

Prepared for

Litchfield Elementary School District No. 79



Corte Sierra Elementary School **SAFE ROUTES TO SCHOOL**

MAG ITS/TE On-Call Services On-Call Contract 735-D | Task Order SR1901

May 2019



Prepared by

JACOBS®

Jacobs Engineering Group Inc



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

TABLE OF CONTENTS

Introduction	1
Why is SRTS Important?	1
Project Description	2
Study Process.....	2
State and Federal Support.....	3
SRTS Stakeholder Team.....	3
Kickoff Meeting	4
Existing Conditions Assessment	5
Overview of Corte Sierra Elementary School	5
Community Demographics	6
Overview of Roadway Conditions in the Community.....	8
Traffic Conditions.....	10
Arrivals and Dismissal.....	13
Crash Data Analysis.....	15
Walk/Bike Assessment	18
Things That Are Being Done Well	18
Summary of Issues and Needs.....	18
Community Outreach.....	22
Student Travel Tally.....	22
Parent Survey	23
SRTS Newsletter	24
Parent / Community Letters.....	24
Walking and Biking suggested RouteS Map.....	25
Recommendations.....	27
Engineering Improvement Recommendations.....	27
Education and Encouragement Recommendations.....	29
Enforcement Recommendations	31
Evaluation Recommendations.....	32
Safe Routes to School Action Plan	33
Strategy Impact	33
Implementation Timeframe.....	33
Evaluation.....	33
Funding Sources and Opportunities.....	39

Appendix A: Kick-off Meeting Materials

Appendix B: Turning Movement Counts

Appendix C: Pick-Up / Drop-Off Observations

Appendix D: Walking and Biking Observations

Appendix E: Student Tally Results

Appendix F: Parent Survey Results

Appendix G: Newsletter

Appendix H: Parent / Community Letters

Appendix I: Demographics Summary



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

INTRODUCTION

In 2018, Corte Sierra Elementary School and the City of Avondale were awarded a grant through the Maricopa Association of Governments (MAG) to conduct a Safe Routes to School (SRTS) study. The purpose of this study is to develop a plan to improve and support walking and biking opportunities to and from Corte Sierra Elementary School. This SRTS Study uses a variety of strategies to make it easy, fun and safe for children to walk and bike to school. The plan includes general recommendations for sustaining a SRTS program that will strive to:

- Increase the number of students walking and biking to school
- Identify effective solutions to enhance safety for students to walk and bike
- Create an Action Plan for improvements
- Combat childhood obesity and public health issues
- Engage and educate the community

Why is SRTS Important?

SRTS is a national program that creates safe, convenient and fun opportunities for children to walk and bicycle to and from their schools. With SRTS, everyone benefits! SRTS is not only about getting kids to and from school safely. SRTS programs can bring a wide range of benefits to students and the community.

SRTS Benefits Children

- Arrive alert and able to focus on school
- Less likely to suffer from depression and anxiety
- Get most of the recommended 60 minutes of daily activity

SRTS Benefits Neighborhoods

- Decreases in vehicular use and traffic congestion
- Increases physical activity for the whole family
- Increases the sense of community

SRTS Benefits Schools

- Students show-up "ready to learn"
- Opportunities to integrate walking, bicycling, and transportation topics into curriculum
- Increased efficiency and safety during pick-up and drop-off times

Key Strategies – Six E's

This SRTS Study uses a variety of strategies to make it easy, fun and safe for children to walk and bike to school. These strategies, often called the "Six E's" includes:



Education

Programs to teach children and parents about the benefits of walking and biking, traffic safety skills, and bicycle and pedestrian skills.



Encouragement

Events, clubs, and activities that encourage more walking, bicycling, or carpooling through fun activities and incentives.



Engineering

Identifying infrastructure barriers (i.e., missing sidewalks, unsafe crossings, etc.) and creating projects to improve walking and biking conditions.



Enforcement

Law enforcement strategies aimed at improving driver behavior near schools to ensure safe roads for all users.



Evaluation

Assessing the needs of the school, developing short- and long-term solutions, and developing methods to monitor SRTS effectiveness.



Equity

Ensure that safe, active, and healthy opportunities are addressed to benefit all people regardless of ability, race, age, gender, ethnicity, and socioeconomic status.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

PROJECT DESCRIPTION

Located within the Litchfield Elementary School District Number 79, Corte Sierra Elementary School is a Pre-Kindergarten through Fifth-Grade Elementary School that serves children located within the City of Avondale, Arizona. As illustrated on the right, Corte Sierra Elementary School is located northeast of Osborn Road and Santa Fe Trail. Santa Fe Trail is a north-south roadway that experiences moderate traffic volumes, congestion, and safety issues creating potential walking and biking hazards to the school. As the major gateway to the school, improvements are needed to make the corridor a more walking and biking friendly corridor. Figure 1 shows the location and walking/biking boundaries for Corte Sierra Elementary School.

Study Process

Beginning in October 2018, the planning process for the SRTS Study began. The study was a collective effort that involved members of a consulting team; MAG; staff from the City, school district, and elementary school; and members of the community. As part of the study process we completed the following tasks:

- 1) Established SRTS Stakeholder Team
- 2) Conducted a Kickoff Meeting to introduce the Study to the SRTS Team
- 3) Collected traffic counts at key intersections near Corte Sierra Elementary School
- 4) Conducted a parent and student survey regarding the existing drop-off and pick-up conditions
- 5) Created an existing conditions inventory of current operational procedures, roadway conditions, historical crash trends, and community demographics
- 6) Completed a field review to observe the pick-up and drop-off procedures
- 7) Performed a walk and bike assessment with members of the community
- 8) Developed and distributed a newsletter to the community to solicit feedback on the current challenges and concerns related to walking and biking to school
- 9) Developed a Safe Routes to School report and maps

Figure 1: Corte Sierra Elementary School Location





Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

State and Federal Support

The Fixing America's Surface Transportation (FAST) Act authorized a set-aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA), which are used to support the SRTS Program. The MAG region receives an annual allocation of TA funding from the Arizona Department of Transportation (ADOT). MAG member agencies are eligible to submit SRTS applications for utilizing this funding to help schools and communities promote the health and safety of K-8 students, with the call for new projects occurring each August. Funding can be used to develop SRTS studies, infrastructure improvements that promote and encourage walking and biking to school, and educational materials. In 2019 alone, MAG is administering 7 SRTS projects, equating to more than \$300,000. Through fiscal year 2022, MAG will administer 31 SRTS projects equalling nearly \$1.4 million.

SRTS Stakeholder Team

At the onset of the project, a SRTS Stakeholder Team was established to help guide the development of the SRTS study, provide vital feedback and input on the needs of the community, and serve as champion for SRTS. The SRTS Stakeholder Team included staff from the City of Avondale, Corte Sierra Elementary School, and the Litchfield Elementary School District; as well as parents / community members. These parents, community members, faculty, and staff were an indispensable part of the project, and will continue to be as the district moves forward with expanding SRTS in the coming years. The SRTS Stakeholder Team included the following:

Corte Sierra Elementary School Faculty, Staff, Parents, and Volunteers

Tanya Rotteger, Principal
Gina Yingling, School Crossing Guard
Becky Garcia, School Crossing Guard
Kristen Johnson, School P&SA, Parent
Lisa Handyside, School Secretary
Mindy Schlag, Instructional Coach

Litchfield School District No. 79

Tommy Sims, District Transportation Director
Wendy Qualls, District Director of Finance
Jodi Gunning, Litchfield School District Superintendent
Dan Ensign, Director of Facilities

City of Avondale

Tom Peterson, Traffic Engineer
Ward Stanford, Assistant Traffic Engineer
Jared Palacio, City of Avondale P.D. Sergeant

Project Team

Margaret Herrera, PE, Maricopa County Association of Governments, Transportation Safety Program Manager
Mohammad Shaheed, MAG Transportation Engineer II
Shanthi Krishnan, PE, PTOE, Jacobs Engineering, Project Manager
Anil Mudigonda, PE, PTOE, Jacobs Engineering, Task Manager
Joseph Davis, EIT, Jacobs Engineering
Isaiah Rubin, EIT, Jacobs Engineering
Kyle Benne, Jacobs Engineering
Alexandra Quintero, Jacobs Engineering
David Kinnear, PE, United Civil Group



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Kickoff Meeting

A kick-off meeting was held on Monday October 1st, 2018 at 9:00 am at Corte Sierra Elementary School. The purpose of the meeting was to introduce the SRTS Study to the Stakeholder Team, present an overview of the process, and to obtain feedback on issues and needs. At the meeting, the following stakeholders were present:

School Staff, District Staff and Parents	Tanya Rotteger, Corte Sierra Elementary School
	Gina Yingling, Corte Sierra Elementary School
	Becky Garcia, Corte Sierra Elementary School
	Kristen Johnson, Parent, Corte Sierra Elementary School
	Lisa Handyside, Corte Sierra Elementary School
	Mindy Schlag, Corte Sierra Elementary School
	Tommy Sims, Litchfield Elementary School District
	Wendy Qualls, Litchfield Elementary School District
City of Avondale Staff	Tom Peterson, Traffic Engineer
MAG	Margaret Herrera, Transportation Safety Program Manager
	Mohammad Shaheed, Transportation Engineer II
Consultant Team	Shanthi Krishnan, Jacobs Engineering
	Anil Mudigonda, Jacobs Engineering
	Joseph Davis, Jacobs Engineering

A copy of the meeting minutes is included in Appendix A. Key items from the meeting include:

- Parents expressed a concern about the canal that is located south of Corte Sierra. Students have been observed swimming in the canal in hot weather.
- Per feedback from the school staff, parents have been observed to speed and not obey the traffic laws in the school zone.
- The Avondale Police Department has expressed to the school that the Corte Sierra has one of the largest school zones in the area, partially due to other schools in the area.



EXISTING CONDITIONS ASSESSMENT

This section presents an overview of existing conditions, issues, and needs identified through data collection and analysis, field assessments, and feedback from the parents.

Overview of Corte Sierra Elementary School

Corte Sierra Elementary School is a Pre-Kindergarten through Fifth-Grade Elementary School located at 3300 N. Santa Fe Trail in the City of Avondale, Arizona.

School Enrollment

According to the school, there are 828 students that attend Corte Sierra Elementary School. Utilizing MAG's Read on Arizona MapLIT Viewer, enrollment trends and student demographics can be analyzed. As illustrated in Figure 2, students at Corte Sierra are primarily Hispanic or White.

School Hours

First Morning Bell: 8:10 am

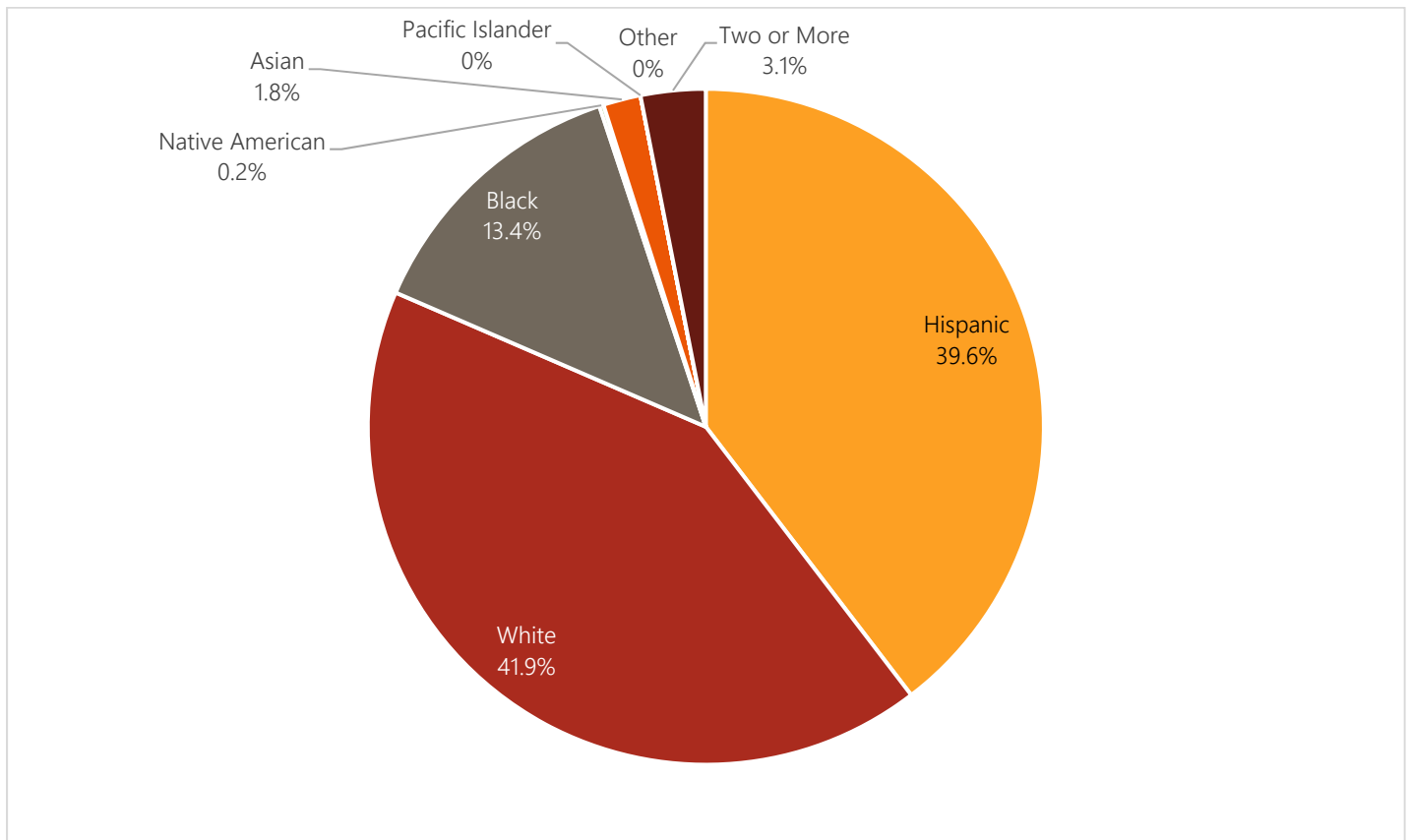
Second Morning Bell: 8:15 am

School Release: 2:45 pm

Office Hours

Monday – Friday: 7:45 am – 3:45 pm

Figure 2: Corte Sierra Elementary School Student Demographics





Community Demographics

To better understand the characteristics of the area surround Corte Sierra Elementary School, a review of 2012 – 2016 American Community Survey (ACS) estimates was conducted. The data, obtained from MAG's online Demographic Map Viewer, included two Census Block Groups within the City of Avondale. Other key demographic characteristics include:

- The total population of the two block groups around Corte Sierra Elementary School is 6,121, of which 58 percent are minority
- As illustrated in Figure 3, higher densities of population are located north of the Roosevelt Canal and south of Indian School Road
- 11.5 percent of persons are below the poverty level. The northern half of the study area, north of the canal, has a slightly higher percentage of persons below the poverty level
- Median age within the City is 31.1 years' of age
- 26.6 percent of the population is under 19 years' of age
- 41.9 percent of residents are White, Non-Hispanic, 39.6 percent of residents are Hispanic and 13.4 percent are Black, Non-Hispanic
- 7 percent of the person's age 5 years and older have Limited English Proficiency (LEP)
- Of the population 25 and over, 3.4 percent have completed less than 9th grade and 5.3 percent have no high school diploma
- There are 2,160 households, of which 18 percent are female lead households with children present
- Median household income is \$54,969
- Average household size is 6
- 75.9 percent of workers age 16 and older drive alone to work, while 12.3 percent carpooled, and 7.5 percent worked at home
- 4.7 percent of households have no vehicle available and 31.5 percent have one vehicle available

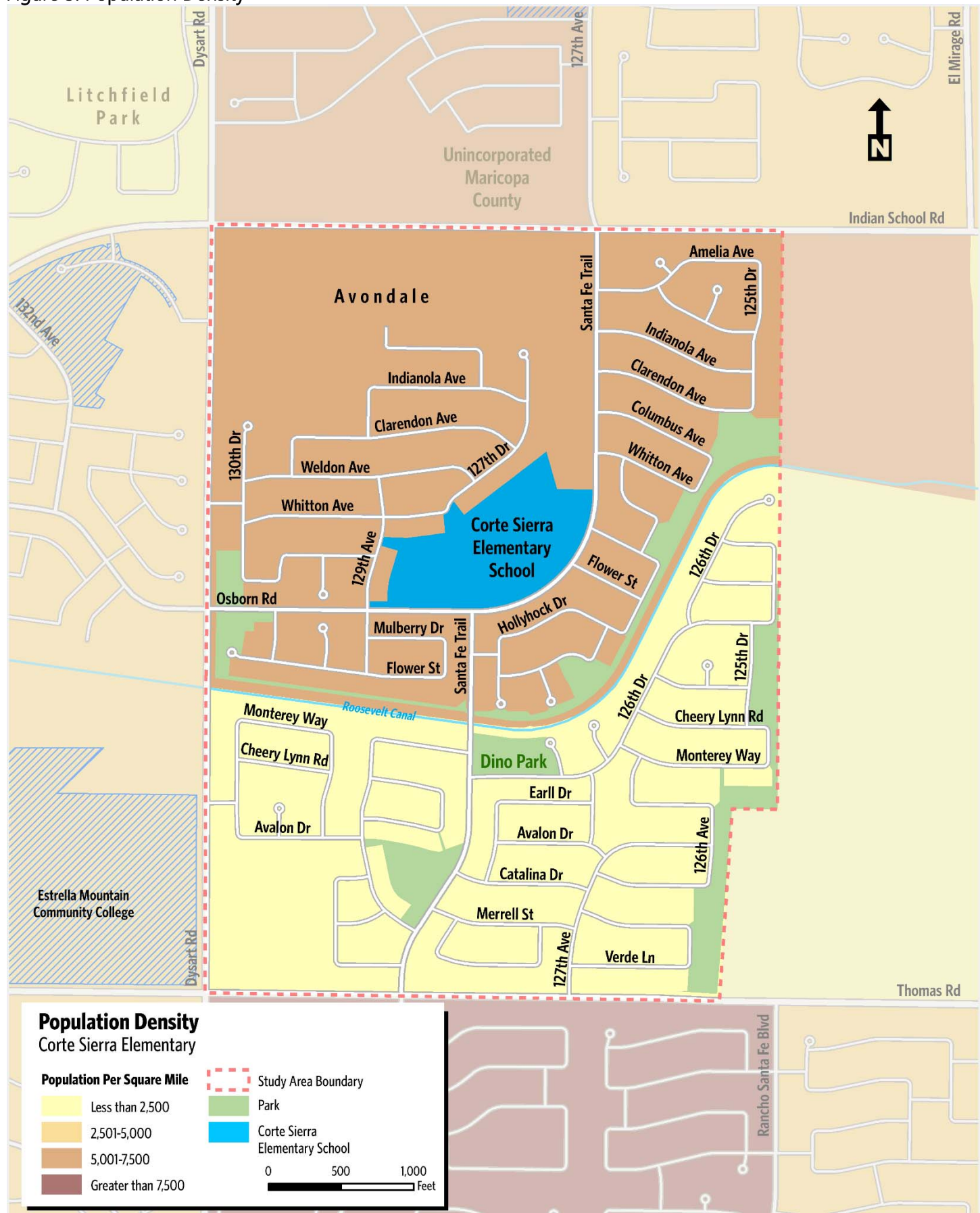
Figure 3 illustrates the population density within the school boundaries. Appendix I provides the demographic summary of the study area.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 3: Population Density





Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Overview of Roadway Conditions in the Community

Existing Roadway Conditions

Corte Sierra Elementary School is accessed via a network of local roadways. Key access routes include:

- **Osborn Road** – east-west arterial roadway that serves as a key access point for Corte Sierra Elementary School and connects the school to the main north-south arterial, Dysart Road. The corridor is a two-lane roadway with a center two-way left-turn lane and posted speed limits of 25 MPH. Marked crosswalks exist at Dysart Road and Santa Fe Trail. Portable 15 mph, “Do Not Pass”, and “STOP when Children in Crosswalk” school zone signs are utilized during school hours between Santa Fe Trail and 129th Avenue on Osborn Road.
 - The entire corridor between Dysart Road and Santa Fe Trail has sidewalks; all of which are in good condition.
 - Bike lanes exist in both directions.
- **Santa Fe Trail** – located directly south and east of Corte Sierra Elementary School, Santa Fe Trail is a local north-south roadway. The corridor is a two-lane roadway with a center two-way left-turn lane and posted speed limits of 25 MPH. Marked crosswalks exist at Osborn Road, Whitton Avenue and Indian School Road. Portable 15 mph, “Do Not Pass”, and “STOP when Children in Crosswalk” school zone signs are utilized during school hours just north of Whitton Avenue.
 - The corridor has sidewalks; all of which are in good condition.
 - Bike lanes in both directions.
 - Two parking lots are located adjacent to Santa Fe Trail. The southernmost parking lot is utilized by parents for drop-off and pick-up as well as faculty members for parking. The easternmost parking lot is utilized as the school bus loading and unloading zone as well as an additional parking for faculty.
 - South of Corte Sierra Elementary School, Santa Fe Trail crosses over a canal, and parents have voiced their concern about this area. Curb ramps along the roadway are relatively flat and appear to be ADA compliant. However, they are missing the truncated domes.



School zone on Santa Fe Trail



Pick-up conditions along Santa Fe Trail



School Zone Crosswalk on Santa Fe Trail

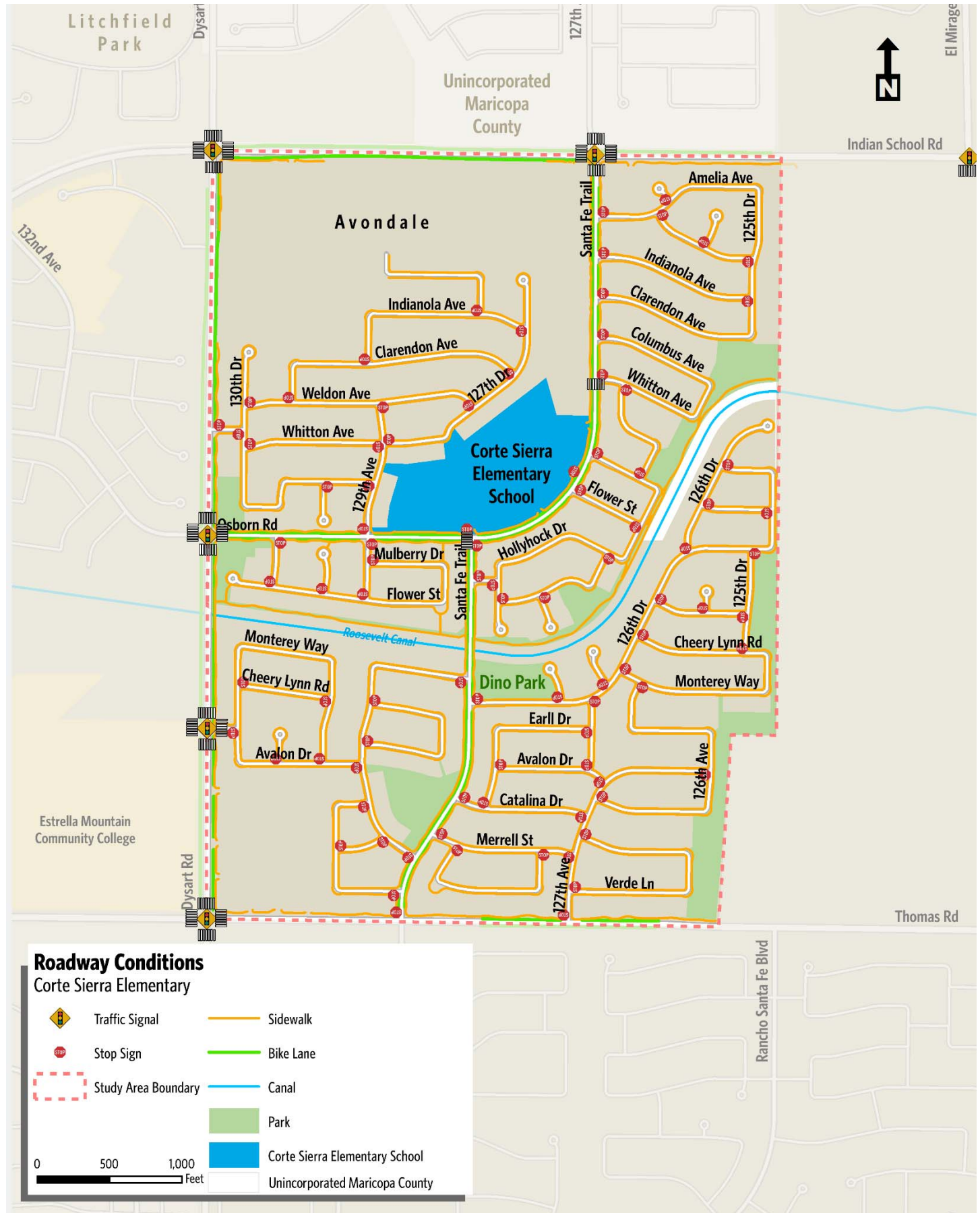
Figure 4 illustrates existing roadway conditions in the City.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 4: Roadway Conditions





Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Traffic Conditions

Pedestrian, bicycle, and vehicular turning movement counts were collected at six separate intersections from 7:00 AM – 9:00 AM and 3:00 PM – 5:00 PM on Thursday, October 25, 2018. Intersections included:

- Santa Fe Trail & Osborn Road
- Whitton Avenue & 127th Drive
- Santa Fe Trail & Main School Entrance
- Santa Fe Trail & Bus Exit
- Santa Fe Trail & Bus Entrance
- Santa Fe Trail & Whitton Avenue

The existing lane configurations and AM and PM peak hour turning movements are shown in Figure 5. Pedestrian and bicycle volumes corresponding to the vehicular peak hours are shown in Figure 6. The detailed traffic and pedestrian traffic volume data can be found in Appendix B.

Traffic Analysis

Existing turning movement counts for the arrival (drop-off) and dismissal (pick-up) times were analyzed to identify the busiest intersections as well as the directional distribution of traffic volumes along Santa Fe Trail. During the turning movement analysis, it was also essential to determine areas where pedestrian traffic was most abundant to determine the highest potential conflict areas for students traveling to and from school.

Arrival Peak Hour (7:15AM – 8:15 AM)

- The intersection of Santa Fe Trail & Osborn Avenue had the highest vehicle volumes. This intersection is where the two main roadways meet and provide direct access to the school; therefore, higher volumes are to be expected.
- Although Santa Fe Trail & Osborn Avenue as well as Santa Fe Trail & Whitton Avenue both have school crosswalks, Santa Fe Trail & Osborn Avenue experiences a significantly higher amount of pedestrians during both pick-up and drop-off hours.
- Very few pedestrians and bicyclists are crossing Santa Fe Trail in non-designated crossing areas, reducing pedestrian and vehicle conflicts.



Vehicles parking in the bike lane along Santa Fe Trail

Dismissal Peak Hour (3:00 PM – 4:00 PM)

- The intersection of Santa Fe Trail & Osborn Avenue had the highest vehicle and pedestrian / bicyclist volumes.
- There are very few mid-block crossings occurring across Santa Fe Trail.



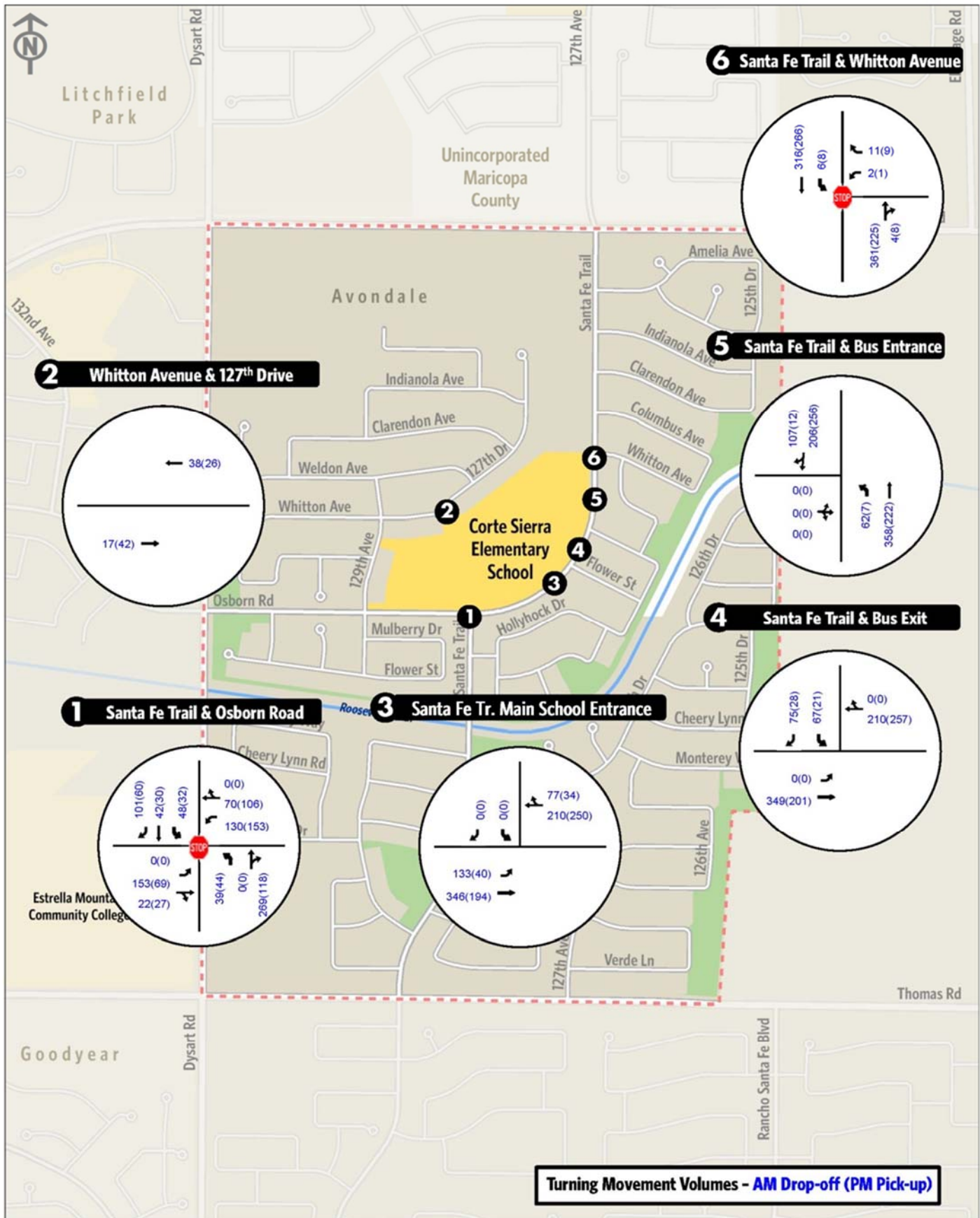
Corte Sierra bike parking area after drop-off observations



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 5: Turning Movement Counts (Arrival (drop-off) & Dismissal (pick-up))

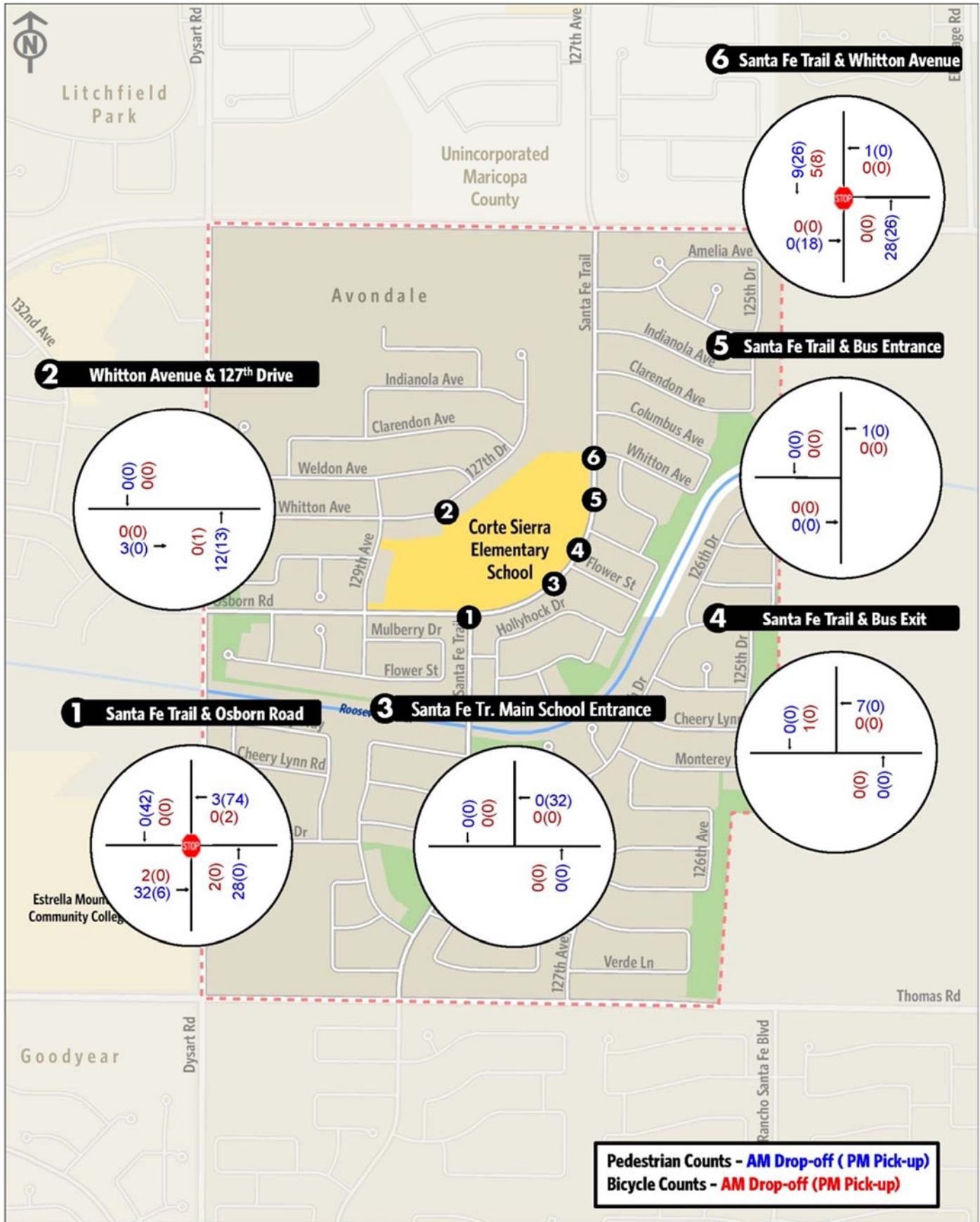




Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 6: Pedestrian and Bicycle Volumes (Arrival (drop-off) & Dismissal (pick-up))





Arrivals and Dismissal

Corte Sierra Elementary School does not have formal arrival (drop-off) and dismissal (pick-up) procedures on their website. Based on field observations procedures include:

- There are two crossing guards available at the intersections of Osborn Road / Santa Fe Trail and Santa Fe Trail / Whitton Avenue. The morning crossing areas are active from 7:45 am – 8:15 am. The afternoon crossing area is active from 3:00 pm – 3:20 pm. It is noted that students who arrive prior to 7:45 am will wait for the crossing guard to show up.
- Parents can pick-up and drop-off their students via the school entrance located on the south end of Corte Sierra Elementary School.
- School buses load and unload students east of the school in the parking lot adjacent to Santa Fe Trail.
- There are bike racks available by the bus loading area. The bike rack is in a secure and locked location and can accommodate approximately 20 bikes.
- Parents park along Santa Fe Trail during pick-up, resulting in the bike lanes being blocked.

Figure 7 illustrates the pick-up and drop-off procedures.

Arrivals and Dismissal Observations

The consultant team, observed the pick-up and drop-off patterns of students on December 6th, 2018. During this time, the team observed: directions students are coming from, how many students are walking or biking, how many students take the bus or are dropped-off or picked-up by parents. The observation team also looked for potential hazards that students may encounter such as: driver behavior, crosswalk compliance, and safety issues. Notes taken by the SRTS team during the arrival and dismissal observations can be found in Appendix C Key findings include:

- The majority of parents drive their child to and from school, resulting in congestion at the drop-off / pick-up location.
- Parents park along Santa Fe Trail during pick-up, resulting in the bike lanes being blocked.
- Parents park along the far side of Santa Fe Trail during pick-up, resulting in a few mid-block crossings that traffic must stop for.
- Traffic along Santa Fe Trail is often traveling at excessive speeds and at times disregarding school zone crosswalks.
- During pick-up, approximately 20 students and a few teachers gather at the parking lot to wait for parents who arrive late for pick-up.
- Parents park on the local streets such as Flower Street and Mulberry Drive, then cross Santa Fe Trail to pick up their student.



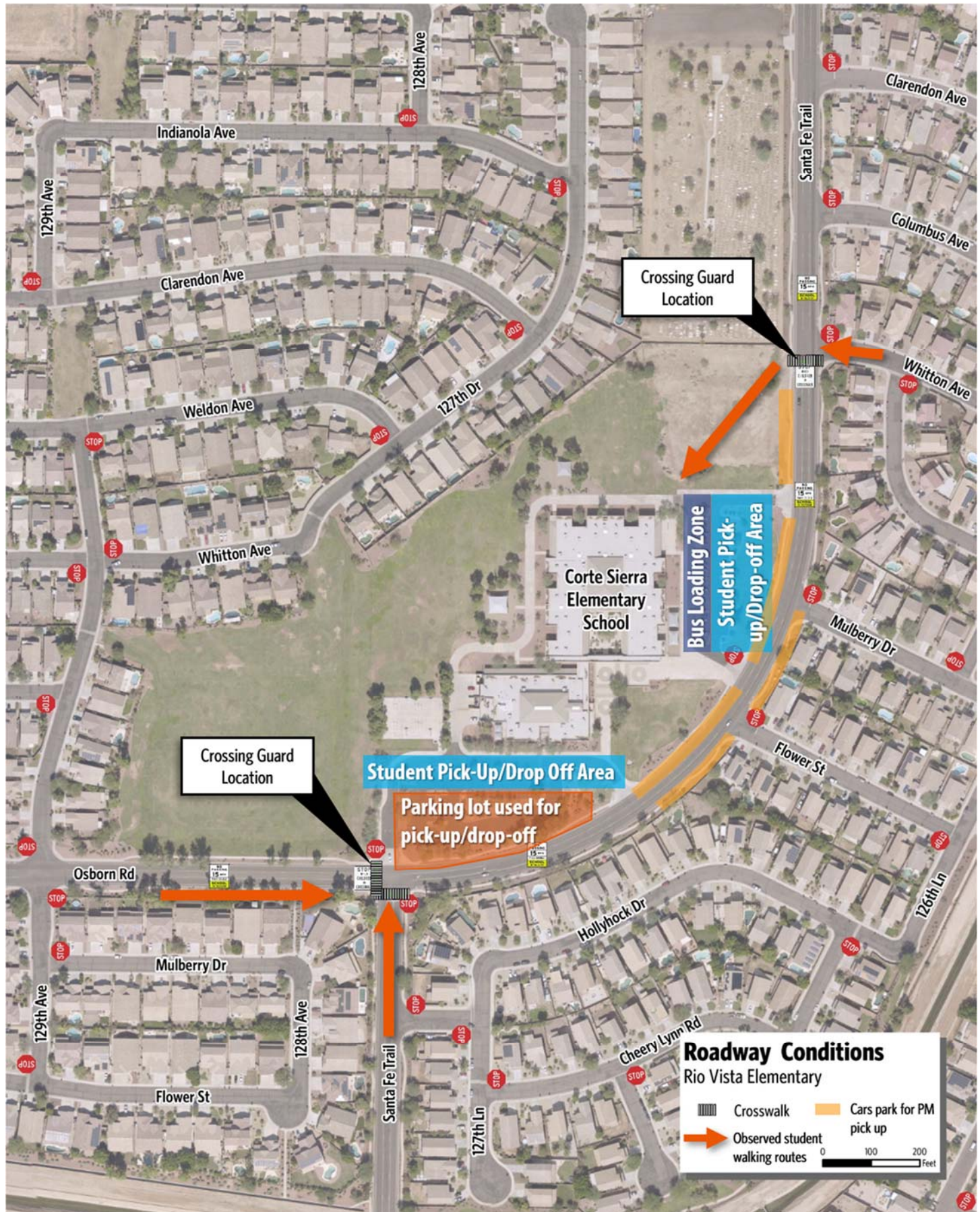
Corte Sierra crossing location during drop-off observations



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 7: Arrival (drop-off) and Dismissal (pick-up) Procedures





Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Crash Data Analysis

Five years of crash data was obtained from MAG for the period of 2013 to 2017. Based on the data, a crash analysis was conducted to determine areas with high rates of pedestrian- or bicycle-related involvement. For the purposes of this study, only crash data on school days (Monday – Friday) was analyzed. Table 1 provides a summary of crashes that occurred during the five-year period.

Table 1. Summary of Total Collisions by Severity (Monday to Friday, 2013-2017)

Injury Type	No. of Collisions by Injury Severity					Grand Total
	2013	2014	2015	2016	2017	
Fatal	0	0	0	0	0	0
Incapacitating Injury	3	3	3	4	6	19
No Injury	40	26	27	33	54	180
Non-Incapacitating Injury	8	5	4	8	3	28
Possible Injury	8	1	1	6	8	24
Grand Total	59	35	35	51	71	251

Key findings from the crash analysis, includes:

- There were no fatal collisions within the vicinity of Corte Sierra Elementary School.
- The majority of collisions occur on Wednesday.
- The total amount of collisions decrease during the months of May, June, and July; mirroring the school year.
- Of the 251 collisions, only eight collisions involved a pedestrian / bicyclist.
- The peak-hours for collisions occur from 3:00pm – 4:00pm.

Figures 8, 9 and 10 illustrate the Total Collisions by Time of Day, Total Collisions by Day of the Week, and Total Collisions by Month respectively. Illustrated on the collision heat map in Figure 11, Santa Fe Trail experiences a higher collision density directly to the south of Corte Sierra Elementary School. However, none of these collisions involved a pedestrian / bicyclist.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Total Collisions (2013 - 2017)

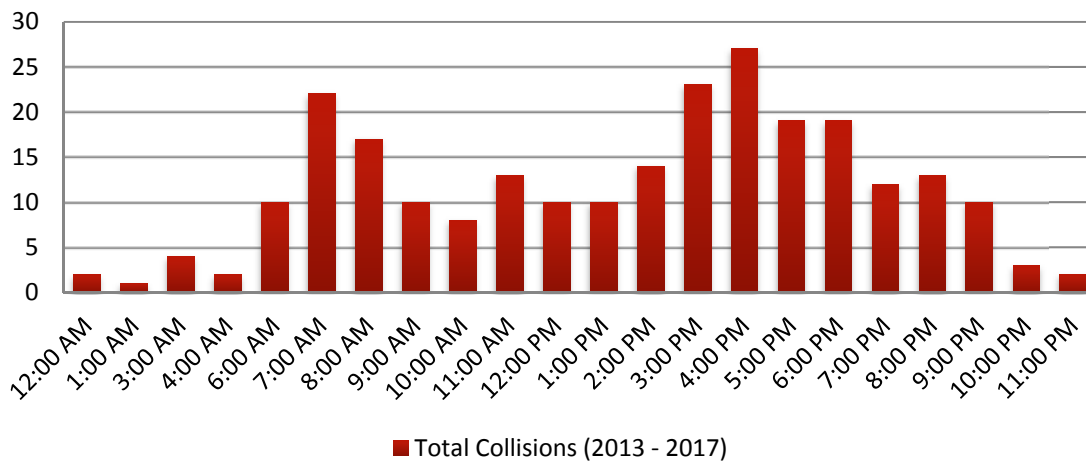


Figure 8: Total Collisions by Time of Day

Total Collisions by Day of the Week

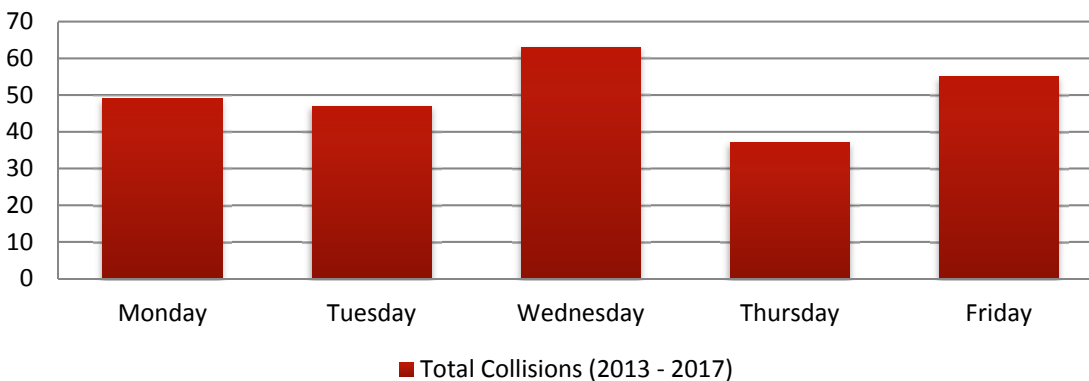


Figure 9: Total Collisions by Day of the Week

Total Collisions by Month

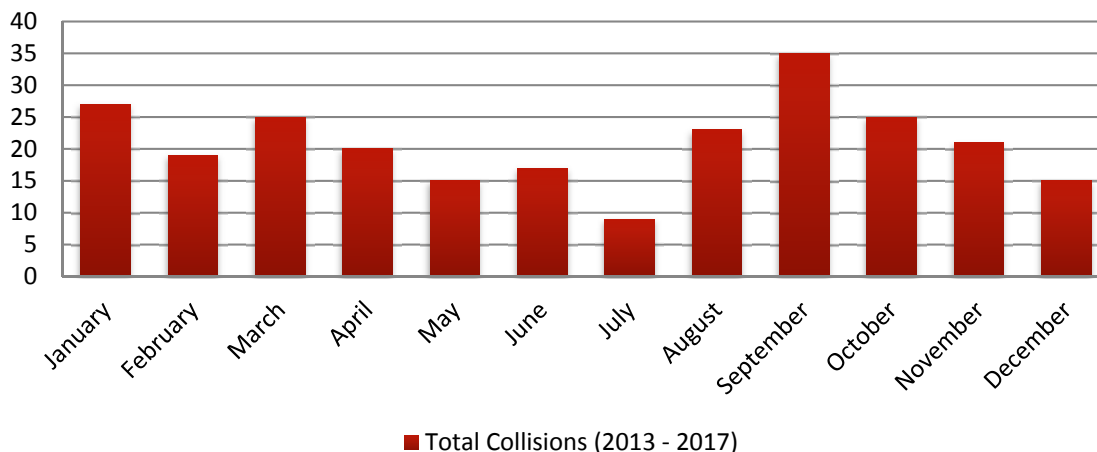


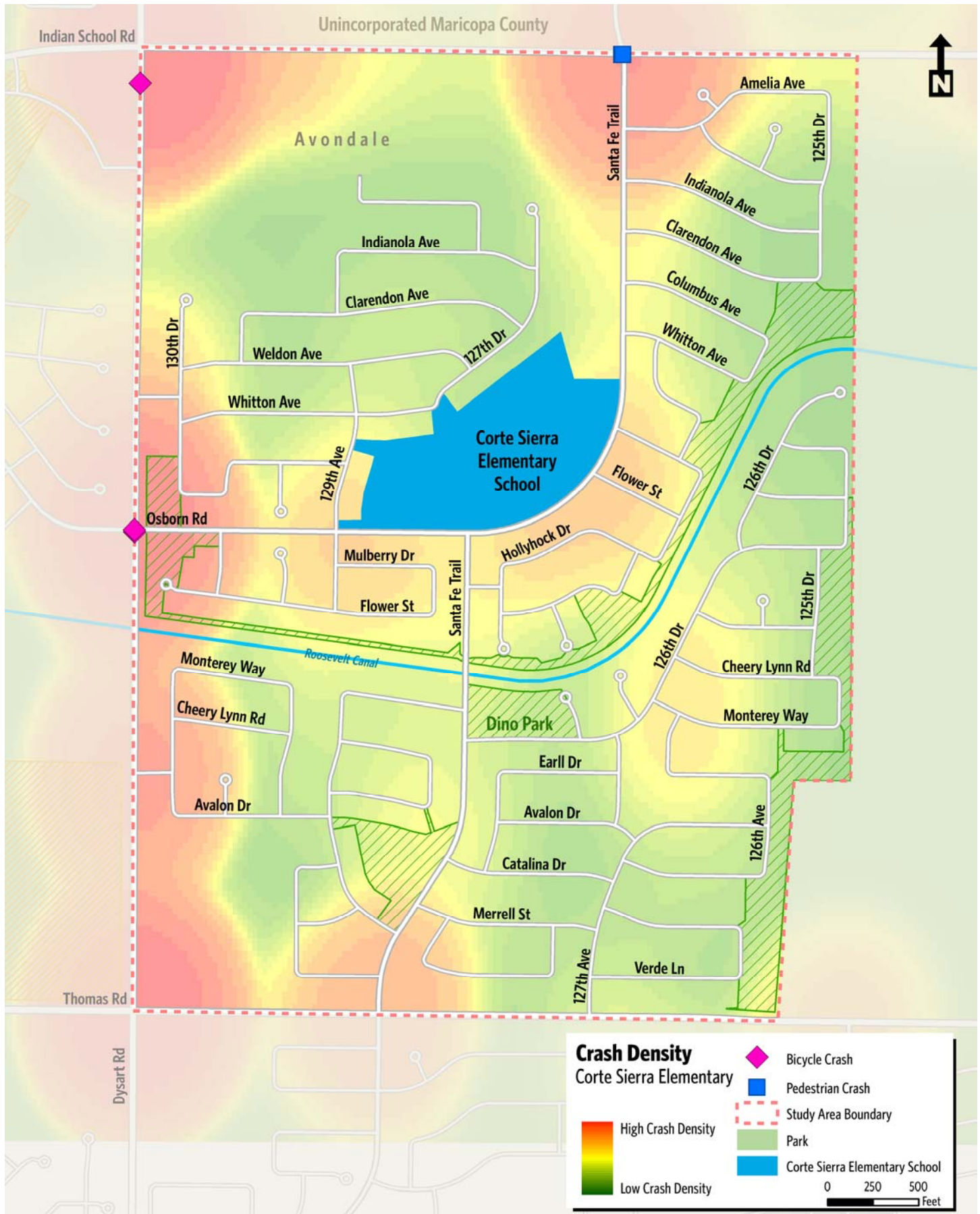
Figure 10: Total Collisions by Month



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 11: Collision Density Heat Map





WALK/BIKE ASSESSMENT

Members of the SRTS Stakeholder Team conducted a walkability and bikeability assessment to gain a first-hand understanding of the walking and biking constraints, opportunities, and needs within the surrounding area of Corte Sierra Elementary School. The assessment involved the systematic gathering of data about environmental conditions (social, built and natural) that affect walking and biking access and comfort. The walkability assessment was conducted on December 6th, 2018 from approximately 9:00 am to 10:30 am and the bikeability assessment was conducted on March 7th, 2019 from 8:30 am to 10:00 am. The team consisted of:

- Ward Stanford, City of Avondale
- Tom Peterson, City of Avondale
- Joseph Davis, Jacobs Engineering
- Isaiah Rubin, Jacobs Engineering
- Kyle Benne, Jacobs Engineering
- Alex Quintero, Jacobs Engineering
- Tanya Rotteger, Corte Sierra Elementary School
- Becky Garcia, Corte Sierra Elementary School
- The field review assessment consisted of a brief introduction and overview of the process. Team members were assigned to specific locations and instructed to record observations. The goal of the assessment was to observe potential hazards, crosswalks, pedestrian ramps, and to determine how the surrounding area operates on a regular day. The notes from the walk/bike assessment can be found in Appendix D.

Things That Are Being Done Well

- Sidewalks in the surrounding area appear to be ADA compliant and are in good condition.
- The parking lot located at the entrance of Corte Sierra Elementary School is used by parents to park and then pick up their child at the front.
- Crossing guards located at Osborn Road & Santa Fe Trail as well as Santa Fe Trail & Whitton Avenue are friendly, professional, and execute their jobs properly.
- Students follow the rules while crossing Santa Fe Trail.

Summary of Issues and Needs

This section discusses the issues and concerns in the surrounding areas around Corte Sierra Elementary School that were observed during the pick-up / drop-off durations as well as the walking / biking assessment. Figures 12 and 13 illustrate the observed issues and concerns around the Corte Sierra Elementary School.

Key observations and issues include:

- **Sidewalk Obstructions** – Along local roads in the surrounding area around Corte Sierra Elementary School, there are few sidewalk obstructions such as: gravel, overgrown trees, overgrown cacti, and trash. Although the amount of sidewalk obstructions are minimal, these types of obstructions can make it unsafe for students walking and biking to and from school.
- **Sidewalk conditions** – Overall, sidewalks in the surrounding area of Corte Sierra Elementary School are in good



Corte Sierra sidewalk obstruction



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

condition. There are certain locations where sidewalks have cracks, gaps between sidewalk panels, non-flush transitions between sidewalk panels, and sidewalk foundation issues. These types of sidewalk issues can pose hazards for students who bike, ride a skateboard or a scooter.

- **On-Street Parking** – Along Santa Fe Trail, in front of Corte Sierra Elementary School, parents park along the street resulting in bike lanes being blocked as well as traffic along Santa Fe Trail being impeded. It is noted that “no parking” signs are currently placed along Santa Fe Trail to deter parents from blocking the bike lane. However, this is not being enforced.
- **School Zone Crosswalk Striping** – It was noted by the crossing guards at Corte Sierra Elementary School as well as concerned parents, that vehicles traveling along Santa Fe Trail will, at times, disregard the school zone crosswalks even when there is a crossing guard holding a stop sign in the middle of the road. It should be noted that this directly correlates to some parents deciding to not allow their student to walk / bike to school. Currently the school zone crosswalks are low visibility.
- **School Zone Speeding** – Along Santa Fe Trail, within the 15 mph school zone in front of Corte Sierra Elementary School, drivers often exceed the speed limit. Prior to the walking / biking assessment, the school provided the consultant team with hand written letters portraying the concerns the parents and students face when walking and biking to school, due to the excessive speeds. During the walking and biking assessment, a driver traveling southbound on Santa Fe Trail hit one of the school zone speed limit signs due to excessive speed.
- **Non-ADA Compliant Ramps** – In the surrounding area of Corte Sierra Elementary School, the majority of pedestrian curb ramps are in good condition. However, these ramps appear to be non-compliant with the Americans with Disability Act (ADA). It was observed that the ramps were missing the truncated domes.
- **Canal Access** – Located at the canal bridge, south of Osborn Road and Santa Fe Trail, ramps are severely damaged, and the canal’s lining is eroding causing potential conflicts for students who are utilizing the canal bridge. The canal ramps will need to be repaired and the canal access roads have to be closed to minimize the potential dangers for the students.



Corte Sierra sidewalk foundation issues



Corte Sierra non-ADA compliant ramps



Corte Sierra on-street parking



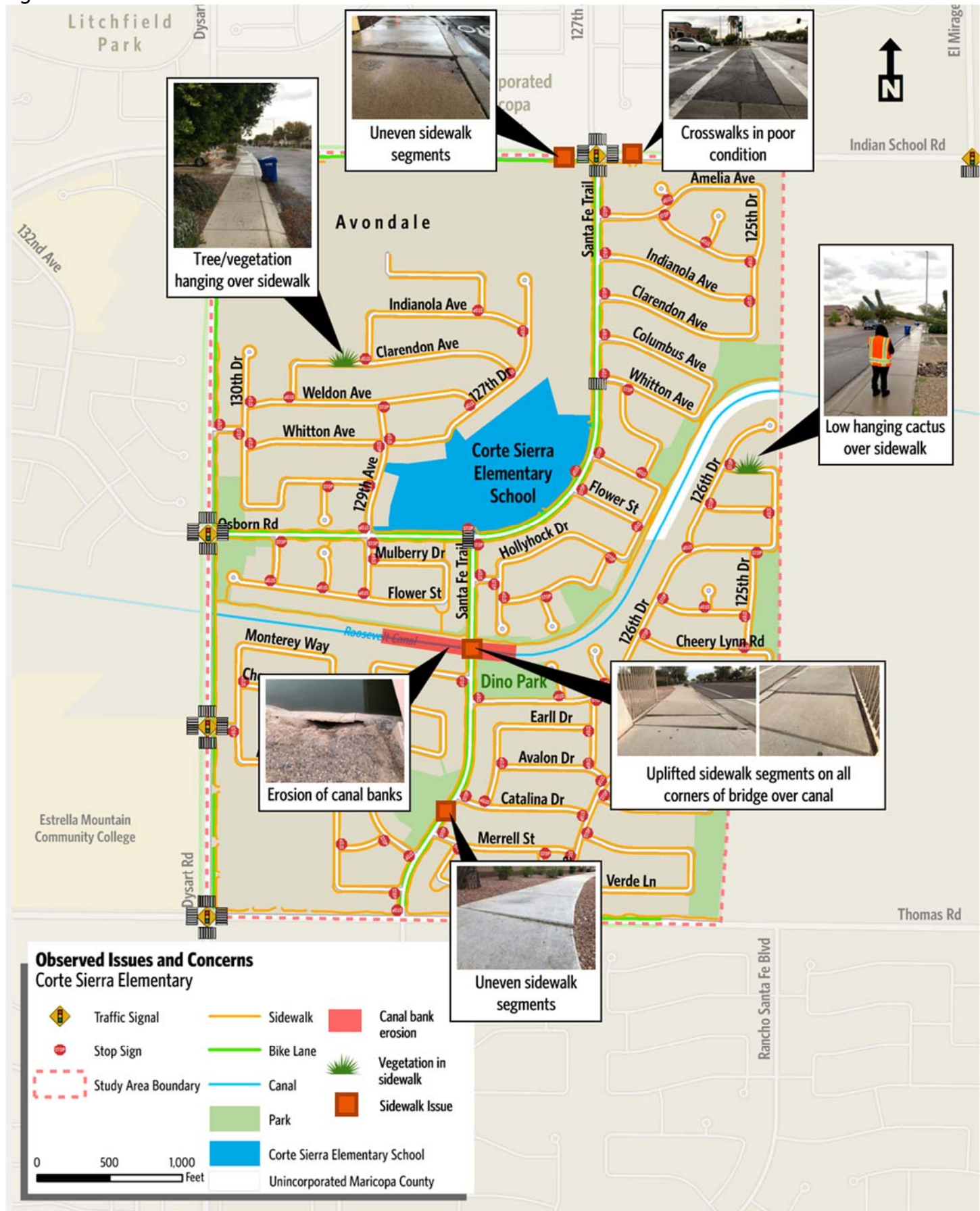
Canal lining eroding near the bridge south of Osborn Road and Santa Fe Trail



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 12: Observed Issues and Concerns





Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 13: Observed Issues and Concerns at Corte Sierra Elementary School





COMMUNITY OUTREACH

To obtain a first-hand understanding of the needs of the students, parents, school, and community parents and community outreach was conducted.

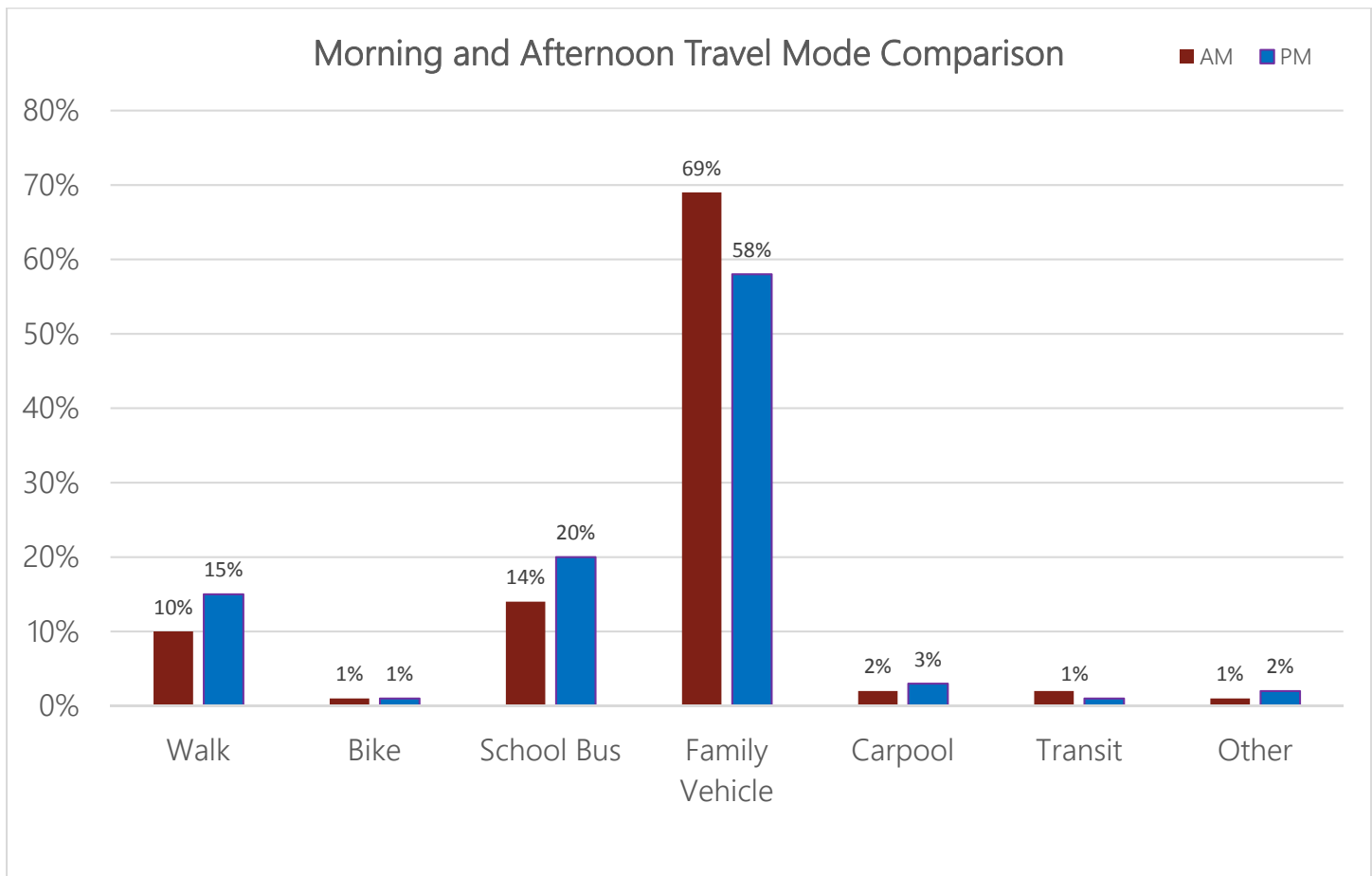
Student Travel Tally

A student travel tally was conducted at Corte Sierra Elementary School by teachers in their classroom on Tuesday, Wednesday, and Thursday, March 26-28, 2019, utilizing the form provided by the National Center for Safe Routes to School program. The travel tally included the questions "How did you arrive at school today?" and "How do you plan to leave for home after school?" The data from the completed tally sheets was entered on the National Center for Safe Routes to School website (www.saferoutesinfo.org). The complete report of the data from the website is included in Appendix E.

Figure 14 compares the morning and afternoon travel mode results of the student travel tally. The results of the tally reveal that student travel modes are different between the morning and afternoon. Key findings show:

- In the morning, a 69 percent of students are dropped off in their family vehicle with 14 percent of students arriving by school bus, 10 percent walking, 2 percent arriving in a carpool, 5 percent using some other form of transit and 1 percent bicycling.
- In the afternoon 58 percent of students are picked up in a family vehicle, with 20 percent leaving by school bus, 15 percent walking, 3 percent leaving in a carpool, and 1 percent bicycling.

Figure 14: Typical Model of Arrival at and Departure from School (Student Tally)





Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Parent Survey

To obtain input from parents about children walking and biking to school, a parent survey was conducted at Corte Sierra Elementary School in October 2018 utilizing the English and Spanish version forms provided by the National Center for Safe Routes to School program. The survey takes approximately 5 – 10 minutes to complete and utilizes questions standardized by the National Center for Safe Routes to School Program. Each family was asked to only complete one survey per household. The results of the parent survey are included in Appendix F.

Two hundred and nine parents representing children from all grade levels completed the hardcopy parent survey for Corte Sierra Elementary School. Findings from the survey include:

- 40 percent of respondents indicated that the child's home was within one half mile of the school
- Students living 1 to 2 miles away from school primarily travel by school bus, while those living within one half to one mile from school primarily travel by family vehicle.
- 37 percent of students living within one quarter mile of the school are primarily walking. The students living within one half mile of the school are primarily being dropped off in the morning in a family vehicle and then walking in the afternoon.
- 28 percent said that their student had requested permission to walk or bike to/from school in the last year.
- 48 percent of parents said they would not feel comfortable with their kids walking to school regardless of age.
- The main reasons parents reported that their children do not walk to school are distance, safety of intersections and crossings along their route, the volume and speed of traffic along their route, violence or crime, and speed of traffic along their route. Crossing guards and convenience of driving received the fewest responses from this group.
- For parents who already allow their child to walk or bike to/from school without an adult, the majority indicated distance, speed of traffic along their route, and climate as issues that affected their decision. The safety of intersections and crossings received the fewest responses from this group.
- 70 percent of parents perceived walking and biking to school as healthy or very healthy for their child.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

SRTS Newsletter

Another outreach effort was conducted to obtain feedback from the community as to what the issues and concerns are regarding students walking/biking to school and, how we, as a team, can assist and develop solutions to make the walking/biking routes to school safer. This outreach was conducted via a Newsletter prepared by the consultant and distributed to the community by the school. In the newsletter, the consultant team summarized the project background including the purposes and goals of a SRTS study, discussed the background information regarding the parent survey and student travel tally, gave a brief description of the observations that were made during the walking / biking assessment, and identified three areas that the consultant team would like to seek input from the community. The questions that were posed in the newsletter are as follows:

- What stops your student from walking or biking to school?
- If your child enjoys walking or biking to school, why do they like to do it?
- What other comments or concerns do you have regarding your child walking or biking to school?

The newsletter that was distributed to the school and community can be found in Appendix G.

Parent / Community Letters

During the kick-off meeting, the consultant received two separate letters from the community as well as parents of students that attend the Corte Sierra Elementary School. The letters illustrated issues and concerns that the parents as well as the community have regarding the drivers around Corte Sierra Elementary School. The issues that were described in the letters are as follows

- Drivers along Santa Fe Trail are observed to be traveling at an unreasonable speed
- Drivers often disregard the crossing guards while they are in the crosswalk and speed through them
- Parents walking their students to school have almost been hit by drivers

Appendix H has the letters that were submitted to the consultant by the parents / community.



WALKING AND BIKING SUGGESTED ROUTES MAP

Suggested routes to school maps are one of the most cost-effective and tangible means available for encouraging school children to walk or bike to school. The purpose of the maps is to provide school officials, parents, and students with a tool to help plan their walking and bicycling route to and from school. The maps also help to illustrate walking, bicycling, and crossing locations by identifying traffic controls, crossing guard locations, and the presence of sidewalks, pathways, or bicycle facilities along routes leading to a given school. The map was developed based on:

- Observed walking and biking routes currently utilized by students
- Presence and quality of pedestrian and bicycle facilities
- Feedback obtained from SRTS Stakeholder Team, students, and parents on existing walking and biking routes and their concerns with walking and biking to school

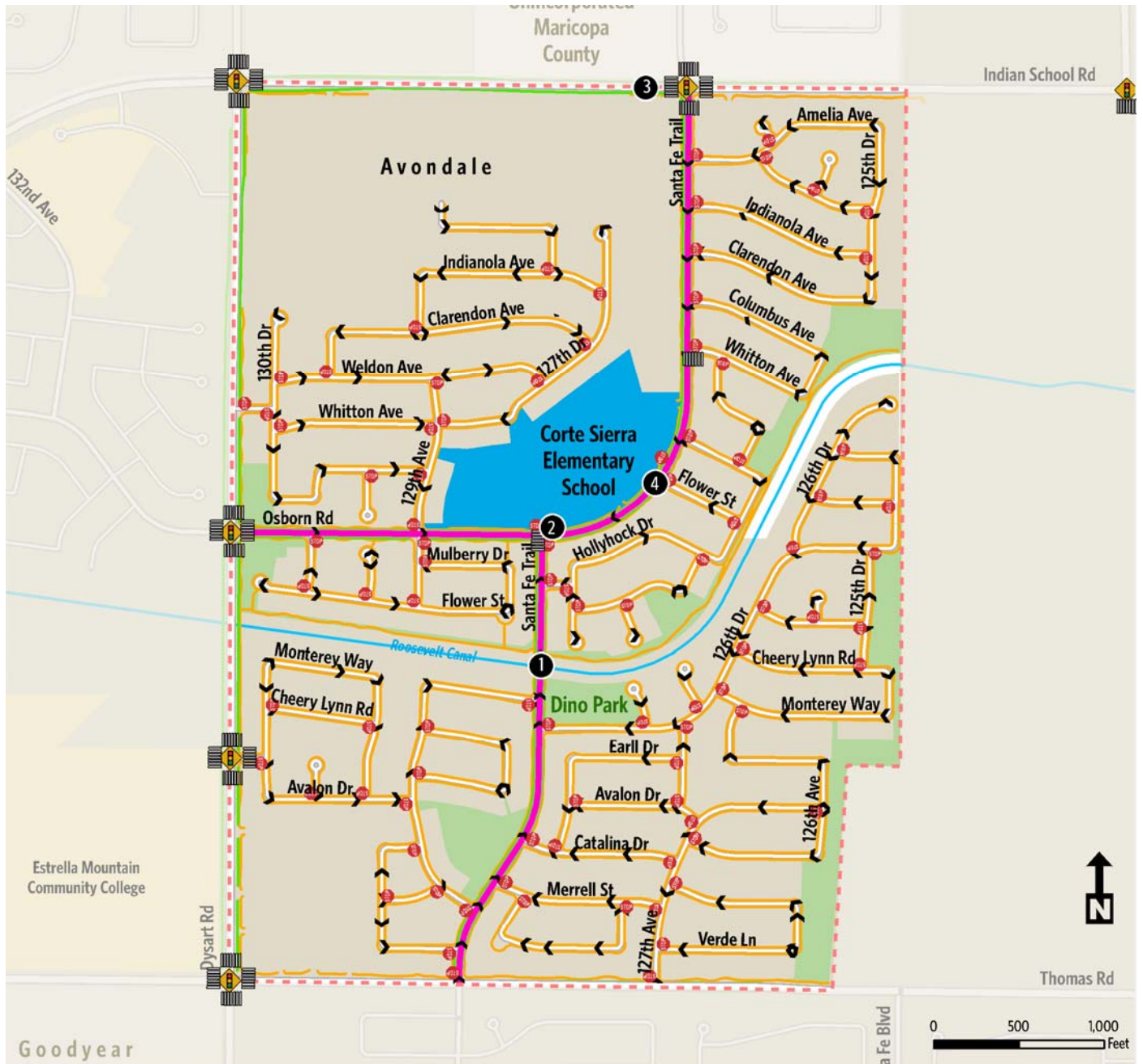
In addition to being used as a resource for parents and school staff in planning and encouraging walking and bicycling to school, the maps can serve as a tool for city staff to identify the location of needed transportation infrastructure improvements in school areas. Figure 16 presents the Walking and Biking Route Map that was developed for Corte Sierra Elementary School.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 15: Walking and Biking Route Map



Walking and Biking Route Map Corte Sierra Elementary

HOW TO USE THIS MAP

This Walking and Biking Route Map is intended to encourage adults and students to consider walking or biking to school. Adults are responsible for choosing the most appropriate option based on their knowledge of different routes and the skill level of their students.

Walking/biking routes are based on routes currently used by students and parents as well as the relative presence or quality of sidewalks, crosswalks, street lighting, etc.

RECOMMENDATIONS

- 1 Use caution near canal
- 2 Use caution while crossing due to excessive speeds
- 3 Beware of crosswalks and cracked sidewalks
- 4 No jaywalking

LEGEND

- Traffic Signal
- Stop Sign
- Crosswalk
- Bike Lane
- Sidewalk
- Canal
- Park
- Corte Sierra Elementary School



RECOMMENDATIONS

A number of site-specific recommendations were developed based upon field observations as well as input from the community. These recommendations have been divided by type.

Engineering Improvement Recommendations

Engineering measures for SRTS include the design, construction and maintenance of physical infrastructure that can improve the safety and comfort of students that are walking and biking to school. This infrastructure includes signage, pavement marking decals, and traffic control devices such as stop signs, bulb-outs, sidewalks, paths, bike lanes, and trails, median islands and buffered bike lanes. When considering engineering measures, it is best to identify the problem first, and then use accepted engineering practices to develop an appropriate solution.

Neighborhood Calming Devices

To ensure that motorists traveling along Santa Fe Trail comply with the designated speed limit, it is recommended that Corte Sierra Elementary School alongside the City of Avondale identify and install neighborhood calming devices along Santa Fe Trail within the school zone. The purpose of these devices will be to change driver behavior and force drivers to decrease their speed while in the school zone thus increasing the safety of students walking / biking to school.

The City of Avondale currently has a Neighborhood Traffic Management Program (NTMP) that focuses on reducing excessive vehicular speeds and traffic volumes by utilizing traffic calming features along existing residential and collector roads within the City of Avondale. In order to develop the appropriate calming device along Santa Fe Trail, the following steps will need to be completed by a representative at Corte Sierra Elementary School as well as the City of Avondale:

- 1) Initial Request
- 2) Traffic Study
- 3) Develop Plan
- 4) Petition
- 5) Construction

The process for obtaining traffic calming features within the City of Avondale is further explained here: <https://www.avondaleaz.gov/home/showdocument?id=7514>

Crosswalk Re-Striping

To ensure that motorists traveling along Santa Fe Trail are aware that they are approaching a school crosswalk, it is recommended that the following crosswalks be re-striped to provide higher visibility.

- Osborn Road & Santa Fe Trail
- Santa Fe Trail & Whitton Avenue

Currently the school zone crosswalks located at the specified areas are "standard" low-visibility crosswalks; to achieve a higher visibility it is recommended that the crosswalks be re-striped in a "ladder" formation.

ADA Compliance – Pedestrian Ramps

To ensure that students walking and biking to school have the same opportunity to do so, regardless of disability, it is recommended that all pedestrian ramps within the surrounding area of Corte Sierra Elementary School be upgraded to ensure ADA compliance. The majority of pedestrian ramps in the surrounding area did not have truncated domes but appear to be in good condition. These ramps need to be evaluated to see if they meet the



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

current ADA Accessibility Guidelines (ADAAG) standards. When upgraded, the new ramps will need to meet Public Right-of-Way Accessibility Guidelines (PROWAG) standards.

Sidewalk / Ramp Repairs

To ensure that students walking and biking to and from the Corte Sierra Elementary School are able traverse sidewalks and ramps within their designated paths, it is imperative that the sidewalks and ramps that have been damaged are repaired appropriately. Although, the majority of sidewalks and ramps within the surrounding area of Corte Sierra Elementary School are in good condition there are locations that needed some immediate repairs. The following issues have been identified on the sidewalks within the surrounding area.

- Large cracks in sidewalks
- Non-flush transitions between sidewalk panels
- Non-flush transitions between pedestrian ramps and the roadway
- Sidewalk obstructions



Sidewalk / Ramp issues along Santa Fe Trail

Improve Canal Area Safety

To ensure that potential hazards at the canal bridge located south of the Osborn Road and Santa Fe Trail intersection are mitigated, it is recommended that the fencing be installed along the canal access roads. There are steep drop-offs into the canal and no barriers or signage in place to warn students of potential dangers of an open canal. The canal access should be blocked at Santa Fe Trail and signage should be posted to inform students of potential danger.



Canal lining eroding



Education and Encouragement Recommendations

Education and Encouragement is a main factor when implementing all SRTS programs. Educating the students, faculty, and public consists of activities such as teaching bicyclist safety, traffic safety, and informing them of the benefits and goals of SRTS programs. Education strategies should create excitement and desire to walk or bike to and from school. Special events, clubs, contests and other ongoing activities can help children and parents understand that walking and biking are easy and fun.

Develop SRTS Coalition

Develop a SRTS Coalition of interested parents, staff, and volunteers to assist with planning and conducting SRTS events. The Coalition may include school faculty and staff, PTA representative, the school nurse, community members, local businesses, City officials, and local public health professionals. Activities the Coalition may lead include:

- Championing walking/biking to school at community and school events
- Twice a month commitment to serving as a school crossing guard
- Organizing an event for International Walk/Bike to School Day
- Leading walking school buses or bicycle trains

Parent Champion Program

Parent volunteers can significantly assist Corte Sierra Elementary School with developing their SRTS program, whether by volunteering for an event, coordinating with other parents, or establishing a working group. The parent champion program should work closely with the SRTS Coalition to organize and participate in events. It is important that Parent Champions also receive in-depth SRTS training. The Champion Program may assist in:

- Championing walking/biking to school at community, PTA meetings, and school events
- Engaging community members in practicing traffic safety along walking/bike routes
- Receiving training and serving as a school crossing guard
- Setting-up and manning booths at Back to School Events, community events, and during school assemblies
- Leading walking school buses or bicycle trains

A guidebook for Parent Champion Program is available here: <http://www.sparetheyairyouth.org/parent-champion-volunteer-programs-guidebook>

Parent and Caregiver Education

Education directed towards parents can strongly influence whether more children walk and bicycle to school in a safe manner. A parent's own behavior also impacts the safety of their child and all children as they walk or bicycle to school. For example, a parent who speeds to drop off their child at the school makes a less safe environment for walkers and bicyclists. To communicate and educate parents, Corte Sierra Elementary School may consider:

- Develop and distribute Suggested Routes Map – distribution may include email or information sent home with students
- Post educational materials and Suggested Routes Map on school website
- Host a "How to Walk/Bike to School" program where both parents and students learn about traffic safety
- Encourage parents to participate in scheduled SRTS events held at the school
- Back-to-School night and parent/ teacher conferences can also be a good time to educate parents and provide safety reminders



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

In-Classroom Curriculum

In-classroom lessons and skills training activities teach students about walking, bicycling, health, and traffic safety. Lessons introduce pedestrian and bicycle safety to students, including what types of situations they may encounter on the road, how to follow street signs, and how to interact with drivers. Rhymes, songs, and videos help students remember how to walk and cross streets safely. Examples of lessons include:

- Math – calculate walking distances
- Language Arts – Write about what you see on your route to school
- Science – Walk outdoor to collect samples
- Art – Designing posters to encourage walking
- Geography - Draw a map of route to school

Resources and examples for classroom curriculum include:

- Colorado DOT Bicycle and Pedestrian Lesson Plans – <https://www.codot.gov/programs/bikeped/safe-routes/training-curriculum/srts-lesson-plans.html>
- Sonoma Safe Routes to School - <https://sonomasaferroutes.org/content/education-programs>
- Safe Routes for Kids Bicycle Safety Program (Bicycle Transportation Alliance) - www.btaoregon.org/bicycle-safety
- Spanish language tip sheets - www.saferroutesinfo.org/program-tools/education-tip-sheets

Participate in Special Events and Walk/Bike to School Day

To help encourage and educate students and parents participate in special events such as International Walk/Bike to School Day, Earth Day, etc. The international Bike to School Day is held annually in October and Bike to School in May. Corte Sierra Elementary School should participate and register at www.walkbiketatoschool.org. The goal of this day is to increase walking and biking to school together with a purpose — to promote health, safety, physical activity, aid in the reduction of traffic congestion during the pick-up/drop-off at a school and concern for the environment.

Walking School Bus or Bicycle Train Ride

A Walking School Bus is a group of neighbors who walk to school picking up kids along the way or meeting at a set location. The rule of thumb is to have one adult for six children. A walking school bus can be as informal as two families taking turns walking their children to school to as structured as a route with meeting points, a timetable and a regularly rotated schedule of trained volunteers. A variation on the walking school bus is the bicycle train, in which adults supervise children riding their bikes to school. The flexibility of the walking school bus makes it appealing to communities of all sizes with varying needs.



Mileage Clubs or Mileage Contests

Mileage clubs and contests encourage children either to begin walking and bicycling to school or to increase their current amount of physical activity by making it fun and rewarding. Generally, children track the amount of miles they walk or bicycle and get a small gift or a chance to win a prize after a certain mileage goal is reached. Corte Sierra Elementary School could incorporate a classroom challenge, with the winning classroom receiving a special prize.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

One-Time Instruction

One-Time Instructions consist of events such as school assemblies. While all children benefit from events such as this, it is important to note that large group settings will not allow much interaction if any from students in attendance. Keeping the assembly short, visual, and to the point can assist with engaging students. Furthermore, reinforcing the information throughout the school year using different methods may help students retain the information. The school assembly can be combined with National efforts, such as National Walk/Bike to School Day or Earth Day.

Structured Skills Practice

Structured skill practices can provide students with real world simulations to practice safe bicycling methods. These methods can be taught as part of a classroom based lesson plan or even an afterschool program where an experienced faculty member could show students how to bike more efficiently. These programs can include items such as when and where to stop and how to properly utilize a crosswalk. This type of event can be completed as a onetime event or multiple lessons over a determined amount of time.

Additional Educational and Encouragement Programs

In addition, Corte Sierra Elementary School may want to consider the following programs:

- Bike Rodeo
- Walking Obstacle Course
- Classroom Contests
- Earn a Bike Program
- Student Clubs
- One-Time Instruction with the Avondale Police Department
- Neighbor Education on what are dangers to walking/biking (i.e., stray dogs, parked vehicles on sidewalks, etc.)



Enforcement Recommendations

As one of the six E's, enforcement combined with the other elements discussed above, is a tool to address the specific needs of school and to achieve long-term results. Enforcement strategies deter unsafe behavior of drivers, pedestrian, and cyclists and encourage all road users to obey traffic laws and share the road safely. Rather than law enforcement simply writing more traffic tickets, enforcement will consist of multiple stakeholders working together to promote safe walking, biking, and driving. In addition to law enforcement officers, school officials, school patrols, parents, students, and neighbors can help promote and enforce safe pedestrian, biking, and driving rules. Promoting safety through awareness and education and providing a police presence will assist the City in accomplishing their SRTS goals.

Community Wide Maintenance

In order to create a safer environment for students who walk and bike to school, as well as residents in the surrounding area of Corte Sierra Elementary School, it is recommended that the City of Avondale works alongside Home Owner Associations (HOA) to clear debris from sidewalks and ramps in their jurisdiction.

School Safety Campaign

A safety campaign is an effective way to build awareness of students walking, bicycling, and skateboarding to school and to encourage safe driving behavior. Campaigns can use media at or near schools—such as posters,



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

business window stickers, yard signs, or street banners—to remind drivers to slow down, obey STOP signs, and use caution in school zones. This type of campaign can also address other specific hazards or behaviors, such as walking or bicycling to school, school bus safety, and parent drop-off and pick-up behavior.

On-Site Parking Monitoring

Members of the SRTS Coalition or Parent Champion Program can assist Corte Sierra Elementary School in monitoring parent behaviors during arrival and dismissal hours. Monitoring tasks would include:

- Waving vehicles forward in the drop-off area
- Alert motorists to not park in the bus loading/unloading zone or drop-off lanes
- Ensure that students safely crossing parking lots

Cross Guard Training

Crossing guards assist students crossing streets and remind drivers to comply with traffic laws near schools. Crossing guards can be volunteer community members or paid employees. In addition to crossing guards, school safety patrols, who are trained students, may be used to help facilitate crossings. Special training and adult supervision is required for all school safety patrols.

MAG offers free Crossing Guard Workshops and training materials to provide basic education and training to school crossing guards. The workshops are held during select days of the year. Corte Sierra Elementary School should identify at least two additional crossing guards and register them for training at MAG. Additional information can be found at: srts.azmag.gov

Community Enforcement

School officials, school patrols, parents, students, and neighbors should be actively engaged in the promotion of safe driving, pedestrian, and biking behaviors. The previous Education and Encouragement section identifies many ways in which this can be accomplished. Additional considerations for the community to take part in enforcement include:

- School Patrol/Crossing Guards – continue to utilize crossing guards where possible to assist students with arrivals and dismissal. Students should be trained on where and how to cross.
- Parent Crossing Guards – ask parents to participate in twice-a-month crossing guard patrol.
- Neighborhood Speed Watch – similar to crime watch programs, residents voluntarily monitor unsafe driver behaviors and speeds to help raise public awareness.

Evaluation Recommendations

Evaluation is an important component of any SRTS effort. Not only does evaluation measure a program's reach and impact on a school community, it can also ensure continued funding and provide a path forward for ongoing and future efforts. Evaluation can measure participation and accomplishments, shifts in travel behavior, changes in attitudes toward walking and bicycling, awareness of the Safe Routes to School program, and the effectiveness of improvements.



SAFE ROUTES TO SCHOOL ACTION PLAN

Table 3 provides a SRTS Action Plan for Corte Sierra Elementary School. The Action Plan identifies key issues, recommended strategies to address the issue, the party that is responsible for leading the action, potential funding sources (if applicable), an implementation timeframe, and a method to evaluate the strategies progress and effectiveness. The school, school district, and City of Avondale should utilize this Action Plan to identify strategies that the different partners can pursue to improve the safety of students walking and biking to/from the school.

Strategy Impact

The strategy impact is a measure of how great the strategy influences or effects a child's level of comfort to walk or bike to school. A high impact strategy includes infrastructure and safety improvements that create a more walk- and bike-friendly environment. Whereas a low impact strategy includes measures that help to educate the public or create minor safety improvements.

Implementation Timeframe

The implementation timeframe of each strategy was identified based on the level of priority of the issue as well as potential cost. Strategies identified as near-term are those that are either urgent or those that require minimal effort to implement. Strategies identified for long-term implementation are those that should go through a formal evaluation and planning process to implement. Any strategy requiring a significant infrastructure investment is identified for long-term implementation.

Evaluation

The Evaluation column in the Action Plan identifies a method that can be utilized to evaluate the progress and effectiveness of the recommended strategy. On-going evaluation through conducting Parent Survey and Student Travel Tallies can help the school to track progress of SRTS efforts. These tools allow the school to track the actual number of students walking and biking to school, as well as parent's perceptions of walking and biking over time. As strategies are implemented from the SRTS Action Plan, ideally the Student Travel Tally should show a greater percentage of students reporting walking and biking and a positive perception from parents in the Parent Survey. As such, the SRTS team should consider conducting these two surveys annually as strategies from the SRTS Action Plan are implemented.



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Table 2: Corte Sierra Elementary School SRTS Action Plan

Issue #	Issue	Recommended Strategy / Task	Education	Encouragement	Enforcement	Engineering	Lead	Potential Funding Source	Implementation Cost	Impact	Implementation Timeframe	Evaluation
1	Currently there are minimal students walking and biking to school. Through education and encouragement, there is an opportunity to increase the percentage of students walking and biking.	Develop and distribute Suggested Routes map to students and parents.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	Medium	Near-Term	Number of encouragement activities. The Student Tally and the Parent Survey will be used in the future to measure increases in non-motorized transportation use.
2		Post educational materials and Suggested Routes Map on school website. At Back-to-School night, provide education on how to safely walk and bike to school.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	Medium	Near-Term	
3		Hang posters at key activity centers educating the public on unsafe behaviors that create unsafe walking/biking conditions (i.e., parking on sidewalk, stray dogs, etc.).	X				Corte Sierra Elementary / City of Avondale	N/A	Low	Medium	Near-Term	
4		Host a Walk/Bike to School day that includes a safety assembly and organized walk/bike to school events.	X	X			Corte Sierra Elementary / City of Avondale	N/A	Low	High	Near-Term	
5		Develop a list of interested parents, staff, and volunteers to assists with planning and conducting events, such as a Walking Bus, Bicycle Train, etc.	X	X			Corte Sierra Elementary / City of Avondale	N/A	Low	High	Near-Term	
6		Participate and plan in education and encouragement activities such as National Walk and Bike to School Days. On-going task.		X			Corte Sierra Elementary / City of Avondale	N/A	Low	High	Near-Term	
7		Develop contests and school events that encourage and education students on walking and biking. On-going task.		X			Corte Sierra Elementary / City of Avondale	N/A	Low	High	Near-Term	
8		Identify methods of incorporating walking and biking to school into existing school curriculum. On-going task.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	High	Mid -Term	



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Table 2: Corte Sierra Elementary School SRTS Action Plan (Continued)

Issue #	Issue	Recommended Strategy / Task	Education	Encouragement	Enforcement	Engineering	Lead	Potential Funding Source	Implementation Cost	Impact	Implementation Timeframe	Evaluation
9	Currently there are minimal students walking and biking to school. Through education and encouragement, there is an opportunity to increase the percentage of students walking and biking.	Through the SRTS Coalition and Parent Champion Program, create a neighborhood Walking School Bus.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	High	Mid -Term	Number of encouragement activities. The Student Tally and the Parent Survey will be used in the future to measure increases in non-motorized transportation use.
10		Conduct student tallies to determine the number of participants walking and biking to school. Perform annually.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	Low	Mid -Term	
11		Conduct parent survey to measure the success of the SRTS program. Perform annually.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	Low	Mid -Term	
12		Update Suggested Route Maps yearly based on infrastructure improvements. Distribute at the beginning of every academic year.	X	X			Corte Sierra Elementary / City of Avondale	N/A	Low	High	Mid -Term	
13		Utilize the Avondale Police Department for a One-Time Instruction on safe practices while walking and biking to and from school.	X				Corte Sierra Elementary / City of Avondale	N/A	Low	High	Near-Term	
14	Parents and other vehicles often exceed the designated speed limit along Santa Fe Trail as well as Osborn Road, within the school zone of Corte Sierra Elementary School.	It is recommended that Corte Sierra Elementary School alongside the City of Avondale follow the NTMP process for evaluating speed and construct traffic calming measures if conditions meet adopted criteria.			X	X	City of Avondale	Neighborhood Traffic Management Program	Mid	High	Mid-Term	Speed studies along Santa Fe Trail before and after the implementation of the speed tables.
15		Add landscaped medians that function as a traffic calming feature. This strategy will serve as a double solution, not allowing the pedestrians to jaywalk during school times.				X	City of Avondale	City/Grants	High	High	Long-Term	



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Table 2: Corte Sierra Elementary School SRTS Action Plan (Continued)

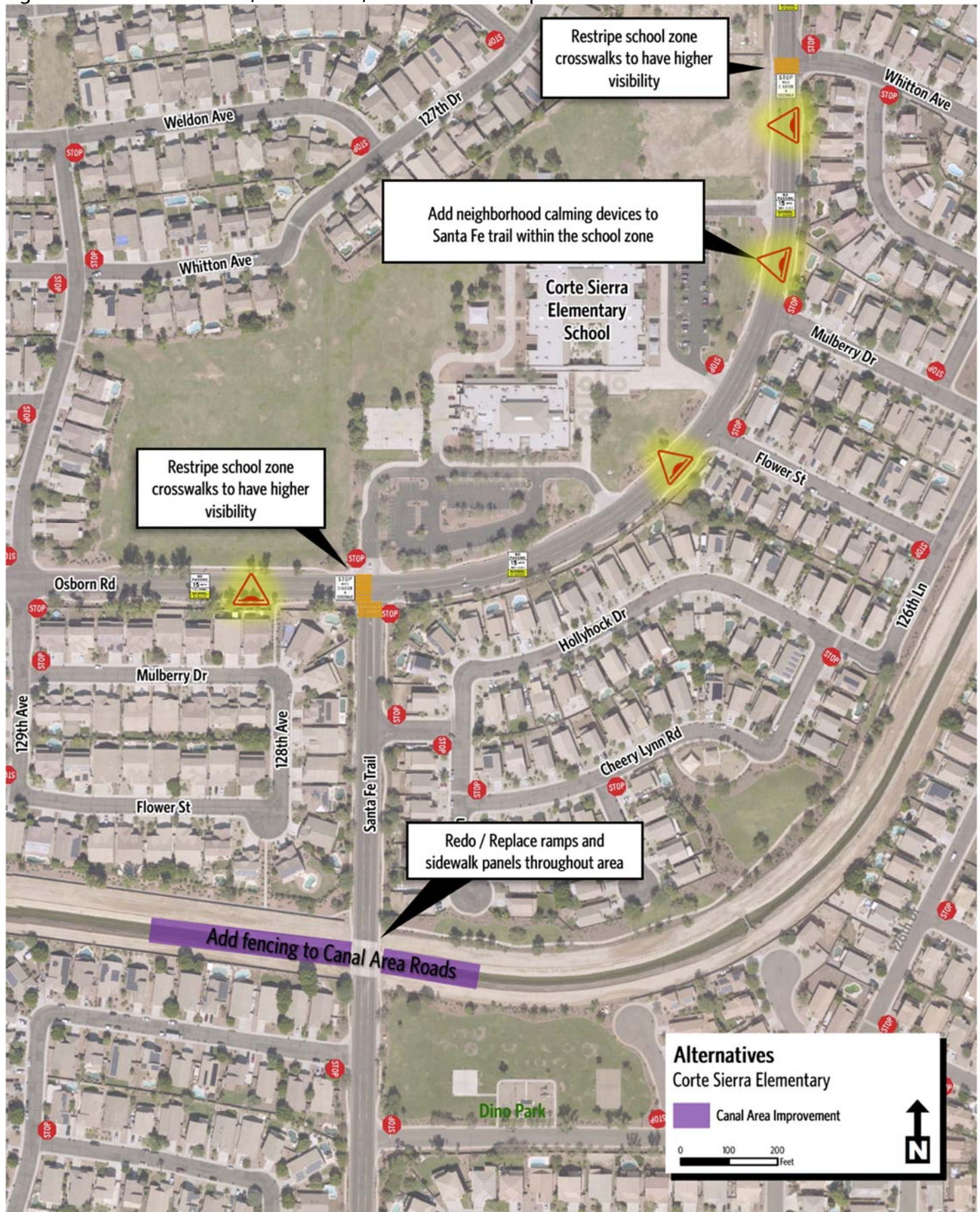
Issue #	Issue	Recommended Strategy / Task	Education	Encouragement	Enforcement	Engineering	Lead	Potential Funding Source	Implementation Cost	Impact	Implementation Timeframe	Evaluation
16	Parents and other vehicles at times disregard the school crosswalks located at Osborn Road & Santa Fe Trail as well as Santa Fe Trail & Whitton Avenue.	It is recommended that Corte Sierra Elementary School re-stripes the school crosswalks to have a higher visibility. The "ladder" formation is recommended.				X	City of Avondale	N/A	Low	High	Near-Term	Interviews with Corte Sierra Elementary School Crossing guards before and after the implementation.
17	Currently, pedestrian ramps appear to be in good condition and ADA compliance appears to be readily accessible. However, there is no blind person detection system on the pedestrian ramps.	Assuming the ramps meet the proper ADA compliance measurements, it is recommended to add truncated domes.				X	Corte Sierra Elementary / City of Avondale	City/Grants	Mid	High	Near-Term	Observe ramps after the implementation of truncated domes.
18	The canal located near Corte Sierra Elementary School is experiencing erosion damage creating potential safety hazards for students and children.	Redo the canal lining within the vicinity of the canal bridge located south of Osborn Road and Santa Fe Trail.				X	Roosevelt Irrigation District (RID)	City/Grants	High	High	Mid-Term	Observe the condition of the canal after repairs are made to determine if the repairs are satisfactory.
19	Although the majority of sidewalks and ramps within the surrounding area of Corte Sierra Elementary School are in good condition, there are sidewalk / ramp locations that need to be fixed.	Redo / Replace ramps and sidewalk panels that are identified in the SRTS Report.				X	City of Avondale	City/Grants	High	High	Mid-Term	Observe sidewalks and ramps that were identified by the SRTS Report after the implementation of new sidewalk panels / pedestrian ramps.
20	Parents and other vehicles currently utilize the bike lanes along Santa Fe Trail as a parking area. This impedes bicyclists and causes potential safety issues.	Add a buffer to the bike lanes along with a physical barrier (i.e. delineators)				X	City of Avondale	City/Grants	Mid	High	Mid-Term	N/A



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 16: Alternatives – Area, Osborne Rd, and Canal Area Improvements

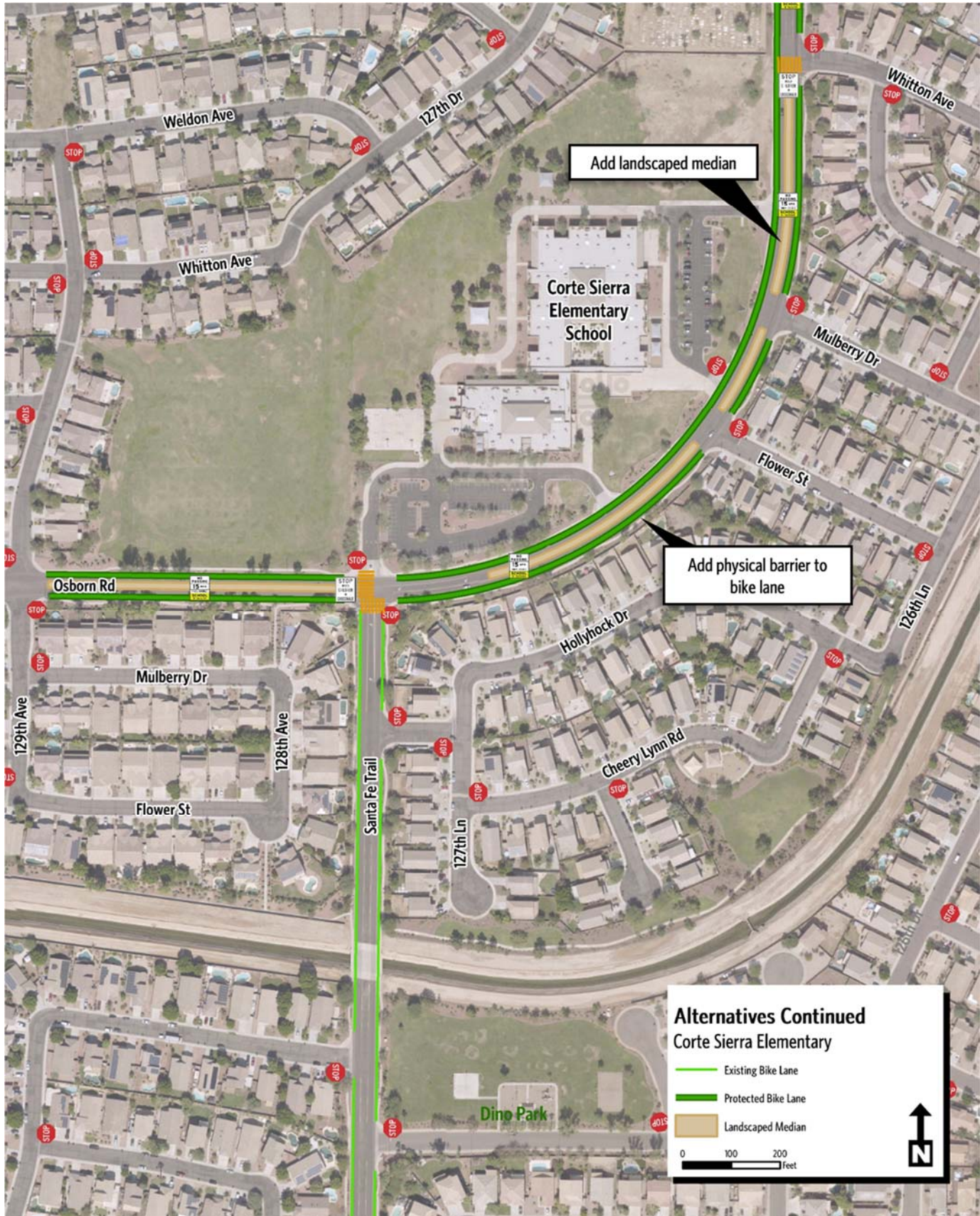




Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

Figure 17: Alternatives Continued





FUNDING SOURCES AND OPPORTUNITIES

The following is a list of potential funding sources that the school, school district, or the City of Avondale may consider pursuing to implement the strategies identified in the Action Plan. While some strategies do not necessarily require funding to implement (i.e., education, encouragement, and enforcement strategies), other strategies may require extensive funding and partnerships to implement.

Arizona Governor's Office of Highway Safety (GOHS)

The Arizona GOHS administers Federal funds to state, local and nonprofit organizations to implement programs and projects that address safety issues on Arizona's roadways. There are eight categories for grant programs funded by GOHS; of those eight, two of them may be relevant for SRTS:

- **Pedestrian and Bicycle Safety (PS).** GOHS funds traffic safety programs such as bicycle rodeos for schools or other programs that are designed to increase safety awareness and skills among pedestrians and bicyclists. There is also funding for bicycle helmets and helmet fittings for children in need. Programs funded in this category are required to include both education and enforcement elements to increase safety awareness and address driver behavior.
- **Police Traffic Services/Speed Control (PTS).** Focuses on enforcing and encouraging compliance with seat belt use, speed limit, aggressive/reckless driving and other traffic laws. The grant funding can be used to pay overtime for officers and/or equipment (speed measuring devices, computers, motorcycles) to conducted enhanced enforcement for a particular issue. Examples of funded equipment include: motorcycles, radar and laser speed measuring devices, visible speed display radar trailers, and computers.

Applying for a GOHS grant begins with submission of a proposal and signed cover letter. Grant applications are available for download in PDF format on the GOHS website. More information can be found at: <https://azgohs.gov/grant-opportunities/>

MAG Design Assistance Program

The MAG Design Assistance Program was initiated to encourage the development of pedestrian and bike facilities and stimulate integration of facilities into the planning and design of all types of projects. Projects using design assistance funds focus on developing preliminary scoping documents for a bike and/or pedestrian facility project. Types of projects that are eligible for Design Assistance funding include: projects that facilitate safe crossings and access to bike/pedestrian facilities, bike and pedestrian access to transit, and bike and pedestrian facility construction and improvements (sidewalk improvements, bike lanes and shoulders, safety improvements, and signing, marking and wayfinding).

A request for projects for Design Assistance funding is released by MAG in May each year.

Transportation Alternatives (TA) Funding

The City of Avondale, as a MAG member agency, is eligible for TA funding that can utilized to support SRTS projects. The funds can be utilized for infrastructure improvements that promote and encourage walking and biking to school as well as for non-infrastructure needs such as educational materials, trainings, data gathering and analysis, SRTS program support and others. The call for projects for TA funding occurs each August in conjunction with the Transportation Improvement Program (TIP) Modal programming process.

Additional information can be found at: <http://azmag.gov/Programs/Transportation/Active-Transportation/Transportation-Alternatives-Applications>



Safe Routes to School (SRTS) Study

for Corte Sierra Elementary School - Litchfield Elementary School District No 79

MAG Non-Infrastructure SRTS/Support Activity Projects

MAG also sets-aside funding for qualifying SRTS projects that would only involve non-infrastructure projects. These projects would include "Support Activity Projects" that are specific activities with the goal of encouragement, education, enforcement and evaluation activities. Examples include: yellow school crossing roll-out signs, crossing guard safety apparel, modest volunteer incentives for encouragement activities, bike helmets, and agency police staff overtime to assist with SRTS activities, among others.

More information is available at: <http://srts.azmag.gov>

MAG Crossing Guard Training Workshops

MAG annually holds free Crossing Guard Training Workshops that provide basic education and training to school crossing guards, thus meeting a basic but essential step to ensure that crossing guards do not compromise their own safety nor that of K-8 school children while performing their duties. All K-8 schools may utilize this workshop to train their school crossing guards free of charge. Workshops are typically held one to two weeks before the start of the school year; in 2019, the workshop will be held at the following days and locations:

- Washington High School – Thursday July 25, 2019
- Rio Vista Recreation Center – Tuesday July 30, 2019
- Dobson High School – Thursday August 1, 2019

More information is available at: <http://srts.azmag.gov>

Centers for Disease Control and Prevention (CDC) Grant

The CDC's Office of Financial Resources awards and administers grants and cooperative agreements to state and local governments, domestic non-profits/educational institutions, and domestic for-profit groups with projects that support the mission of promoting health and quality of life by preventing and controlling disease, injury, and disability. Grants and cooperative agreements provide the means to transfer money, technical assistance, and expertise to partners in exchange for their contributions to federal public health goals and objectives.

More information if available at: <https://www.cdc.gov/grants/index.html>