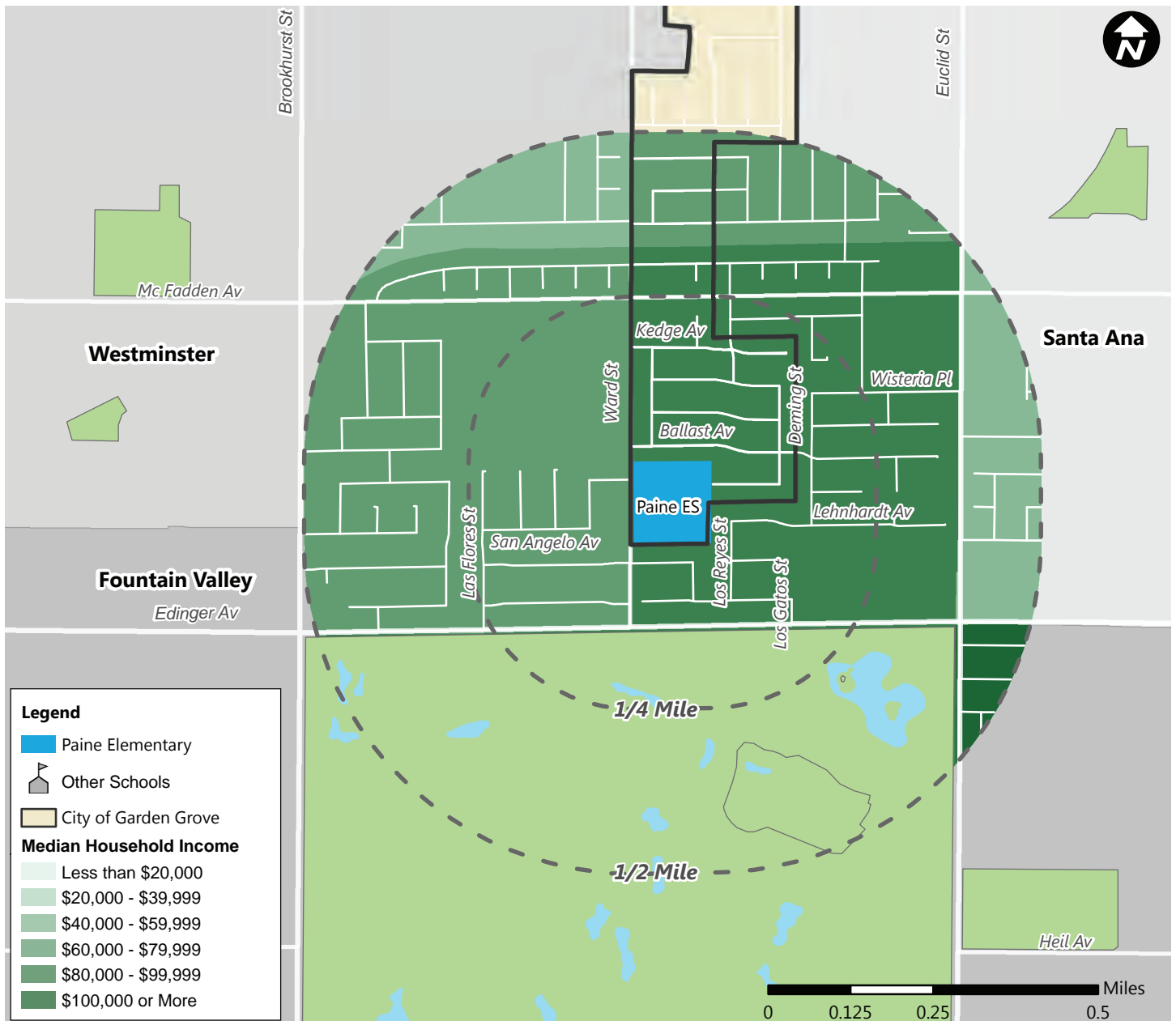


Figure 10-3: Map of Median Household Income

Population Younger Than 18 Years Old

Approximately 1 in 5 (19.1%) residents living in the ¼ mile area surrounding Paine Elementary are under the age of 18. This rate is just under the citywide population share of 23.1%. Within a ½ mile area, some Census Block Groups have a rate as high as 23%.

*Data retrieved from American Community Survey 2016 Estimates

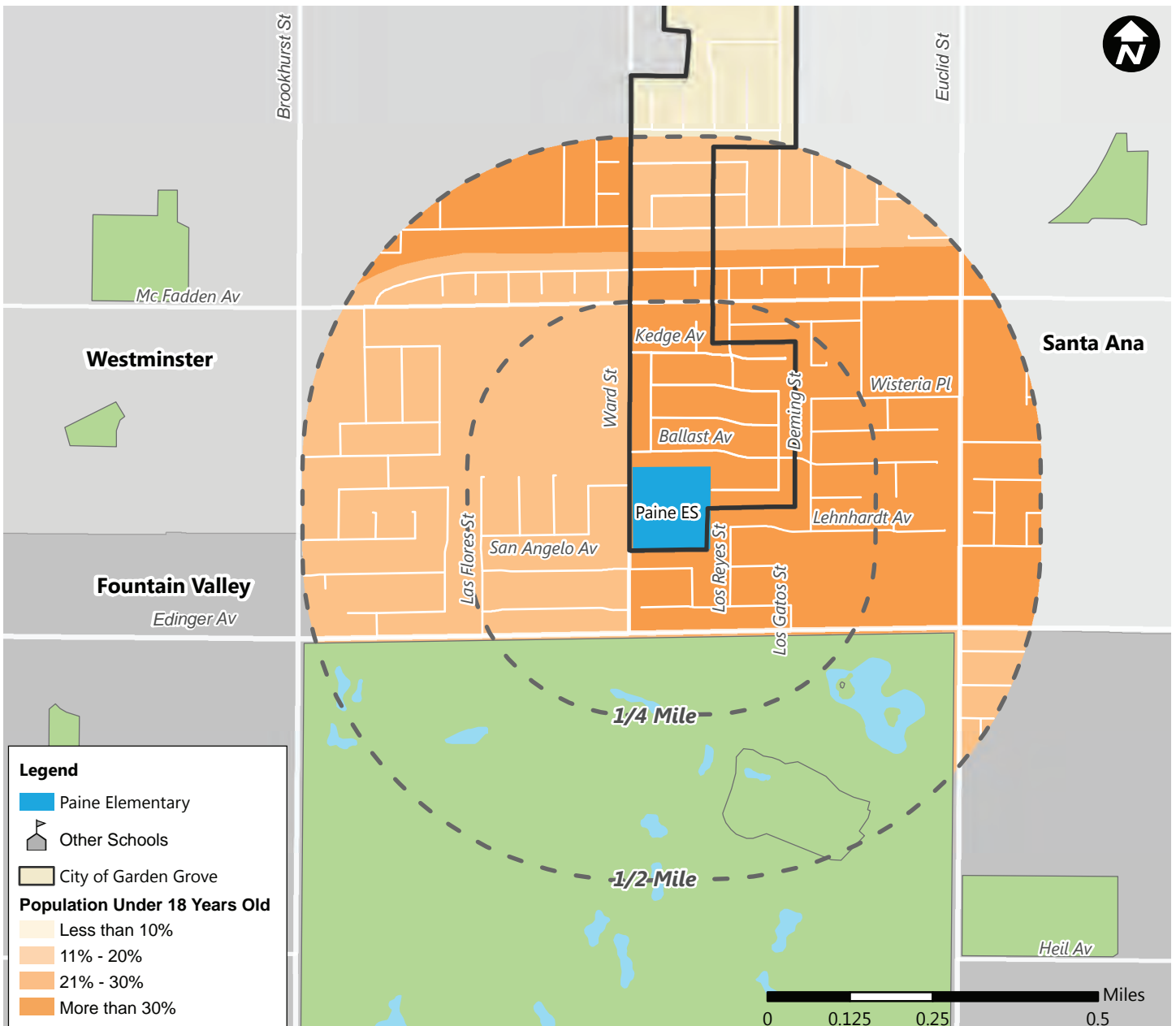


Figure 10-4: Map of Population Younger Than 18 Years Old

Households With Limited English Capabilities

The area surrounding Paine Elementary has a high rate of Asian and Hispanic residents. Approximately 52% of households within a ¼ mile of the school are of Asian descent and nearly 25% of households are of Hispanic of Latino descent. The high level of households that has limited English capabilities correlates to these demographic statistics. An average of 19% of all households has limited English communication abilities, although certain neighborhoods have more households that have limited English capabilities.

*Data retrieved from American Community Survey 2016 Estimates

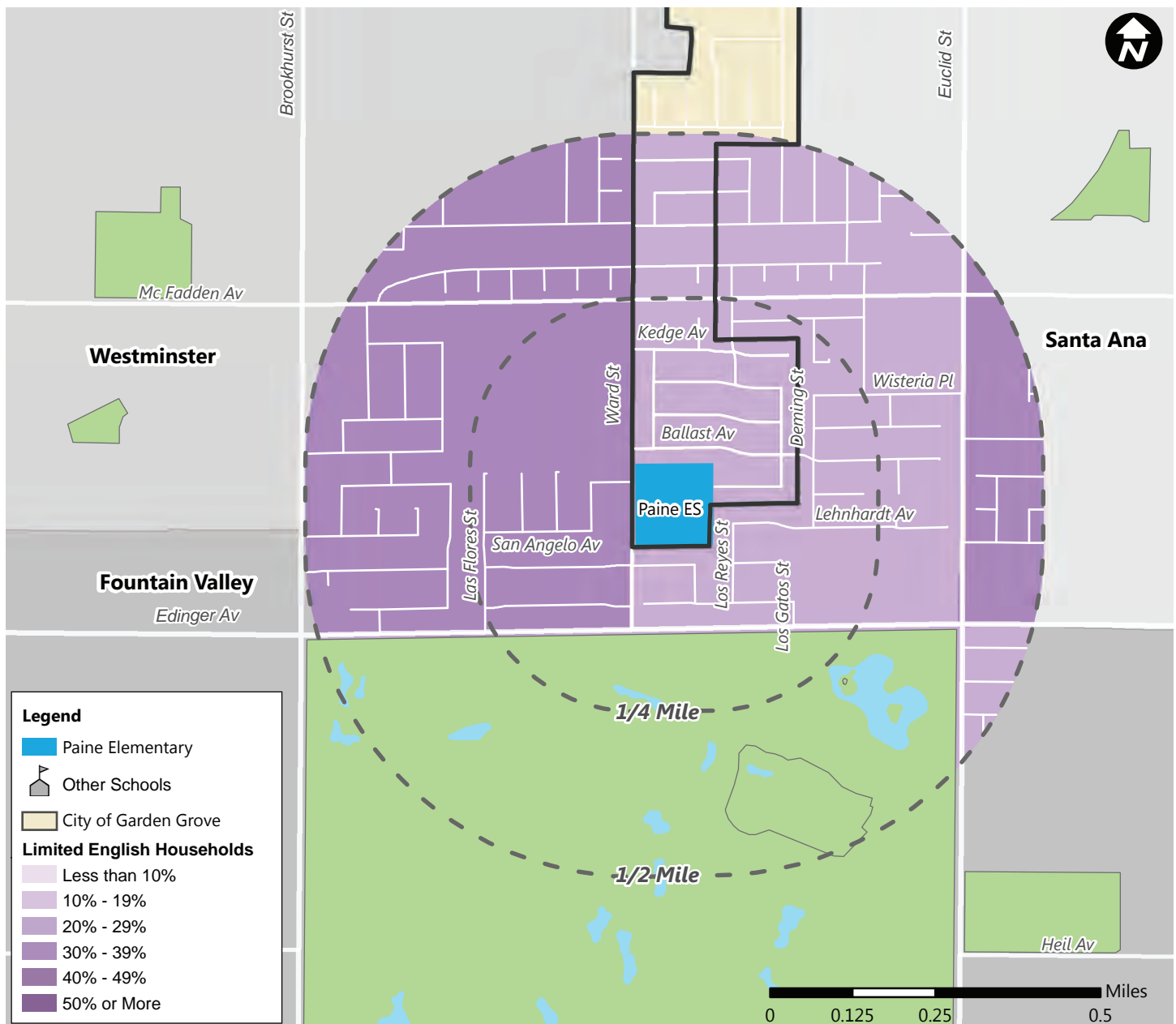


Figure 10-5: Map of Households With Limited English Capabilities

Population With Asthma

The rates of asthma-related hospital visits surrounding Paine Elementary are below most areas in California according to CalEnviroScreen 3.0. The tracts surrounding the school all rank below the 30th percentile of all census tracts in California.

*Data retrieved from CalEnviroScreen 3.0

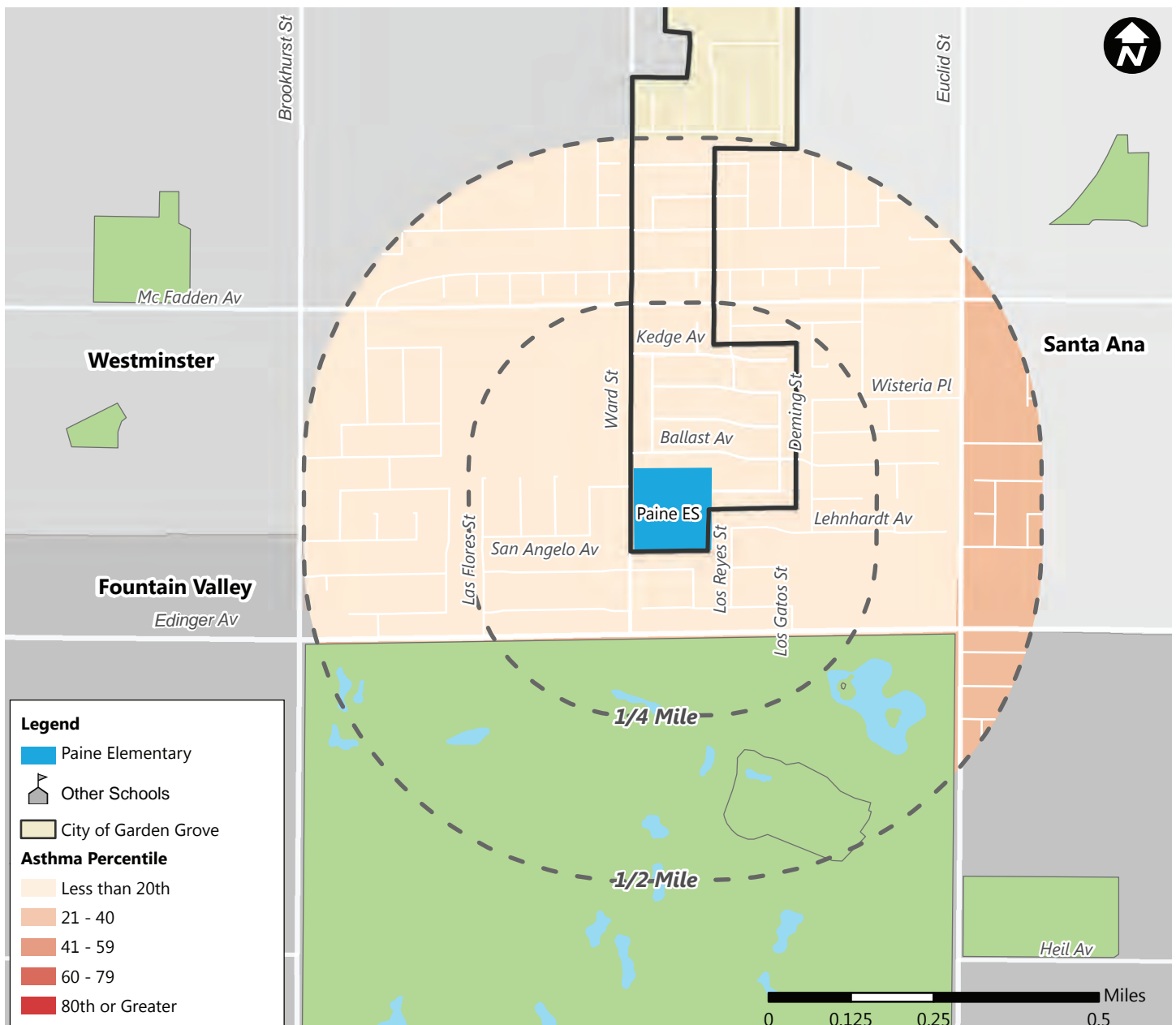


Figure 10-6: Map of Population With Asthma

Households With Cardiovascular Disease

The rates of Cardiovascular Disease-related hospital visits surrounding Paine Elementary rank at the 22nd percentile. According to CalEnviroScreen 3.0, multiple census tracts surrounding the school rank as high as the 39th percentile. These areas may benefit most from the health benefits of active transportation to and from school. Although Cardiovascular Diseases are not prevalent among children, developing healthy behaviors early in life plays a significant role in reducing the risk of developing cardiovascular diseases in adulthood.

*Data retrieved from CalEnviroScreen 3.0

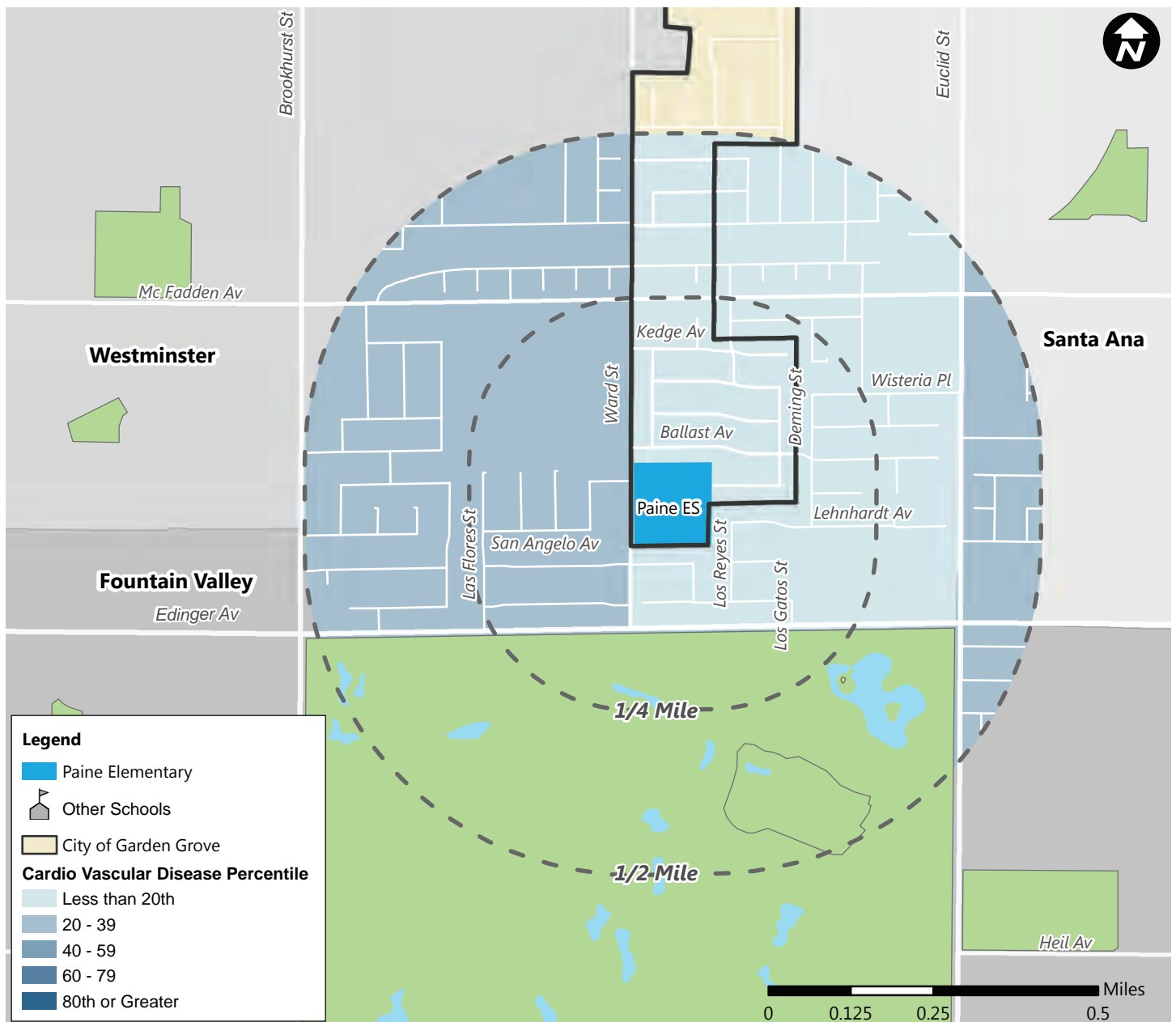


Figure 10-7: Map of Population With Cardiovascular Diseases

Children With No Access To Health Care

The rates of health insurance coverage for the population under the age of 18 are relatively high throughout California. However, some census tracts surrounding Paine Elementary have a rate of children with no access to health care above 10%.

*Data retrieved from CalEnviroScreen 3.0

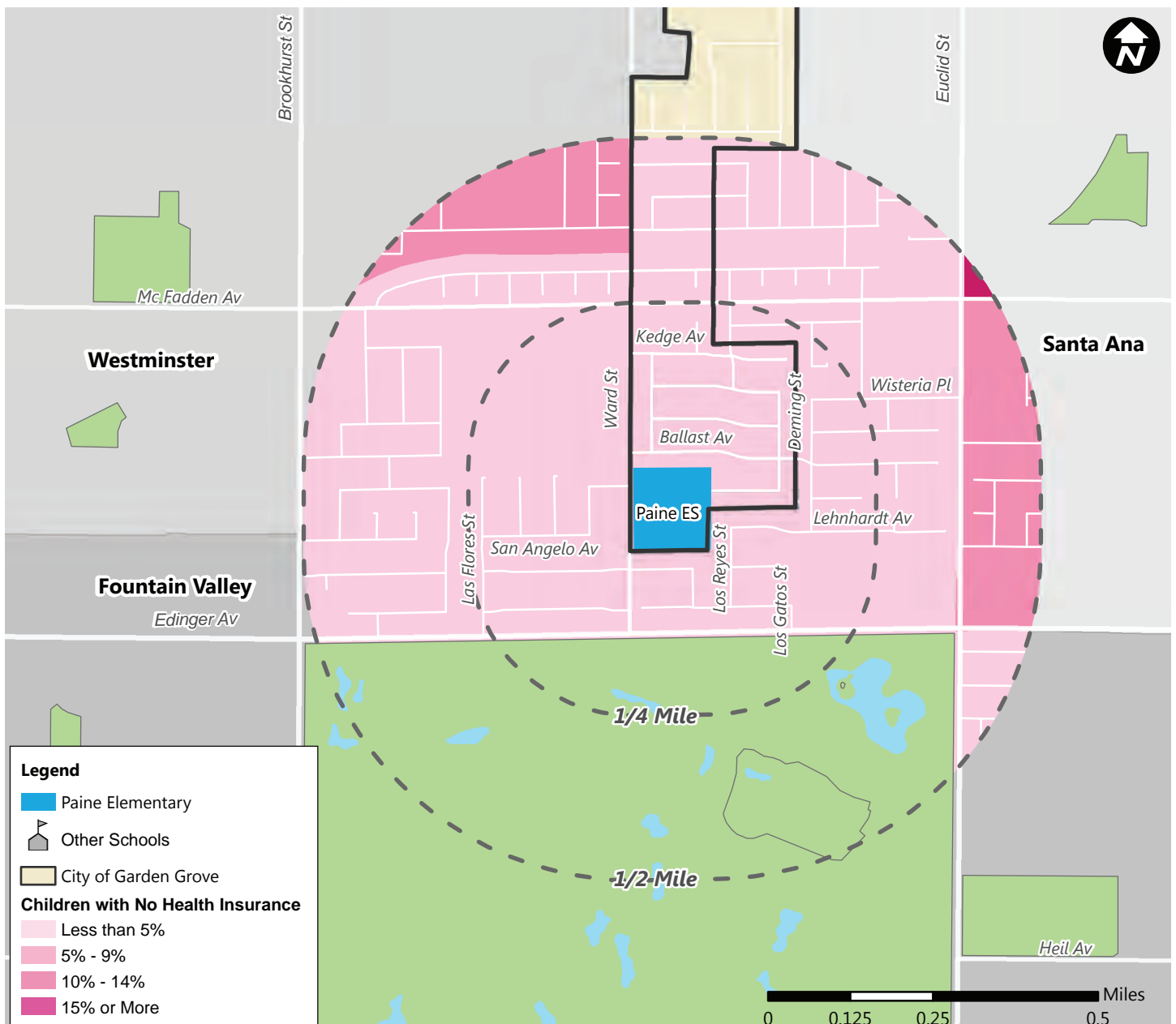
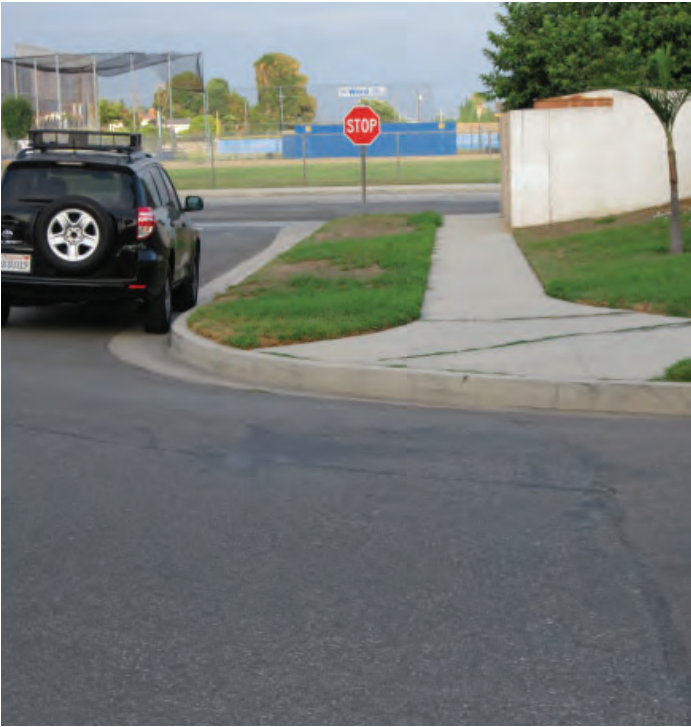


Figure 10-8: Map Of Children With No Access To Health Insurance

10.3 EXISTING INFRASTRUCTURE



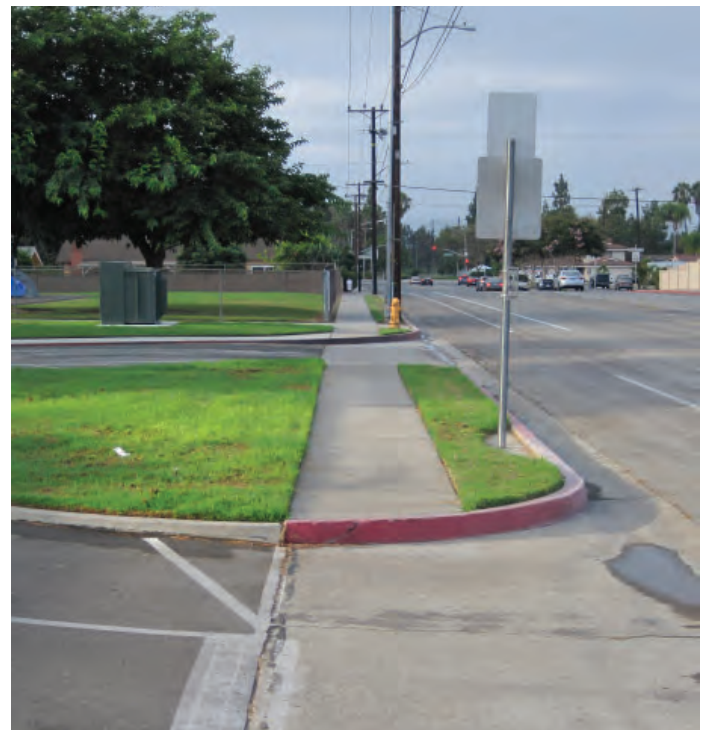
Sidewalks with missing ADA compliant curb ramps.



Bike lanes with faded pavement markings and missing signs.



ADA compliant curb ramps provided at existing pedestrian signal crossing and adjacent roadway.



Missing ADA compliant curb ramps along sidewalk in front of the school.



Existing pedestrian sign crossing adjacent to the school parking lot.



Existing high visibility crosswalk and ADA compliant curb ramps at Florence Ave/Ward St frontage road.



Right-turn only restrictions at school parking lot exit driveway.



Faded roadway pavement markings along Ward Street.

10.4 OBSERVED BEHAVIORS

The following presents a list of infrastructure concerns and behavioral issues that were observed at Thomas Paine Elementary.

Paine Drop-Off Parking Lot Area

- Students are dropped off at various points along the parking lot.
- Students walking in between vehicles after getting dropped off to walk towards the school entrance.

Ward Street and Florence Avenue

- Some vehicles observed traveling at speeds higher 25 mph during school start or release time.
- Most students and parents use pedestrian signal crossing.

Ward Street and Ballast Avenue

- Stop-controlled on Ballast Avenue.
- Intersection is near the school providing access to adjacent neighborhood.
- No ADA compliant curb ramps provided along Ward Avenue.
- High vehicle and pedestrian activity.
- Parents park along Ballast Street and walk with students to/from the school entrance during morning and afternoon times.

Ward Street

- Posted speed limit of 40 mph.
- Assembly C (School speed limit 25 when children are present) signage is missing near school area.
- Striping and pavement markings are faded.
- On-street parking is allowed along both sides.
- J-walking occurring south of pedestrian signal.

Ward Street (cont'd)

- Class II bike lanes provided but striping and pavement markings are faded and signage is missing.

Spar Street and Ballast Avenue

- Uncontrolled intersection.
- ADA compliant curb ramps not provided.
- High vehicle and pedestrian activity.
- Parents park along Ballast and Spar Street and walk with students to/from the school entrance during morning and afternoon times.



10.5 COMMUNITY ENGAGEMENT

The City strove to implement infrastructure improvements that not only responded to the community's needs and address their concerns, but were also feasible within engineering limitations. To gather community input, the City conducted Walking Safety Assessments (WSA), collected Parent Surveys, and worked with teachers to collect Student Travel Tallies in classrooms. The City also collaborated with Paine Elementary School staff and Garden Grove Unified School District staff to market the project to the Paine Elementary School community, nearby businesses, and local organizations.

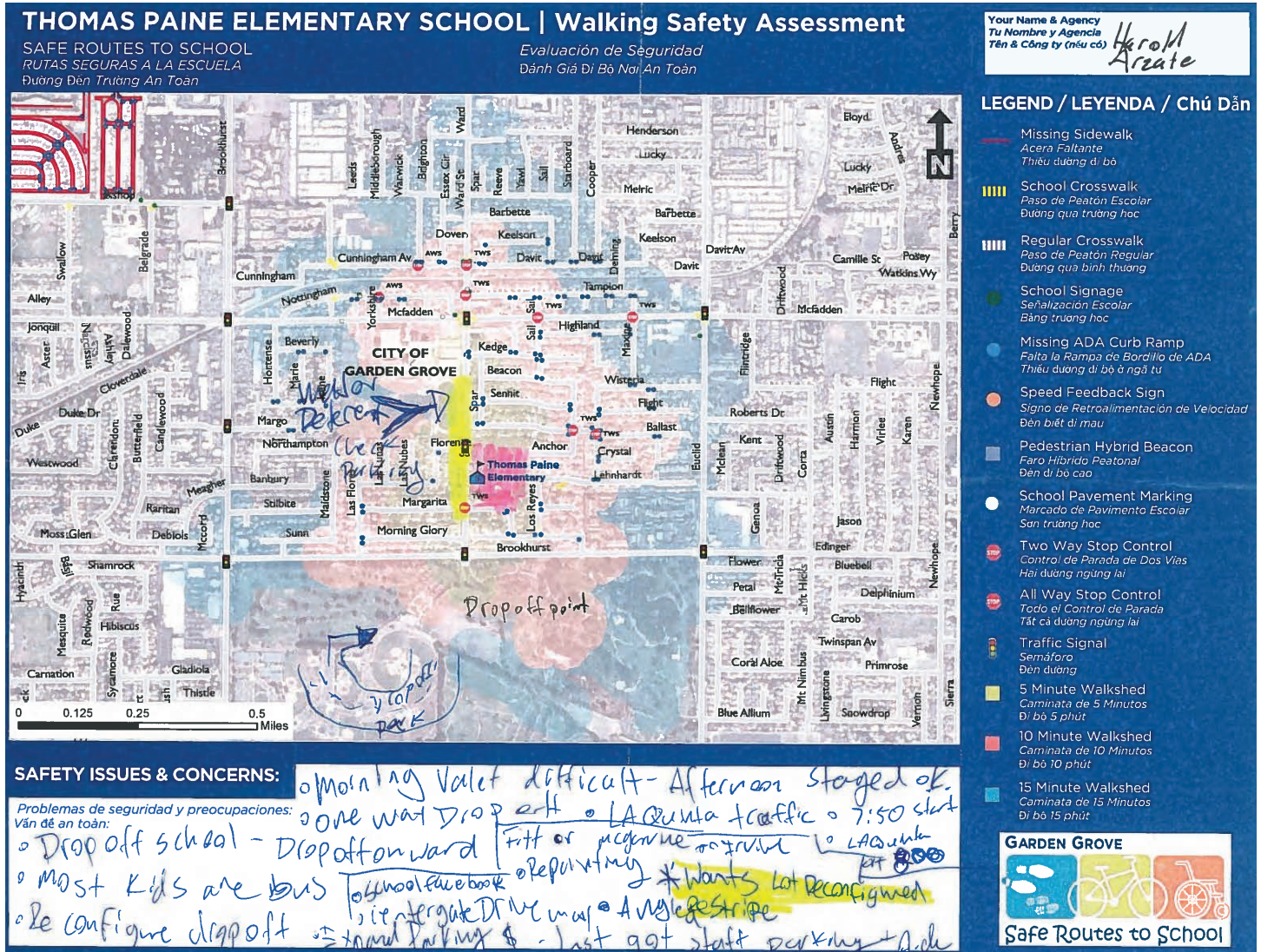


Figure 10-9: Map used at Walking Safety Assessment with comments from event participant.

Walking Safety Assessment

The Project Team hosted a Walking Safety Assessment on February 14, 2018 to afford community members an opportunity to express their concerns and explore ideas to improve the roadways surrounding the school. Approximately 15 parents and key stakeholders dedicated their valuable time to participate in the event.

Key stakeholders included:

- Parents/Guardians
- Paine Elementary Staff
- GGUSD Staff
- Garden Grove Police
- City Staff

At the Walking Safety Assessment, participants walked around the vicinity of schools, discussed key areas of concerns and explored a range of improvements that they would like to see. After the walk, participants gathered for a discussion on the primary issues that they saw during the walk, as well as routes that affect them going to and from the school. A wide range of potential solutions were explored during these exercises. Solutions that were discussed aimed at addressing participants' main concerns and adhering to engineering limitations so that the ultimate list of improvements would offer beneficial immediate and long-lasting outcomes to the community.



Participants discussing their concerns at a stop along the walking route



Project staff engaging with students in an educational activity

Parent Surveys

The “Parent Survey About Walking and Biking to School” form from the National Safe Routes to School Center was used as an expanded data collection tool. The survey gathered information such as the distance from a student’s home to school, travel mode distribution, and parent perceptions regarding walking and biking to school.

Parent Surveys

	Count
Number of Survey Responses	255
# of K-8 Students in All Households	385

Travel Mode Distribution

	Percentage
Walk	15.31%
Bike	0.00%
School Bus	26.24%
Vehicle	57.85%
Carpool	0.60%
Transit	0.00%
Other	0.00%

Distance Between Home And School

	Percentage
Less than 1/4 mile	31.86%
1/4 mile up to 1/2 mile	17.70%
1/2 mile up to 1 mile	14.60%
1 mile up to 2 miles	13.72%
More than 2 miles	22.12%

Parent Concerns About Walking and Biking to School

	Percentage	Rank
Distance	63.92%	1
Violence or Crime	61.96%	2
Safety of Intersections and Crossings	59.22%	3
Amount of Traffic Along Route	58.43%	4
Speed of Traffic Along Route	55.69%	5
Weather or Climate	54.51%	6
Time	51.37%	7
Crossing Guards	49.80%	8
Participation in After-School Programs	45.49%	9
Adults to Bike/Walk With	45.49%	10
Sidewalks or Pathways	44.71%	11
Convenience of Driving	44.31%	12

Student Travel Tallies

The City collaborated with Paine Elementary Staff to collect data using the “Safe Routes to School Students Arrival and Departure Tally Sheet”. The Tally Sheet predominately gathers data on travel mode distribution. It supplements the data provided from the Parent Surveys.

Student Travel Tallies

	Count
Number of Students Assessed in Tally	459
Number of Trips Assessed in Tally	2580
Morning	1300
Afternoon	1280

Travel Mode Distribution (From Tallies)

	Percentage
Walk	11.59%
Bike	0.19%
School Bus	30.11%
Vehicle	57.10%
Carpool	1.01%
Transit	0.00%
Other	0.00%

Comments retrieved from Parent Surveys

"I would like for my kid to bike or walk to school, but I'm worried about getting penalized."

"When we are out of work early, we pick up our child on bike or we walk."

"I know that biking to school and home is healthier and more fun for the kids, but I don't agree with letting my daughter because she is a girl and could kidnapped."

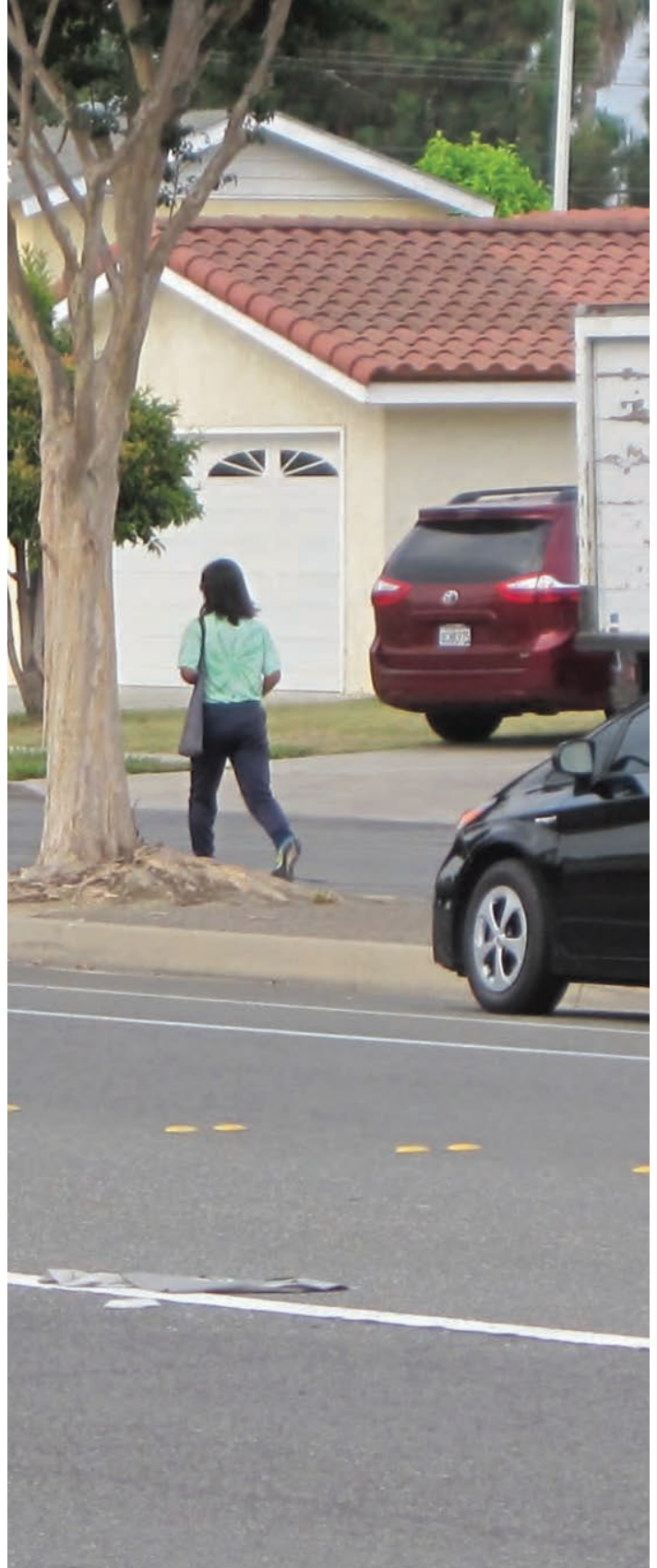
"I am a single parent and must worry about everything in the household. I don't feel comfortable letting my daughter walk to school by herself because it is not safe."

"My daughter is very young and it is a long distance to take her to school riding a bicycle."

"I am unable to answer the question above because it is a long distance for my child to ride his bike to school."

"My child is young, and it is not safe for them to walk or bike to school."

"All the drivers make it not safe for children walking or biking to school and crossing the street in front of the school."



10.6 PROGRAMMING RECOMMENDATIONS

The recommendations identified below are four programs that Hill Elementary can begin its Safe Routes to School programming efforts with. It seeks to address some of the primary concerns and comments received from the outreach process. Engineering improvements can address many of the comments gathered; however, concerns related to crime, safety, and long distances between home and school can be tackled through encouragement, education, and enforcement programs. Once the school generated momentum for the programs identified below, it can move towards other programs discussed in Ch. 4-5 Programming Toolbox.

One of the key challenges for this effort is gathering the human resources to initiate the programs. Safe Routes to School programming is primarily a volunteer effort, but there are dedicated ongoing resources to support these successful efforts. Paine Elementary currently has an inactive Parent Teacher Organization, and lacks parent volunteers that can assist with the Safe Routes to School Programs. Meanwhile, parent participation at the Walking Safety Assessments was also low. One strategy that Paine Elementary can begin Safe Routes to School programming is to provide incentives to school staff to participate in the effort. Simultaneously, the school can recruit parent volunteers on this effort.

Recommendation #1: Weekly Walk-to-School Program

The Weekly Walk-to-School Program is an encouragement program where Paine Elementary can provide small incentives for students to take active transportation to and from school. Many students live within close proximity to the school. According to the Parent Survey, 32% of students live less than a ¼ mile from the school, which is equivalent to less than ten minutes of walking. Another 17% of students live between ¼ and ½ mile from the school, an equivalent to less than 15 minutes of walking. Combined, approximately half (49%) of the students can walk to school within 15 minutes. Currently, only 15% of Hill Elementary students walk to school, while 58% of students arrive/ depart from the school via vehicle; this program can encourage more students to take active transportation to and from school.

The school can offer a small prize for students who participate in the Weekly Walk-to-School Program. The program is low cost; however, it does require teachers to assist with handling out prizes for students

who participate- akin to the time commitment to administer the Student Travel Tally.

Recommendation #2: Walk and Roll Day and/or International Walk to School Day

Walk and Roll to School Day is an organized event where students walk or bike to school. International Walk to School Day is a similar effort; however, it is a part of a larger, international-wide event which occurs annually in October. These events can be simple or complex depending on the school's commitment. It can consist of organizing a Walking School Bus and/or providing small giveaways for participants.

To kick-off the SRTS Programming efforts, and recruit parent volunteers to join the effort, Paine Elementary School could host a Walk and Roll Day (and if time schedule aligns- International Walk to School Day). This strategy would require more time commitment than a Weekly Walk-to-School Program since it's an organize event.

Recommendation #3: Drop-Off Valet Program

The Drop-Off Valet Program would alleviate some of the traffic congestion on Ward Street which presents safety concerns for students walking and bicycling to school. Paine Elementary is located on Ward Street, a local street that provides access in the North and South directions. During school hours, Ward Street experiences high levels of vehicular traffic. Simultaneously, however, high levels of pedestrians cross the roadway at the traffic signal going to and from the west side of the school.

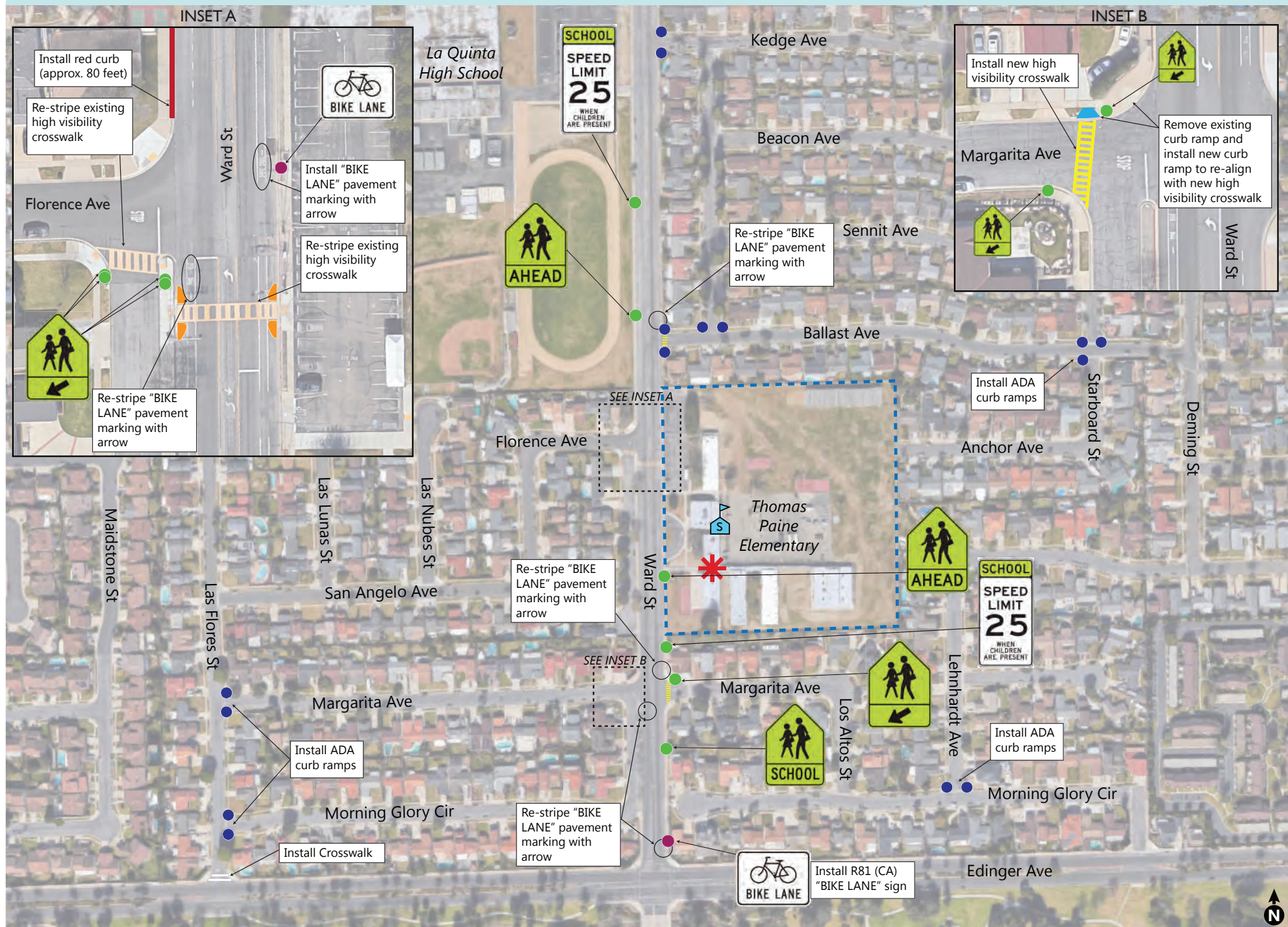
SRTS volunteers can be positioned on the west side of the Ward Street across the school to assist with traffic flow. Vehicles can arrive at the school from the north on Ward Street. SRTS volunteers can motion vehicles to come forward to the starting point of the drop-off line, and assist students with exiting the vehicles. A second shift of SRTS volunteers can assist students with safely crossing Ward Street. Through this program, pedestrians can safely cross Ward Street, and vehicles can move quicker through the roadway and have more defined spaces for drop-off, which improve visibility for pedestrians.

Recommendation #4: Drop-Off Point Program

The Drop-off Point Program offers opportunities for students to walk to school while reducing the high levels of vehicular traffic on Ward Street. According to comments received from the Walking Safety Assessment and Parent Surveys, parents stated that walking and bicycling to school is a challenge due to the long distance between home and school. The Drop-Off Point Program would continue to allow students to arrive to and depart from the school via personal vehicles, but participate in active transportation activities to and from Paine Elementary.

Paine Elementary is located primarily in a residential neighborhood; as such, there exists limited local destinations that can serve as drop-off points. However, the Mile Square Park does lie within a quarter mile from the school, and can be an excellent drop-off point. Walking to and from the park would provide students with approximately 30 minutes of physical activity per day- half of the recommended amount by the Centers for Disease Control and Prevention.

10.7 THOMAS PAINE ELEMENTARY INFRASTRUCTURE RECOMMENDATIONS



SCHOOL

- School
- School Access Location
- School Boundary

PROPOSED IMPROVEMENTS

- School Crosswalk
- Crosswalk
- Red Curb (no parking)
- ADA Curb Ramp
- Traffic Sign
- School Signage
- Bulbout / Curb Extension

Engineering & Operational Improvement Notes



10.8 INFRASTRUCTURE RECOMMENDATION DETAILS

Recommendations:

Install the following:

SIGNS:

- 2 x R81 (CA): Bike Lane
- 1 x SW24-1 (CA) School (Assembly A)
- 7 x SW24-2 (CA) School Crossing w/arrow (Assembly B)
- 2 x SW24-3 (CA) School Crossing Ahead
- 2 x SR4-1 School Speed Limit

CROSSWALKS:

- 5 x High visibility yellow school crosswalks
- 1 x White parallel bar crosswalk

PAVEMENT MARKINGS:

- 6 x "BIKE LANE"

CURB PAINTING:

Approximately 80 feet of red curb along west side of Ward Street north of Florence Avenue.

CURB RAMPS:

- 15 x ADA compliant curb ramps

CURB MODIFICATIONS:

4 x curb extensions islands at one pedestrian crossing location.

Discussion:

Las Flores Street provides students and parents with access to destinations north and south of Paine Elementary. It lacks ADA curb ramps at the intersections of Las Flores Street & Margarita Avenue and Las Flores Street & Morning Glory Avenue. New ADA curb ramps can provide pedestrians, particularly those using wheelchairs and/or strollers, with a continuous path of travel to their destinations. A new crosswalk at the intersection of Las Flores Street & Edinger Avenue can help warn motorists of pedestrian activity at this intersection.

Ward Street is located immediately adjacent to Paine Elementary. Ward Street is heavily utilized by pedestrians and motorists to reach their destinations north and south of Paine Elementary. Meanwhile, many pedestrians use the mid-block pedestrian signal to cross Ward Street and head westward via Florence Avenue. The corridor also provides a Class II Bike Lane for bicyclists to use; however, some "BIKE LANE" pavement markings are missing and some are faded that make it difficult to identify the bike lane. Installing new and re-striping the existing "BIKE LANE" pavement markings can help provide motorists with more warnings about bicyclists in the area.

New pavement markings and school signs can warn motorists about pedestrian crossings, while markings on the bike lane can better define the space for bicyclists. A new crosswalk at the intersection of Ward Street and Ballast Avenue can provide warning to motorists about pedestrian activity at this location, especially as it is used by many pedestrians during the school drop-off and pick-up hours.

Pedestrians use the Ward Street corridor to reach the residential neighborhoods west and south of Paine Elementary. New school signs and pavement markings can help warn motorists about pedestrian crossings, making roadway safer for pedestrians and bicyclists. The addition of new crosswalks at the intersection of Ward Street and Margarita Avenue can bring more visibility to pedestrians crossing the respective streets.

Ballast Avenue provides parents and students with access to the residential neighborhood north and east of the school. The corridor lacks ADA curb ramps at the intersection of Ballast Avenue and Starboard Street which disrupts the path of travel for pedestrians, particularly those using wheelchairs and/or strollers. New ADA curb ramps can help provide adequate access to all users along Ballast Avenue.

The intersection of Morning Glory Avenue and Los Reyes Street is used by students and parents walking to and from Paine Elementary. New ADA curb ramps can provide pedestrians with a continuous path of travel, particularly those using wheelchairs and/or strollers.

Cost Summary

The cost estimate table below summarizes the Paine Elementary area cost estimates for implementation, based on the cost assumptions described previously in Chapter 4 of this Plan.

SEGMENT	IMPROVEMENT	UNIT	COST	QTY	TOTAL	
Paine Elementary	New Sign & New Post	Each	\$300	14	\$4,200	
	High Visibility Ladder Crosswalk	Each	\$1,480	5	\$7,400	
	ADA Curb Ramps	Each	\$4,968	15	\$74,520	
	Curb Extension - Raised	Per Intersection	\$72,685	0.5	\$36,342	
	Standard Crosswalks	Each	\$480	1	\$480	
	Paint Curb	Per Linear Foot	\$2	80	\$160	
	Bike Lane with Arrow Pavement Marking	Each	\$250	6	\$1,500	
	Subtotal					\$124,602
	Design (D) (Subtotal * 15%)					\$18,690
	Environmental (E) (Subtotal * 5%)					\$6,230
	Construction Management (CM) ((Subtotal + D + E) * 10%)					\$14,952
	Mobilization (M) ((Subtotal + D + E) * 5%)					\$7,476
	Traffic Control (TC) ((Subtotal + D + E) * 5%)					\$7,476
	Contingency ((Subtotal + D + E + CM + M + TC) * 15%)					\$26,914
	Segment Total					\$206,341

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11. Implementation

- 11.1 Introduction
- 11.2 Project Prioritization
- 11.3 Funding Opportunities

11.1 INTRODUCTION

The Implementation Plan chapter focuses on two important facets of the transportation planning process that are needed to achieve the goals identified earlier in this Plan: Project Prioritization and Funding Opportunities. The Project Prioritization process ranks the infrastructure projects identified in each of the school chapters according to a set of predefined criteria, and develops a Project Prioritization List for each school. Meanwhile the Funding Opportunities subsection discusses different federal, state, regional, and local funding sources that the City can seek to implement the projects identified in this Plan.





11.2 PROJECT PRIORITIZATION

The purpose of a prioritization analysis is to provide the City of Garden Grove and other agencies with an implementation guide to the projects that offer the greatest potential benefit to students and parents walking to and from school.

While projects with higher rankings should generally be implemented before projects with a lower rank, the City may choose to advance specific projects for other interests or as certain types of funding become available. Additional analysis should be conducted periodically in response to major changes in population, the environment, and roadway/pedestrian network.

The project prioritization model used for this Plan was developed with considerations to three key categories:

1. Countermeasure Benefit
2. Need and Equity
3. Feasibility and Support

The specific measures for each category are shown in the table on the following page. Weighting factors are adjusted to provide higher prioritization on some criteria than others. The assigned weights determine an overall cumulative score that balances benefits to potential users and overall implementation feasibility and cost.

The prioritization scores and ranking table on the following page provides a list of the prioritized projects and a breakdown of each cumulative score by ranking criteria.



Prioritization Criteria and Scores

CATEGORY	CRITERIA	DESCRIPTION	SCORE	CATEGORY SCORE
Countermeasure Benefit	Implementation Term	Score for Short Medium and Long Term. Short = 5, Medium = 3, Long = 1	1 - 5	15
	Total Project Cost	Total cost of all improvements for the school area	1 - 5	
	Effectiveness	The level of effectiveness at addressing safety and accessibility concerns	1 - 5	
Need and Equity	Free or Reduced Priced Meals (FRPM)	Total number of students Eligible for FRPM	1 - 5	20
	Vehicle Ownership	Households with Low Vehicle Ownership, 1 or no vehicles per household	1 - 5	
	Number of Students	Students living in the study area	1 - 5	
	Disadvantaged Community (DAC)	Level of DAC	1 - 5	
Feasibility and Support	Resource Synergy	Potential resources allocated by the city for past and future efforts.	1 - 5	15
	Community Support	The project has shown diverse (e.g. broad) community support previously or during project.	1 - 5	
	Feasibility	The project requires a scalable quantity of feasibility as assessed by engineering judgment (i.e. ROW accessibility, easements, dedications, barriers, etc.)	1 - 5	
TOTAL SCORE				50

Prioritization Scores and Project Area Ranking

Rank	Project Area	Overall Score (50 Pts)	Countermeasure Benefit (15 Pts)	Need and Equity (20 Pts)	Feasibility and Support (15 Pts)
1	Cook / Jordan	43.5	9.9	19.7	14.0
2	Brookhurst Elementary	32.8	11.0	8.8	13.0
3	Merton E. Hill Elementary	31.5	12.1	8.5	11.0
4	John Murdy Elementary	30.3	11.7	9.6	9.0
5	Thomas Paine Elementary	25.0	8.8	5.2	11.0

11.3 FUNDING OPPORTUNITIES

This section presents a set of funding opportunities that the City can seek to implement the projects. Funding sources are classified into federal, state, regional, and local sources. The City can use the prioritization rankings a guide to determine the best funding opportunity to go after.



SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
Federal	Federal Highway Administration (FHWA)	Surface Transportation Block Grant Program (STBGP) for Transportation Alternatives (TA)	Infrastructure	<p>Under the Fixing America's Surface Transportation (FAST) Act, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was eliminated and the STBGP replaced the long-standing Surface Transportation Program (STP). STBGP has an apportionment set-aside for Transportation Alternatives (TA), which funds smaller projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, historic preservation, and other community improvements.</p> <p>The Act strives to improve mobility on America's highways, create jobs and support economic growth, and promote innovation; it provides \$226.3 billion of federal funding for surface transportation programs for FY 2016 to 2020. Specifically in California, STBGP funds are allocated through the state's Regional Surface Transportation Block Grant Program (RSTP) and the set-aside TA funds are allocated through the Active Transportation Program (ATP).</p>
Federal	Federal Highway Administration (FHWA)	Highway Safety Improvement Program (HSIP)	Infrastructure & Non-Infrastructure	<p>The Highway Safety Improvement Program (HSIP) is a federal-aid program that was created from the FAST Act. The purpose of the program is to reduce fatalities and serious injuries on all public roads. In California, the HSIP funds are managed by the Division of Local Assistance (DLA). The City can apply for HSIP funds toward any public road or publicly owned bicycle or pedestrian pathway or trail in order to improve the safety for its users.</p>
Federal	United States Department of Transportation (USDOT)	Better Utilizing Investments to Leverage Development (BUILD) (formerly TIGER)	Infrastructure	<p>The BUILD grant replaced the Transportation Investment Generating Economic Recovery (TIGER) Grant Program, which was launched in 2009. The Consolidated Appropriations Act of 2018 made available \$1.5 billion for the BUILD Transportation Discretionary grants through September 2020. Eligible recipients include: state, local and tribal governments, including U.S. territories, transit agencies, port authorities, metropolitan planning organizations (MPOs), and other political subdivisions of state or local governments. The grant focuses on projects with significant regional or local impact and requires a 20% local match. While biking and walking projects are eligible, the emphasis is on larger transportation projects.</p>
Federal	Housing and Urban Development (HUD)	Community Development Block Grant (CDBG)	Infrastructure & Non-Infrastructure	<p>CDBG is a flexible program that provides communities with resources to address a wide range of unique community development needs. The federally-funding program is administered by the Department of Housing and Urban Development (HUD). On the local level, these funds are administered by the Riverside County Economic Development Agency (EDA) and can fund a range a projects including neighborhood revitalization, transportation services, public safety programs, flood and drainage facilities, water/sewer improvements, street improvements/sidewalks, etc.</p>
State	California Department of Transportation (CALTRANS)	Community-Based Transportation Planning Grant (CBTP) Program	Non-Infrastructure	<p>The Community-Based Transportation Planning grant program aims to engage the community in transportation and land use projects. Projects support concepts such as livable and sustainable communities with a transportation or mobility focus. They should also promote community identity and quality of life, as well as, provide transportation and land use benefits to communities.</p>

SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
State	California Department of Transportation (CALTRANS)	Active Transportation Program (ATP)	Infrastructure & Non-Infrastructure	The Active Transportation Program (ATP) was signed into legislation by Governor Brown in 2013. It consolidated existing federal and state transportation programs such as the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and Safe Routes to School (SR2S) into a single program. The Road Repair and Accountability Act of 2017 added approximately \$100 million per year in available funds for the ATP. This ATP is supported with funding from the Surface Transportation Block Grant Program (STGB) administered by the FHWA. The program recently completed its fourth funding cycle.
State	California Office of Traffic Safety (OTS)	OTS Grants	Non-Infrastructure	The Office of Traffic Safety Grants seeks to reduce traffic deaths, injuries, and economic losses. The grants have ten areas of concentration; of these, projects identified in this Plan qualify for the following: <ul style="list-style-type: none"> Pedestrian and Bicycle Safety Police Traffic Services Public Relations, Advertising, and Marketing Program Roadway Safety and Traffic Records
State	California Department of Transportation (CALTRANS)	Systemic Safety Analysis Report Program (SSARP)	Non-Infrastructure	The Systemic Safety Analysis Report Program (SSARP) is a state-funded program that was established in 2016. The intent of the program is to help local agencies perform collision analysis, identify safety issues on their street network, and develop a list of countermeasures that can be used to prepare for future applications related to safety improvements. These safety improvements can help reduce collisions where vehicles interact with vulnerable road users (pedestrians, bicyclists, and motorcycles).
State	California Natural Resources Agency	Urban Greening Grant Program	Infrastructure	“The Urban Greening Program receives its funding from revenue generated from the state’s Cap and Trade program. The program is administered by the California Natural Resources Agency which has allocated \$80 million to the program. Projects that are qualify for grants from the program are required to show net GHG benefits along with other benefits; additionally, they must include one of three project activities: <ol style="list-style-type: none"> 1. Sequester and store carbon by planting trees 2. Reduce building energy use by strategically planting trees to shade buildings 3. Reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools. ”
State	California Department of Transportation (CALTRANS)	Environmental Enhancement and Mitigation (EEM) Program	Infrastructure	The Environmental Enhancement and Mitigation Program seeks to mitigate the environmental effects of transportation facilities. As provided by California Streets and Highways Code Section 164.56, the state legislature can allocate up to \$7 million from the Highway Users Tax Account toward this program. One category for which funding is provided is the acquisition or enhancement of resource lands to mitigate the loss of, or the detriment to, resource lands lying within or near the right of way acquire for transportation improvements, including roadside recreational facilities.

SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
State	California Department of Transportation (CALTRANS)	State Highway Operation and Protection Program (SHOPP)	Infrastructure	The State Highway Operation and Protection Program (SHOPP) offers funding for capital improvement projects that relates to the state highway system. Projects focus on reducing collisions, enhancing mobility, restoring damage to roadways, and preserving bridges and roadways. This can include pedestrian and bicycle facility projects.
State	California Department of Transportation (CALTRANS)	Sustainable Communities	Non-Infrastructure	Sustainable Communities grants are intended to encourage local and regional multimodal transportation and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy, where applicable. Successful projects will also contribute to the State's greenhouse gas reduction targets, employ the goals and best practices cited in the 2017 RTP Guidelines, and address the needs of disadvantaged communities.
State	California Department of Transportation (CALTRANS)	Strategic Partnerships	Non-Infrastructure	Strategic Partnerships grants are intended to identify and address statewide, interregional, or regional transportation deficiencies on the State highway system in partnership with Caltrans. Successful Strategic Partnerships will strengthen government-to-governments relationships and result in programmed improvements. Example project types include corridor studies, and corridor preservation studies, studies that identify interregional, inter-county, and/or statewide mobility and access needs, and projects that evaluate accessibility and connectivity of the multi-modal transportation network.
Regional / Local	Southern California Association of Governments (SCAG)	Sustainable Communities Program	Non-Infrastructure	The Sustainability Planning Grant Program provides technical support to members in SCAG's jurisdictions. Grants can be used toward planning and policy efforts that allow for the implementation of the regional RTP/SCS. Grants in the program falls into three categories: <ul style="list-style-type: none"> Integrated Land Use – Sustainable Land Use Planning, Transit Oriented Development (TOD) and Land Use & Transportation Integration Active Transportation – Bicycle, Pedestrian and Safe Routes to School Plans Green Region – Natural Resource Plans, Climate Action Plans (CAPs) and Green House Gas (GHG) Reduction programs.
Regional / Local	Orange County Transportation Agency (OCTA)	Regional Capacity Program (Project O)	Infrastructure	The Regional Capacity Program (RCP) is a competitive grant that focuses on improvement to the Master Plan of Arterial Highways (MPAH). It will provide more than \$1 billion over the course of 30 years for transportation improvements. It is a part of the Comprehensive Transportation Funding Program (CTFP).
Regional / Local	Orange County Transportation Agency (OCTA)	Bicycle Corridor Improvement Program (BCIP)	Infrastructure	The Bicycle Corridor Improvement Program (BCIP) provides funding for pedestrian and bicycle projects to local Orange County agencies. The goals of the program include: increase the number of biking and walking trips, provide regional linkages to key destinations, close bikeways corridor gaps, promote mobility options by increasing safety, implement projects with community support, and improve air quality across Orange County.

SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
Local	City of Garden Grove	Measure O	Infrastructure & Non-Infrastructure	Measure O is a local, one-cent (1%) sales tax that was approved on November 6, 2018. It provides funding for many public safety and quality-of-life services including transportation projects.
Local	City of Garden Grove	Development Impact Fees	Infrastructure	The Mitigation Fee Act provides the legal basis for cities to impose a development impact fee on new or proposed development projects. The fees are intended to pay for the costs for providing public services to the development project.
Local	City of Garden Grove	Transportation Development Act (TDA)	Infrastructure & Non-Infrastructure	<p>The Transportation Development Act allocates funding to transit and non-transit related projects that comply with regional transportation plans. Among many, projects include planning and program activities, as well as pedestrian and bicycle facilities.</p> <p>The TDA provides two sources of funding: Local Transportation Fund (LTF) and State Transit Assistance Fund (STA). Funding for the LTF derives from a 1/4 cent of the general sales tax collected statewide, whereas STA funding comes from the statewide gas tax.</p>

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NOTICE

K. ANDERSON

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SCHOOL'S OPEN
DRIVE CAREFULLY

12. Conclusion

12.1 Conclusion

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This Safe Routes to School (SRTS) plan is intended to guide the City of Garden Grove and the Garden Grove Unified School District, towards their collective goal of making it safer, healthier, and more convenient and fun for students to walk and bike to and from school. In areas where the appropriate infrastructure exists, encourage students to walk and bike to school through various programs. In areas where it is less than ideal, improve the existing conditions to help provide a safer neighborhood for students to walk and bike to school.

The SRTS recommendations identified in this SRTS Plan address the “6 Es” and were developed to improve safety and health, decrease pedestrian and bicycle-related collisions, encourage parents and students to walk and bike to school, and instill an active lifestyle. The recommendations identified in this SRTS Plan were developed based on analysis of existing conditions around the six study schools and in the surrounding community, direct observations, TIMS collision data, results of the parent surveys and student travel tallies, input from the parents, students, school staff, and other members of the community along with input from the City of Garden Grove and Garden Grove Unified School District staff.

If at any time, the City of Garden Grove and the Garden Grove Unified School District have any questions on how to best implement the recommendations in this Plan, they are encouraged to contact the staff at KOA Corporation.



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