6 PROPOSED MOBILITY PROGRAMS

6

PROPOSED MOBILITY PROGRAMS

This chapter presents key programmatic recommendations to support active travel infrastructure proposals presented in the previous chapter. The enhanced infrastructure, combined with programs for supporting behavior change will afford the City the best opportunities for shifting mode choice away from single occupant driving to walking, cycling and riding transit. This shift in turn will help to reduce greenhouse gas emissions, improve community health, and create a more vibrant City of Carlsbad.

Four programs in particular are presented in this chapter – Cycling Education, the Carlsbad Safe Routes to School, the Carlsbad Transportation Demand Management Program, and the Carlsbad Active Transportation Monitoring Program. Each is described in the following sections of this chapter.

IN THIS CHAPTER

- Summary of Mobility Programs, including Cycling Education Programs, Safe Routes to School and Transportation Demand Management Programs

CYCLING EDUCATION

Facilitating educational programs to teach children and adults safe walking and bicycling behaviors can improve active travel practices in the City of Carlsbad. These would bring many benefits to the users, as streets would be shared respectfully and appropriately.

The following programs are proposed:

Smart Cycling:

This course is designed to get adults and children (must be accompanied by an adult) comfortable on the road and ready to commute or make short trips over two days, including a 3-hour classroom portion and a 6-hour road portion. Attendants should learn proper bike & helmet fit, safety tips for riding in traffic, techniques for navigating hazardous roads, emergency maneuvers, using public transit with a bike, their legal rights and responsibilities, as well as instructions on fixing a flat and bicycle adjustments.

Basic Bike Skills Class:

This course includes 1.5-hour classroom learning, and 2.5-hours on bike drills/on-road riding. It will cover general bike safety, legal rights and responsibilities, and emergency maneuver skills, with the purpose of getting riders comfortable on the road. Adults and children under 18 are welcome, but they must be accompanied by an adult.

Bike Rodeos:

These are bicycle skills events targeting children and teens. They are taught on a school playground or parking lot, which provides them with the opportunity to practice and develop skills that will help them become better bicyclists and avoid typical crashes. Its objective is to teach young riders the importance of seeing, being seen and remaining under control at all times when riding a bicycle. Bicycle skills stations give students the opportunity to practice a variety of specific bike handling skills and procedures for operating a bike legally and more safely on the street. As well, simulation to traffic situations help them improve their skills.

School Assemblies:

Elementary Safety Assemblies are a great way to get information about walking and biking safely to students from Kindergarten through 6th grade. This program consists of an interactive 40-minute presentation that covers the basics of walking and biking to school in a fun and exciting format for children. Helmet fit, bike rules, street crossing tips, driver communication, and sidewalk riding, are some of the topics taught. This event can handle up to 250 students per assembly.

School Community Rides:

Community Rides offer kids and parents an opportunity to ride with an instructor safely around their own neighborhood. This ride is a way to utilize an existing road to practice new bike handling skills and best practices in a group setting. Separated bicycle facilities and roads with low traffic volume are used whenever possible. Bikes are for transportation as much as fun, and this ride helps to reinforce that.

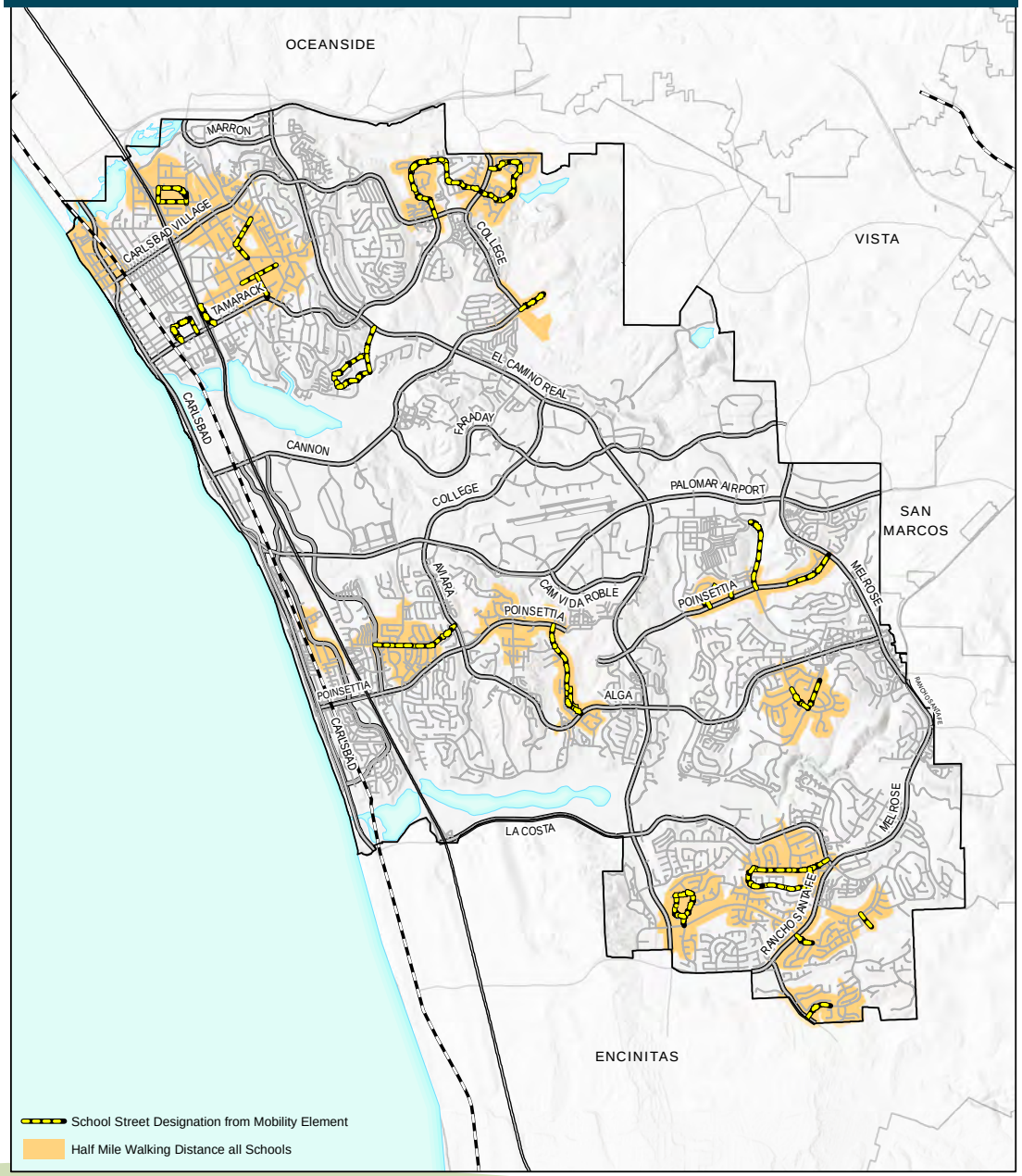
Brown Bag Presentation:

SD County Bike Coalition schedules a bike safety and bike commuting 45-minute presentation intended for employees during the lunch hour. This provides safety tips, information on the law, and a question and answer portion for curious new commuters.

Group Ride:

These are 4-5 miles rides organized for groups of bicyclists. They are mostly on flat, separated facilities, and lightly traveled roads. They are done at a pace that encourages talking and interaction. Groups get to talk and stop a lot, while having fun and getting information about riding in various situations.

FIGURE 6-1 SCHOOL AREAS MAP

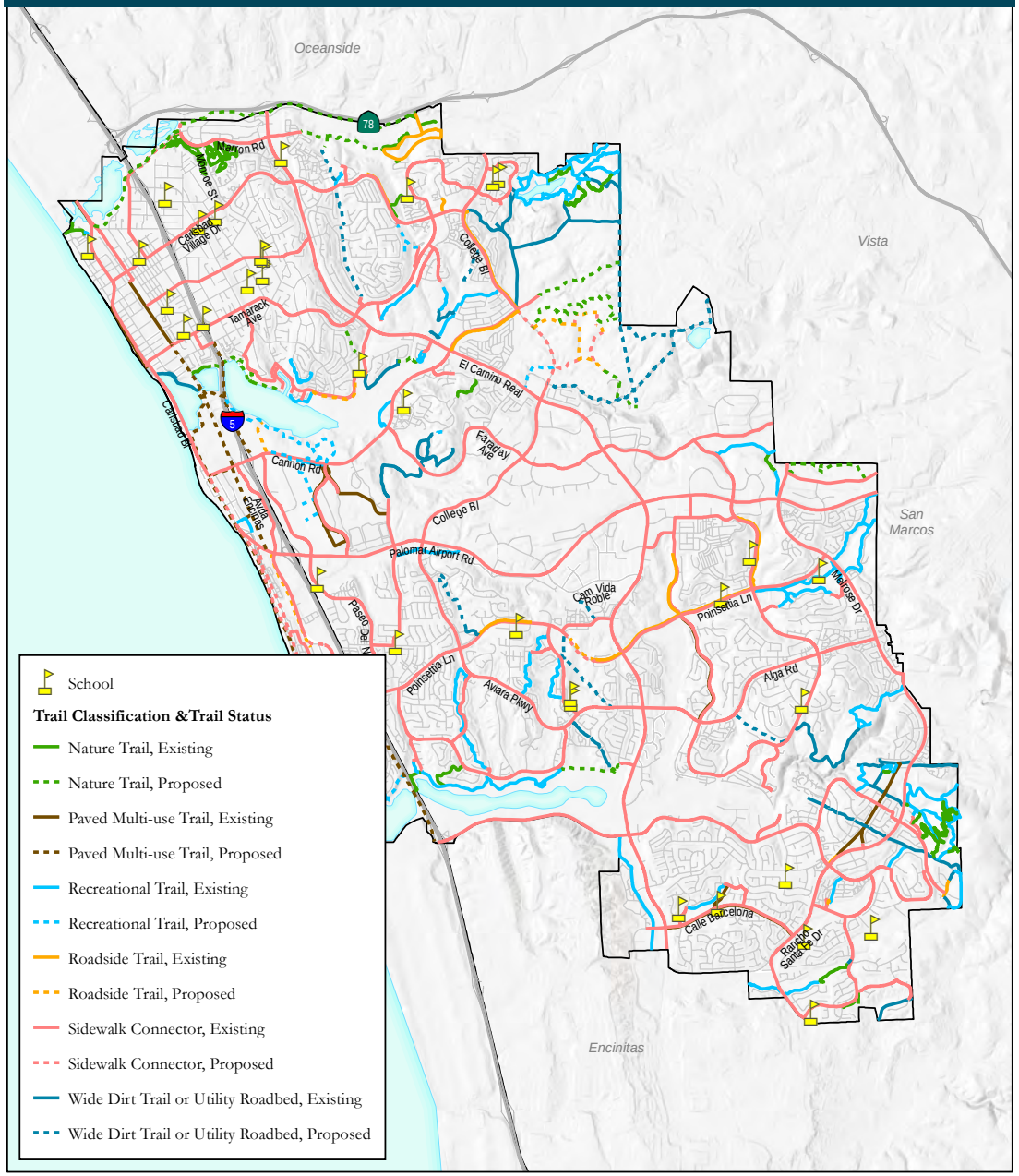


SAFE ROUTES TO SCHOOL

Providing safe and connected routes to school can produce many benefits for City of Carlsbad residents and families. Reduced congestion around school sites, fewer GHG emissions, and a healthier student population are only a few of the benefits. Comprehensive SRTS programs include the 6 E's: Education, Encouragement, Enforcement, Engineering, Evaluation, and Equity, as outlined in the Emerging Mobility Chapter. Figure 6-1 shows SRTS walksheds around the 20 schools in Carlsbad, along with the School Streets roadway segments.

As the City begins to implement the SMP, student trips to and from school should be evaluated similarly to those trips taken by older adults.

FIGURE 6-2 SCHOOL NEAR TRAILS



Existing and planned trails are an important component of Safe Routes to School. Figure 6-2 shows existing and planned trails per the city's recently adopted 2019 Trails Master Plan. Safe Routes to School programs should focus on connecting schools and school children to nearby existing or planned trails for the school trip.

The following priority strategies for implementation have been identified by the City of Carlsbad and their partners at the Carlsbad Unified School District:

SchoolPool Carpools

Carpools can reduce traffic congestion and pollution in front of the school and still involve families who live too far to walk or bike. Carpools can be organized through school communications or online tools.

In an effort to reduce congestion and emissions related with school trips, the City of Carlsbad implemented a pilot carpool program in fall 2019.

The effort will evaluate the effectiveness of messaging and program elements, and includes student tallies, parent surveys, and nationwide best practices research. If successful, participating school districts, school sites, and City of Carlsbad staff are encouraged to continue collaborative efforts and expand the program based on staff availability and capacity.

Parent Surveys

The Safe Routes to School Parent Survey asks information about travel mode and distance, attitudes towards the program, and what factors affect whether parents allow their children to walk or bike to school. Surveys are frequently administered at the beginning and end of the SRTS program or school years in order to track behavior changes and overall success of the program.

The same survey can be utilized year-over-year to track progress against the baseline. A take-home survey can also be downloaded for free from the National Center for Safe Routes to School, but requires data entry to be completed by someone from the school or a volunteer.

It is recommended that the City coordinate with school district representatives to implement annual parent surveys to gauge current barriers to walking, biking, and carpooling to school to develop appropriate responses.

Walk Audits

This activity gathers parents and other interested community members together to review the school drop-off or pick-up period, evaluating traffic circulation, student loading, and travel behaviors along with transportation facilities within a quarter-mile radius of the school. The audit identifies potential solutions to parents concerns about active transportation and provides information for experts to create existing conditions maps, which depict both unsafe behaviors and surroundings. These observations can be translated into infrastructure improvement plans that prioritize recommendations.

Complete Walk Audit results for the 20 schools in Carlsbad are included in Appendix H of this Plan.

While baseline walking assessments have been conducted as part of this SMP process, it is recommended that the City coordinate with school district representatives to hold regular walk audits, or provide a similar way for parents and school representatives to provide feedback on challenges facing parents and students in accessing their respective school areas.

Conceptual Improvement Maps

Information collected from the walk audits and other analyses can be used to identify the most urgent infrastructure improvements, such as sidewalk repairs and signal installations, and can be documented on a map. These maps support pursuit of future grant funding and provide useful information to public works staff about where improvements are needed.

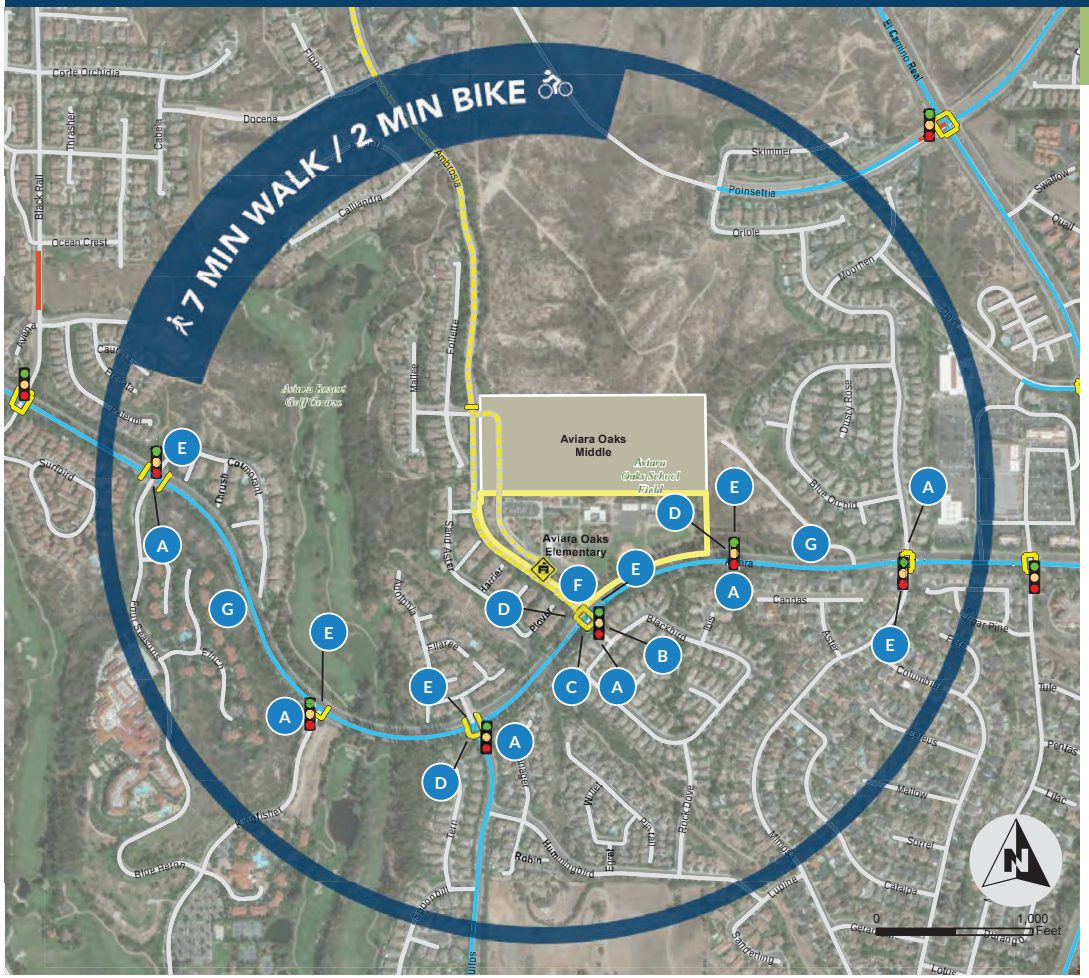
SRTS Conceptual Improvement Maps for the 20 schools in Carlsbad are included in Appendix G of this Plan.

Figure 6-3 shows a sample Conceptual Improvement Plan for Aviara Oaks Elementary School.

FIGURE 6-3 EXAMPLE CONCEPTUAL IMPROVEMENT MAP

Aviara Oaks Elementary School - DRAFT

CONCEPTUAL IMPROVEMENT PLANS



Potential Improvements

- **A** Convert existing signal to audible countdown signal to increase awareness of signal
- **B** Evaluate "No Right on Red" signage or Leading Pedestrian Interval to decrease conflicts between students and turning vehicles
- **C** Evaluate signal timing adjustments to increase amount of time for students to cross street
- **D** Convert existing school zone crosswalks to high-visibility continental crosswalks with advanced stop bar to reduce conflicts between students and vehicles
- **E** Evaluate intersection striping where existing bike lanes enter intersection to improve delineation between vehicles and people on bikes
- **F** Upgrade all legs of intersections to ADA compliance standards for users with disabilities
- **G** Install speed feedback signs on all arterial streets to encourage predictable driving behavior
- **H** Evaluate roadway narrowing or additional measures to accommodate wider (6-8') places for people walking

Evaluate Feasibility of Alterative Pedestrian Facility in Areas with No Sidewalk

Traffic Signal

Marked Crosswalk

School Access Point

Bike Lane

School Street

FIGURE 6-4 SAMPLE SUGGESTED ROUTES TO SCHOOL MAP

Suggested Routes to School Maps

Suggested routes to school maps are a great encouragement tool for families considering allowing their child to walk or bike to school. Maps can include walking school bus, bike train pick up and instructions for coordinating these programs. These maps should be continuously updated if road conditions change.

Suggested Routes to School maps for the 20 schools in Carlsbad are included in Appendix I of this Plan.

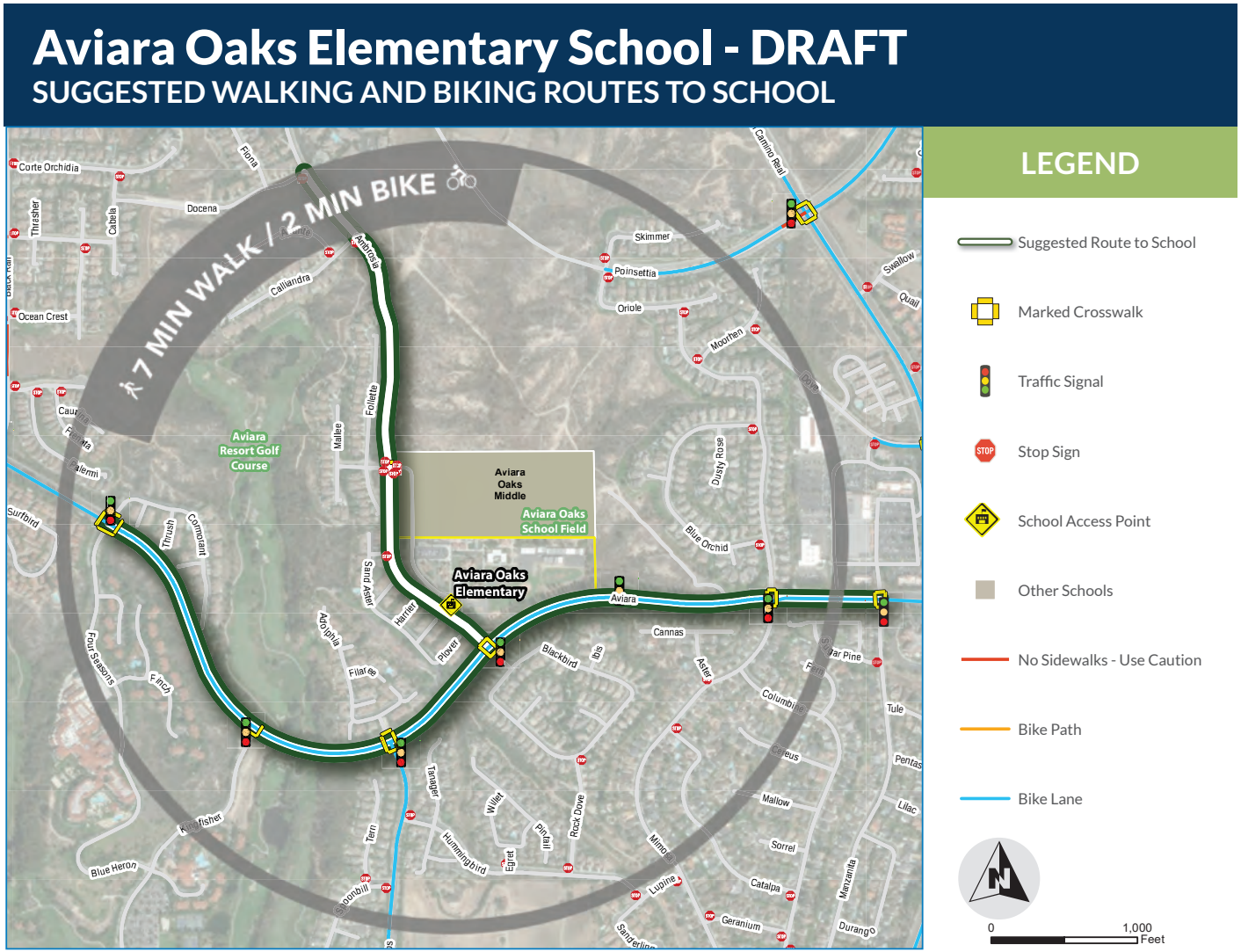
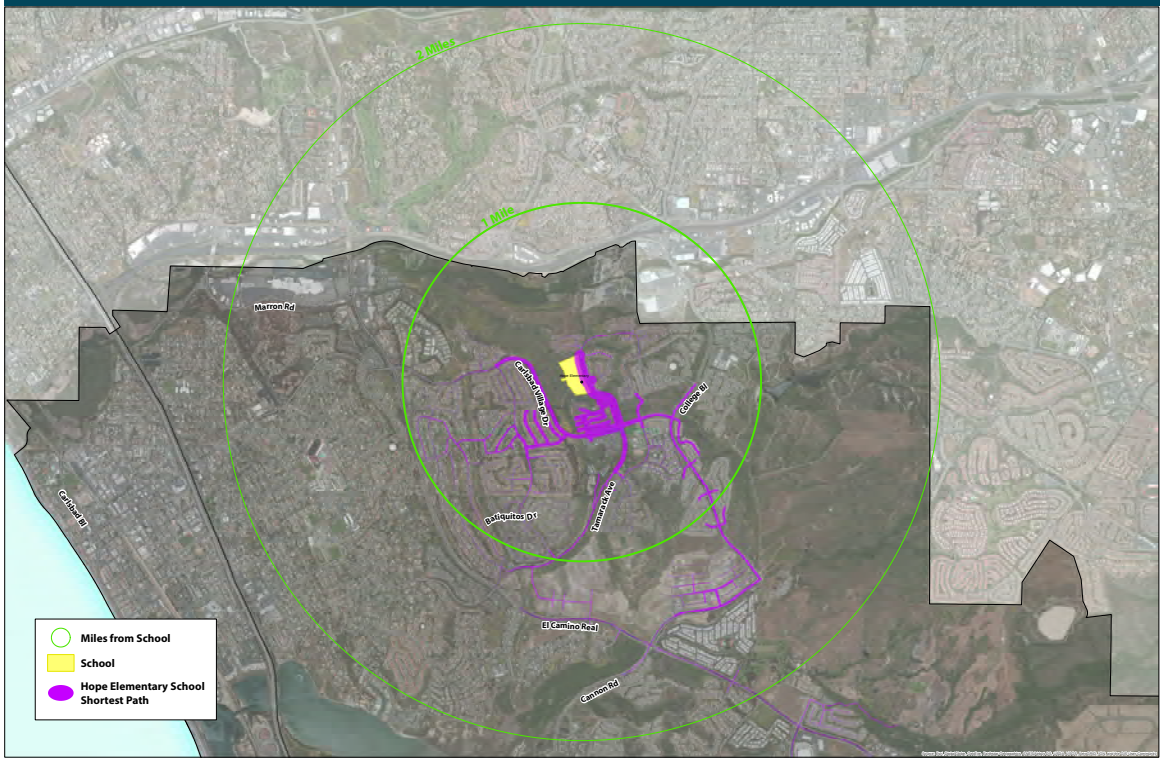


FIGURE 6-5 SHORTEST PATH TO SCHOOL ASSESSMENT



Additional Technical Analyses

Student Shortest Path Assessment – This analysis determines the roadway links within a study area with the highest probability of walking route usage based on the location of the school entrance (destination) and the distribution of households (origins) within an attendance boundary.

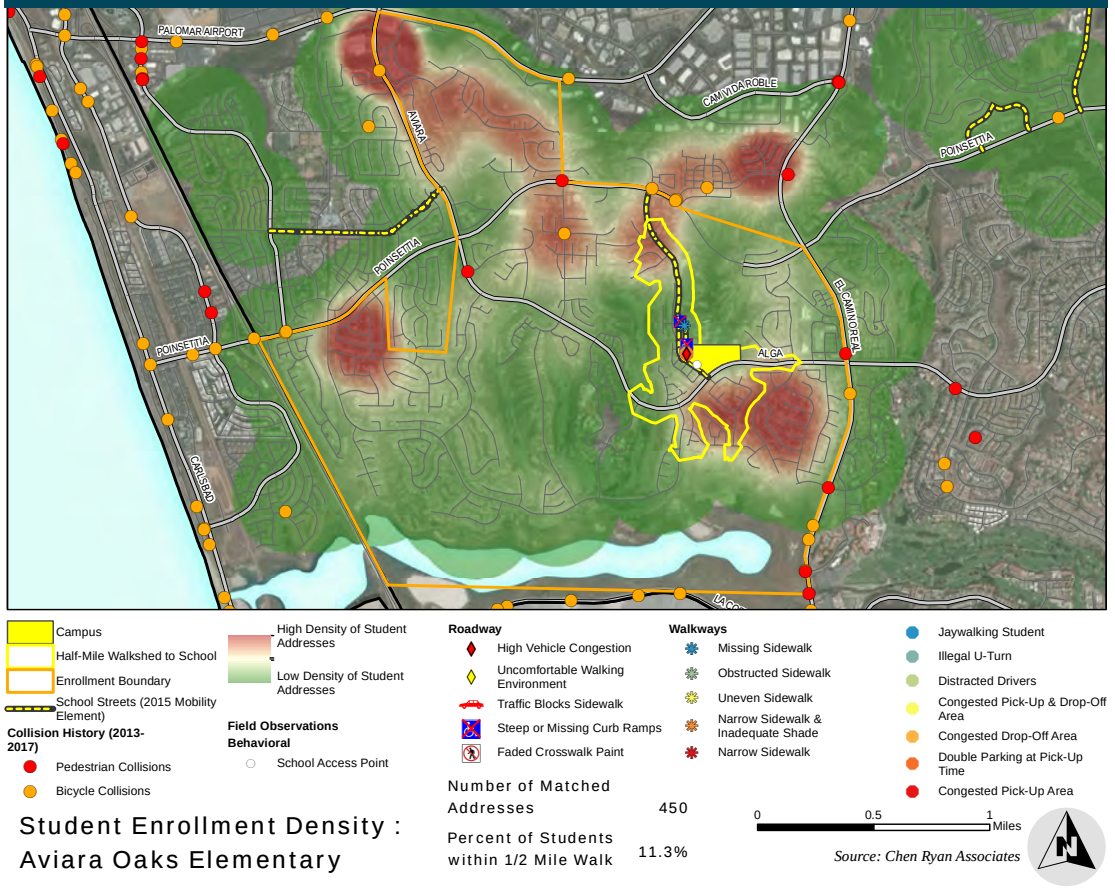
The shortest path routes are modeled from every origin to the destination in GIS using network analysis. The overlapping paths are aggregated and assigned to network links in order to determine each link's relative importance in the network. The number of overlapping paths can be used as a weighting mechanism to assign priority to certain locations for infrastructure improvement projects.

This type of analysis should be used in conjunction with field review to account for factors in the roadway environment not related to shortest paths that may affect student route choices. Figure 6-5 shows an example of a shortest path assessment using line thickness to indicate more important roadway connections for student travel to a nearby school.

Student Address Pairing – Anonymous student address data from school districts was utilized to generate heat maps of current residential locations. This approach helps City and school district staff tailor SRTS infrastructure and non-infrastructure recommendations specific to each school's population. Schools with a large percentage of students living a mile or less from school will have a different set of needs than those living further away. Additional insights can be developed by comparing the location of students to the roadway network required to reach their respective campuses, and roadway classifications can be adjusted accordingly. Figure 6-6 shows the density of school children's residential location along with walk audit results.

School Children Residential Density maps for 15 of the 20 Carlsbad schools are provided in Appendix J of this Plan. Certain schools did not provide sufficient data for the school children residential density based on various factors, such as schools being located outside the City of Carlsbad. For example, La Costa Canyon High School is located in the City of Encinitas.

FIGURE 6-6 SCHOOL CHILDREN RESIDENTIAL DENSITY



Source: Chen Ryan Associates

SRTS PROGRAM STRUCTURE, OPERATIONS, AND COORDINATION

Safe Routes to School (SRTS) is an approach that promotes walking and bicycling to school through infrastructure improvements, enforcement, tools, safety education, and incentives to encourage walking and bicycling to school. Establishing a formal program structure with identified responsibilities for various partners is a key component of an effective and sustainable Safe Routes to School Program. This involves determining which organization or agency will take the lead, who will be involved in making program decisions, and how coordination will occur between different groups working on different components of the program. The City of Carlsbad and the Carlsbad Unified School District have an opportunity to collaborate on various activities and establish a formal program structure.

Recommended Strategies and Actions for Year 1:

1. Identify an initial lead that will be responsible for guiding coordination of the Safe Routes to School activities, outreaching to schools and community organizations, and coordinating volunteers or obtaining other resources as needed. The person designated to initially lead the SRTS effort may be an existing City staff member who has capacity for the additional job duties or may require hiring a Safe Routes to School Coordinator.

2. Identify the potential scope of work for the SRTS project based on recommendations in the Sustainable Mobility Plan and survey data collected from the Cool Rides Carpool Pilot Program. SRTS focuses on six main strategies: Education, Encouragement, Evaluation, Empowerment, Engineering, and Equity. Potential projects include but are not limited to;

a. Walk audits

b. School site assessments

c. Parent surveys

d. Community events and National SRTS events

e. SRTS Champion training and education

f. Training and marketing materials

3. Identify initial funding needs for Safe Routes to School programmatic activities (staffing, events, materials, etc.) and pursue grants, donations, or other funding support.

4. Create informational materials about the program that could be distributed to community members and families to recruit additional volunteers and program champions. Include a menu of options that schools can undertake.

5.a) Outreach to school principals and parent groups to generate interest in participating in initial activities at one to two target schools. Outreach to both public schools and charter schools. Consider initial outreach to schools that participated in the Cool Rides Carpooling Pilot Program, or that have been engaged in other activities such as walk audits, Walk and Bike to School day, or pop up events.

b) Contact schools to let them know Safe Routes to School Coordinator is available for assistance. Wait for schools to contact City.

6. Establish a Safe Routes to School task force or committee to plan and provide input on program development. Recruit members from the City, Carlsbad Unified School District, individual schools, parent groups and community organizations. Meet bi-monthly or quarterly as program momentum is built. Refer to Building Momentum for Safe Routes to School for additional information on creating a taskforce, including sample materials such as an invitation letter.

Recommended Strategies and Actions for Years 2 to 5:

7. Expand outreach and program to additional schools as interest grows.

8. Conduct outreach on Safe Routes to School to school PTAs, community groups, etc.

9. Schedule regular trainings for family members, school staff, and other volunteers and champions on implementing Safe Routes to School activities.

10. Include Safe Routes to School messaging and resources on the city and school district webpages. Refer to Safe Routes to School Messaging for Pros for sample webpage content. Key messages are also available in Spanish.

11. As the program expands across multiple schools, assess staffing and determine need and ability to establish a part-time or full-time paid Safe Routes to School coordinator position; explore additional funding as needed.

TRANSPORTATION DEMAND MANAGEMENT

TDM Strategies

TDM strategies encompass a range of services, infrastructure improvements, subsidies, education, and parking management strategies aimed at reducing both vehicle trips and vehicle miles traveled. They can be implemented at the property/employer level or at the city or district/neighborhood level. Successful TDM strategies are most effective if they are tailored towards the available transportation infrastructure, land use mix, urban design, and demographics. The strategies below illustrate the different types and range of strategies available but do not constitute an inclusive list.

Services

Services include strategies that provide new or enhanced transportation options to the community, such as the provision of carshare, bikeshare or scootershare; shuttles, on-demand microtransit, or new transit routes. They are often provided as public-private partnerships.

Infrastructure/Amenities

In the context of TDM, infrastructure strategies typically describe on-site or near-site improvements that facilitate the use of sustainable transportation. They can include public or secure bike parking, pedestrian or bicycle connections, curb management strategies, or transit stop enhancements.

Subsidies/Incentives

Subsidies refer to subsidies or incentives available to promote the use of sustainable transportation. They are typically provided directly to commuters by employers, but can also be offered by property managers, developers, transportation management associations, or local or regional governments. Examples include transit pass subsidies, vanpool subsidies, and membership subsidies or discounts for carshare, bikeshare or scootershare systems. Also included in this category are one-time financial incentives, such as a limited number of free transit rides or the chance to win prizes for using sustainable modes of transportation. Subsidies can also be made available to providers of transportation services to ensure service availability.

Policies

Policies are typically employer-based and include those that allow telework, alternative work schedules, and flexible arrival and departure times.

Education

This category refers to all educational and promotional strategies, ranging from information kiosks and new employee/ resident welcome kits to general or segmented marketing campaigns.

Parking Management

Many parking strategies are effective in reducing vehicle trips, including preferential carpool/vanpool parking, unbundled parking (charging separately for parking spaces in addition to residential or office leases), dedicated carshare parking, or paid parking.

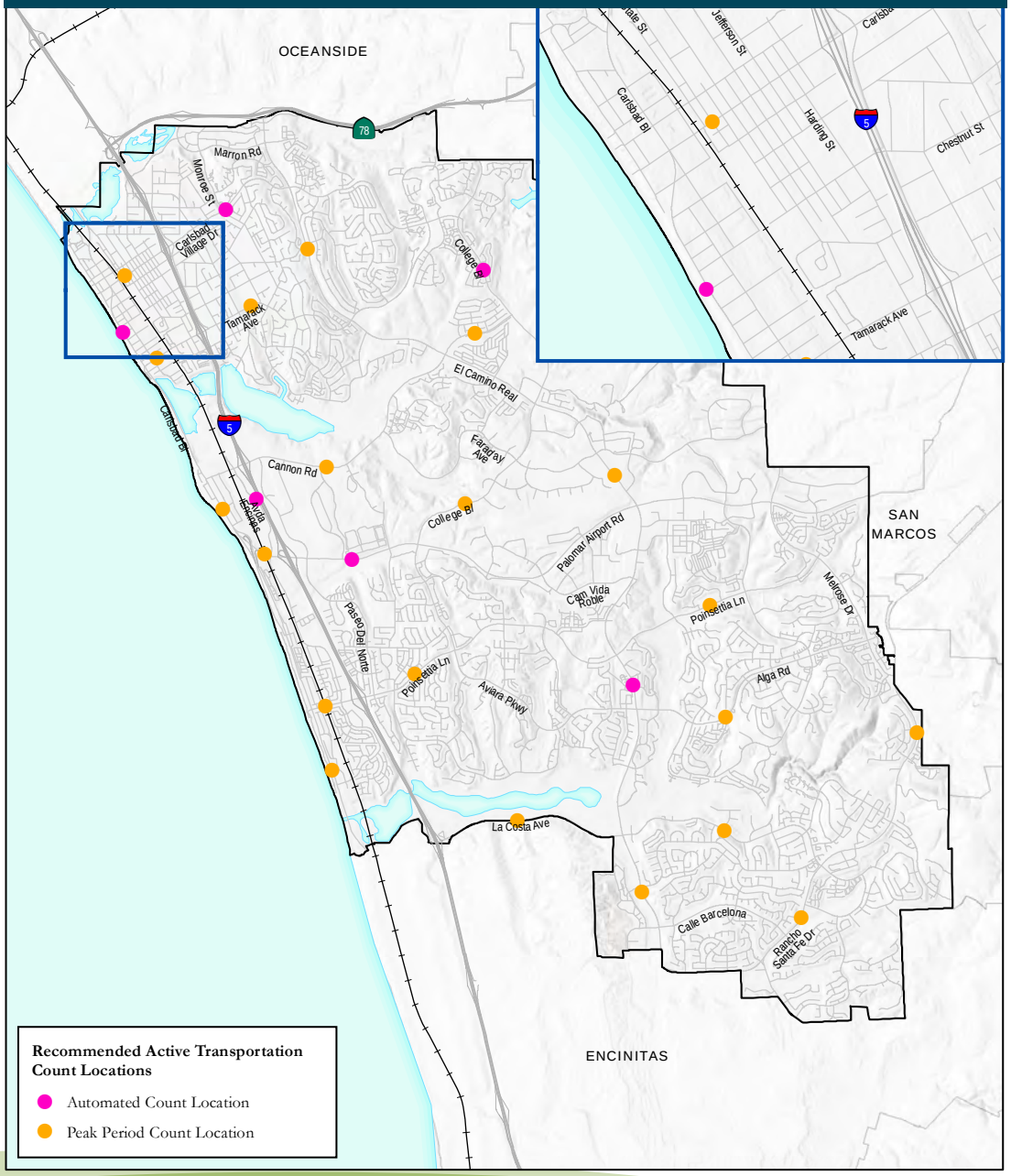
TDM Ordinance Passage

The City Council passed a TDM Ordinance in February 2019. This ordinance establishes a policy framework to help the City implement its trip reduction strategies outlined in this chapter and to encourage collaboration between private businesses and City and regional representatives.

The TDM Ordinance makes several critical recommendations, including implementation of the following:

- First and last mile strategies encompassing bike network connectivity, intersection treatments making the environment friendlier to cyclists, bike parking and accommodations at transit stations, bikeshare, wayfinding, and pedestrian network improvements
- Wayfinding for drivers
- Parking technology
- Kiss-and-ride curbs
- Satellite park-and-ride locations
- Shared parking
- Priority parking for carpools and van pools
- Permit parking
- Transit stop amenities
- Transit signal priority
- Carpool and vanpool promotion
- Rideshare
- Shuttles
- Carshare
- EV Charging

FIGURE 6-7 BICYCLE AND PEDESTRIAN COUNT LOCATIONS



SMP ACTIVE TRANSPORTATION MONITORING PROGRAM

The SMP Active Transportation Monitoring Program allows city staff, elected official, and community members to track changes in travel behavior over time and especially in relation to the implementation of active travel and transit infrastructure projects. The active travel monitoring framework establishes a data collection and analysis program that will enable tracking progress toward key goals related to VMT reduction, active travel and transit ridership encouragement, and by extension, GHG generated through automobile travel. The data will also enhance the success of grant applications by giving city staff the necessary information to estimate potential active travel and VMT reduction related to the implementation of future active transportation projects.

Performance Measures

Several performance measures are proposed for tracking over time in the City of Carlsbad, either yearly or every other year. The performance measures represent several important transportation system and travel behavior categories including demand, , safety, and connectivity.

Table 6-1 summarizes recommended data types, data collection methods, and preliminary cost estimates for the overall Carlsbad Active Transportation Monitoring Program.

Figure 6-7 displays the recommended bicycle and pedestrian count locations where repeat counting should occur every year or every other year, depending on funding. There are 12 proposed average daily count locations along roadway segments. The figure also shows 6 proposed locations for automated counting where equipment should be installed to collect continuous bicycle and pedestrian count data.

Table 6-1 Data Types, Methods, and Costs by Category

Category	Data Type	Recommended Data Collection Methods	Cost Range
Demand	Multimodal Traffic Volumes Counts	• Average daily bicycle, pedestrian and vehicle counts along roadway segments	• $450/count site • $9,000 for 20 sites • Staff hours for coordination
		• Continuous Bicycle and Pedestrian Counts	• $4,500/unit per site $500/unit per year for battery and modem subscription • Staff hours for coordination
	Commute Mode Share	• Economic Development Department to develop and administer a commute focused travel survey	• Staff hours
	Transit Ridership by Stop	• SANDAG, MTS and NCTD	• 20-30 hours staff time for obtaining data and analyzing
Safety	Bicycle and Pedestrian Collisions	• State of CA SWITRS, Crossroads	• 20-40 hours staff time for obtaining data and conducting analysis
	Bicycle and Pedestrian Collisions within 500 feet of Transit Stops	• City of Carlsbad, Crossroads	• 20-40 hours staff time for obtaining data and conducting analysis
Connectivity	Miles of Bicycle and Pedestrian Infrastructure Improvements	• State of CA SWITRS, Crossroads	• 20-40 hours staff time for obtaining data and conducting analysis
	Annual Funds Spent by Travel Mode	• City of Carlsbad	• 20-40 hours staff time for obtaining data and conducting analysis

Source: Chen Ryan Associates, 2020

IMPLEMENT A LOCAL ROADWAY SAFETY PLAN

Recent trends in multi-modal safety revolve around Vision Zero planning efforts, which create strategies to eliminate all traffic fatalities and severe injuries while increasing safety, health, and equitable mobility for all users. Vision Zero projects identify high-injury networks by analyzing collision data and assessing future risk through predictive forecasting. One of the key tenets of Vision Zero approaches is that people, whether walking, bicycling, or driving, do not always follow the rules of the road. Designers need to consider ways to design those improvements so that road users can more easily follow the rules of the road and that when they don't the results are less severe. Similarly, education and enforcement are needed to increase the efficacy of engineering treatments, especially new devices that may be less familiar to road users.

Caltrans has also introduced grants that can be geared toward Vision Zero planning known as the Local Roadway Safety Plan (LRSP). The City of Carlsbad has received a LRSP and intends to initiate the plan in 2021. The LRSP will provide the city with a framework for organizing stakeholders to identify, analyze, and prioritize roadway safety improvements throughout the city. The LRSP will be viewed as a living document that will be continually reviewed and updated every three to five years to reflect Carlsbad's changing needs and priorities.