Pedestrian and Bicyclist Safety
For Children in Ladera Ranch

By Michelle S. Kou

Client: Ladera Ranch Transportation Club
c/o Charles T. Gibson, President
35 Kilbannan Court
Ladera Ranch, CA 92694

Faculty Chair: Kristen Day
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Department of Planning, Policy, and Design
University of California, Irvine
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Executive Summary

Since the first traffic issues survey conducted by the Ladera Ranch Transportation Club in 2005, residents continue to express concern for the safety of pedestrians, especially children on the way to school. While there have not been any reported injuries to child pedestrians or bicyclists caused by a motor vehicle in Ladera Ranch, there is a continuing perception of risk. Accident records provided by the California Highway Patrol indicated that there have been one bicyclist injury and one pedestrian injury in Ladera Ranch since 2004. Statistics at the State and National levels, as well as from other cities within Orange County, indicate that child pedestrian and bicyclist safety is a problem that will likely develop if not addressed early on in this community. This report examines levels of perceived and actual safety for school-age pedestrians and bicyclists and recommends appropriate improvements.

Specific concerns were identified through observations around the Ladera Ranch elementary and middle schools during the peak traffic hours, interviews with school administrators, and a survey completed by parents in the community. Community-wide, motorists endanger the safety of children by speeding, failing to yield to pedestrians, and not paying attention. Secondary concerns include visibility problems caused by landscaping, children crossing streets unsafely, and parents parking or stopping in “No Stopping” zones. Specific concerns at each school vary in relation to adjacent site conditions.

Through the survey responses, the majority of parents expressed a desire for their children to walk or bicycle to school more often. Many choose not to allow their children to walk or bicycle due to traffic safety concerns, as well as for personal convenience. This situation mirrors findings of many national studies. Consequences of a reduced number of children walking and bicycling to school include increased traffic congestion and higher environmental impacts. Additionally, children do not gain the physical and emotional benefits associated with walking and bicycling.

The goals of improving child health and reducing environmental impacts are important and achievable. Safety for school-age pedestrian and bicyclists is a crucial ingredient needed to
increase community participation in these efforts. This study identifies communities exhibiting best practices in this regard. Drawing from these examples and research of leading authorities, this study makes the following recommendations to help Ladera Ranch strengthen its role as a supportive community for families and children:

**Recommendations for the Ladera Ranch Transportation Club:**
- Create a School Traffic Safety Subcommittee to oversee future studies, coordinate school traffic safety efforts, and monitor implementation and evaluation of programs.
- Assign duties to the School Traffic Safety Subcommittee to evaluate site conditions and programs every six months.

**Recommendations for the Ladera Ranch Town Manager:**
- Work with the appropriate school authorities to develop and disseminate traffic safety educational materials to drivers in the community.
- Work with Ladera Ranch Community Services [LARCS] and the appropriate school authorities to organize special events to encourage walking and bicycling.
- Work with the appropriate authorities to provide traffic safety educational materials to the companies utilizing the Covenant Hills construction entrance.

**Recommendations for the Ladera Ranch Maintenance Corporation:**
- Together with the County of Orange Resources and Development Management Department [RDMD] - Operations and Maintenance Division, create a schedule and assign duties to a liaison to regularly evaluate and resolve line of sight and visibility problems created by overgrown landscaping.

**Recommendations for the elementary and middle schools in Ladera Ranch:**
- Work with law enforcement agencies to provide in-classroom and large group traffic safety education to all students.
- Organize incentive programs for students walking or bicycling to school.
Executive Summary

- At Oso Grande Elementary school, work with the Town Manager to encourage parents to reduce the number of vehicles in the immediate vicinity.

**Recommendations for the California Highway Patrol and the Orange County Sheriff’s Department:**
- Increase traffic law enforcement in the areas adjacent to the schools, focusing specifically on speeding, drivers failing to yield to pedestrians, and parking violations.

**Recommendations for the County of Orange:**
- Install permanent vehicle speed feedback signs in conjunction with the school zone speed limit signs on Sienna Parkway and O’Neill Drive.
- Expedite the installation of in-pavement lighting at the crosswalk at Sienna Parkway and Flintridge Avenue to increase visibility of pedestrians to motorists.
- Investigate the installation of overhead signage with flashing lights in conjunction with the crosswalk at Sienna Parkway and Flintridge Avenue.
- Prioritize updating the 2003 study to provide an adult school crossing guard at the intersection of Second Street and Main Street because student enrollment has increased.
- Investigate the installation of curb extensions to reduce street width at the four intersections along Sellas Road North.
- Consider placing an adult school crossing guard at the intersection of Avendale Boulevard and Sellas Road North.
- Consider placing an additional adult school crossing guard at the intersection of Sienna Parkway and O’Neill Drive.
- Consider a ladder-type crosswalk with appropriate signage crossing Sienna Parkway at Covenant Hills Drive.
- Place additional signage directly in front of Oso Grande Elementary School and paint curb markings to reinforce the “No Stopping” area.
Chapter 1
Introduction

Project Statement

This report will address the problem of decreased levels of perceived and actual safety for school-age pedestrians and bicyclists in Ladera Ranch, California, focusing on the areas surrounding the elementary and middle schools. A resident survey performed by the Ladera Ranch Transportation Club in 2005 revealed concerns about pedestrian and child safety. Nationwide, studies have shown a decline in the number of children who bicycle or walk to school over the last three decades, partially due to traffic safety concerns. This report will focus on areas immediately adjacent to schools, as those areas tend to be used heavily by children with and without the supervision of their parents.

The report is conducted on behalf of the Ladera Ranch Transportation Club, a citizen advisory group representing the interests of all Ladera Ranch residents.

Objectives

- Document parent concerns in regards to the safety of school-age pedestrians and bicyclists.
- Provide recommendations to improve safety and increase the number of children who bicycle and walk to school, through education, enforcement, engineering, and encouragement strategies.
- Generate interest in the community and at the County level to address safety concerns in Ladera Ranch.
Project Significance

This project will ease community concerns and provide residents with implementation tools and opportunities to improve pedestrian and bicyclist safety.

- The residents of Ladera Ranch have expressed concern for the safety of pedestrians and children. In a survey conducted by the Ladera Ranch Transportation Club in 2005, residents identified school zones as a specific area of concern. During drop-off and pick-up hours, residents worry about traffic congestion, driver behavior, and pedestrian and child safety (Gibson & Blugrind, 2006). Preliminary results from a follow-up survey by the Transportation Club in January 2007 indicate continuing concerns about school zones, including pedestrian safety (D. Blugrind, personal communication, February 20, 2007).

- Formal documentation of community concerns will allow for a stronger presentation to the County for support. To date, the only formal documentation of community concerns in regards to traffic and transportation is the survey completed in 2005 (an updated survey was conducted in early 2007). Individuals have continuously contacted the Ladera Ranch Transportation Club with their concerns since its inception, but the piecemeal requests have not carried much weight in persuading the County to take action.

- Creating a list of improvements and programs will allow residents to focus on those items that are most critical and most likely to be implemented short-term. The County of Orange, like many government entities, has limited resources in terms of personnel and funding available to respond to community requests for specific studies. By identifying specific problems and locations, the residents will be more prepared to ask the County to study the issues of highest concern. The residents will also be better informed of the possible solutions and the feasibilities of the solutions.
Chapter 1. Introduction

- The master planning and ideals behind Ladera Ranch allow for unique opportunities to implement walking and bicycling promotion programs. The community encourages active living, advertising “unique villages and intimate neighborhoods woven together by a network of trails, parks, and paseos” (Ladera Ranch, 2005). Ladera Ranch is also home to Terramor, one of the nation's largest “green” residential villages, and promotes environmentally friendly practices including alternative modes of transportation (Ladera Ranch, 2005).

- Some of the traditional barriers to walking and bicycling to school, such as distance and weather, are not present in Ladera Ranch, allowing the community to focus on traffic safety issues. The schools in Ladera Ranch are located along the central spine of the community. Many students live within a quarter to a half mile from the school and the weather in Ladera Ranch is very mild.

This project will help increase child safety and health and will increase the number of children who walk or bicycle to school.

- Children who bicycle or walk to school benefit physically and emotionally. One quarter to one third of California children are overweight or at risk of becoming overweight (Surface Transportation Policy Program [STPP], 2003). Walking or bicycling to school can ensure that children are getting adequate amounts of exercise each day, reducing the risk for obesity. Researchers at the University of Pittsburgh School of Medicine found that “‘lifestyle’ exercise such as walking to school has an even greater impact on weight loss among children than aerobic exercise” (STPP, 2003). Active children also perform better in school and are more capable of handling difficult decisions and anxiety. A study done by the California Department of Education found a “clear relationship between academic achievement and physical fitness amongst public school students” (STPP, 2003).
• Nationwide, lack of safety is one of the main reasons why parents do not allow their children to walk or bike to school. In the 1999 Health Styles Survey, 40% of all respondents listed traffic danger as a barrier to walking or bicycling to school (STPP, 2003). In 2001, children were involved in more than one third of all pedestrian-vehicle collisions in California. In that same year, there were 363 child pedestrian accidents in Orange County alone (STPP, 2003).

• Formal bicycling and walking safety and encouragement programs have been successful in increasing the number of children who walk and bicycle to school. The number of students who walk or bicycle to school has declined significantly over the last thirty years. In 1969, the National Personal Transportation Survey showed that 42% of children in the United States ages five to eighteen years walked or bicycled to school. The 2001 National Household Transportation Survey showed that this number has decreased to 16% of children (Centers for Disease Control [CDC], 2006). In the first year after Marin County implemented its Safe Routes to School program, there was a 64% increase in the number of students who walked to school as well as a 114% increase in the number of students who bicycled to school (Staunton, Hubsmith & Kallins, 2003).

This project will also help reduce traffic congestion and benefit the environment.

• Reducing the number of children driven to school reduces traffic congestion—another concern of Ladera Ranch residents. Trips to school can add 20 to 30% to the traffic volume during the morning commute hours (Center for Health Training, 2004). Married mothers of school-age children drive an average of 87 minutes each day (STPP, 2003) and children spend an average of 45 minutes a day in the car (CDC, 2006). Walking or bicycling to school can reduce the number of cars on the road, allowing for those who must drive to experience less traffic.
• Reducing the number of children being driven to school benefits the environment. Automobiles are a large producer of carbon dioxide, contributing to the high amounts of smog in California. The amount of impervious surfaces created by roads and parking lots used to accommodate these cars negatively affects our water quality (Center for Health Training, 2004). Reducing the number of trips made by automobile reduces these environmental hazards.

By studying the conditions and concerns specific to Ladera Ranch, this project will assist the residents, school administrators, and government officials in understanding the implications of reduced child pedestrian and bicyclist safety on the community. The tools provided in this report will allow the community to improve safety conditions, as well as gain the benefits of increased walking and bicycling as a mode of transportation.
Chapter 2
Background: Why do walking and bicycling matter?

Children Gain Physical and Emotional Benefits from Walking or Bicycling to School

Many of the health problems in the United States are caused by the sedentary lifestyles we have adopted. Children are likely to develop poor exercise habits early on that, along with poor nutritional habits, contribute to health problems. According to the Centers for Disease Control, 13% of children in the United States were overweight in 2001. This is up from only 4% in the 1960’s (Center for Health Training, 2004). In California, 25 to 33% of children are either overweight or at risk of becoming overweight (STPP, 2003). The 1996 Surgeon General’s Report on Physical Activity and Health showed that over half of American youths ages 12 to 21 years are not vigorously active on a regular basis and 14% of youths report no recent physical activity (CDC, 1999).

Walking or bicycling to school is an effective way to make sure children get an adequate amount of daily exercise. According to Dr. Joann Manson, Chief of Preventative Medicine at Harvard’s Brigham and Women’s Hospital, “Regular physical activity is probably as close to a magic bullet as we will come in modern medicine… If everyone in the United States were to walk briskly 30 minutes a day, we could cut the incidence of many chronic diseases 30 to 40%” (STPP, 2003, p. 33). Walking and bicycling are not only effective in terms of preventing diseases such as obesity; they are also easy to motivate people to engage in on a regular basis. Exercising at the gym and through sports has barriers in terms of cost, time, and weather. Walking and bicycling are “straightforward, cheap, and [have] more widely available routes” (Tolley, 1997, p. 23). Walking or bicycling to school has a functional role with minimal self-motivation required (Tolley, 1997). If children are conditioned at a young age to walk or bicycle to get places, they may be more likely to continue these habits into adulthood.
Walking or bicycling to school can also have positive effects on the non-physical development of children. A recent study by the California Department of Education found a clear relationship between academic achievement and physical fitness amongst public school students (STPP, 2003). Children who walk or bicycle on a regular basis also have faster rates of cognitive development and keener observation skills than those who rarely walk or bicycle (STPP, 2003). Studies have shown that children can gain independent thinking and reasoning skills, self-esteem, and a sense of responsibility by being able to travel in their neighborhoods unsupervised. Children who are allowed to explore their neighborhoods without parental supervision are able to meet a larger variety of people and encounter a wider array of situations. Through these interactions and experiences, they are able to see their environment more thoroughly (Engwicht, 1993). The ability of children to make decisions and act independently is diminished by being driven around in a car (Engwicht, 1993). Providing opportunities such as walking or bicycling to school allows for “the acquisition of progressively more personal autonomy through greater independent mobility [which is] an aspect of ‘growing up.’ It promotes self-esteem in children by permitting them to do things on their own” (Hillman et al., 1990, p. 77).

Reduced Traffic Congestion and Fewer Impacts on the Environment

Walking or bicycling to school reduces the time children spend in cars. Nationwide, children spend an average of 45 minutes a day in a car (STPP, 2003). Married moms of school-age children spend an average of 87 minutes each day driving; single moms spend more than 94 minutes each day (STPP, 2003). According to the United States Department of Agriculture, in 2002, two-parent families in the Western States spent more than $13 billion on children’s transportation, over twice what was spent on children’s healthcare (STPP, 2003). The trip to and from school is a component of every school-child’s day. By eliminating the need for children to be driven, we can reduce the time and money spent on the road.

Increasing walking and bicycling can also reduce the total number of cars on the road. 56% of respondents to an Orange County survey in 2003 said traffic congestion is a “big problem” and 13% said traffic and transportation is the most important issue facing Orange
Chapter 2. Background: Why do walking and bicycling matter?

County today (Public Policy Institute of California, 2003). Part of the traffic problem is caused by people driving their children to school. Studies in Marin County showed that 21 to 27% of morning traffic is caused by parents driving their children to school (Safe Routes to School, n.d.). In Ladera Ranch, respondents to the 2005 Traffic Survey noted that congestion around the schools during peak commute hours was a problem (Gibson & Blugrind, 2006). Reducing the dependency on the private auto for school transportation is a step in reducing the number of cars used overall.

The number of cars on the road also affects the environment. From 1970 to 1999, carbon dioxide increased by 56% in the United States, partially due to the rising use of automobiles (Center for Health Training, 2004). According to the California 2000 Project, auto emissions in the state are the largest cause of pollution (STPP, 2003). Auto emissions may also be causing the increase in childhood asthma cases. In the United States, over 3.8 million children are affected by asthma (Center for Health Training, 2004). In California, the number of people with asthma has increased 160% since 1980 (STPP, 2003). Reducing the number of cars on the road is a step in reversing the negative impact we have had on the environment and the negative consequences to our health.

Walking and Bicycling to School are Declining

Unsafe conditions, among other concerns, have led to a decrease in the number of children who walk or bicycle to school. Comparing the results of the 1969 National Personal Transportation Survey to the 2001 National Household Transportation Survey, the percentage of United States students ages five to eighteen that bicycled or walked to school decreased from 42% to 16% in a period of 32 years (CDC, 2006). The use of private automobiles for school transit increased from 14% in 1969 to 46% in 2001 (CDC, 2006). We can look at other countries for hope though. In the United Kingdom, walking and bicycling to school has steadily increased subsequent to a nationwide focus on child pedestrian and bicyclist safety (Center for Health Training, 2004).
Safety is not the only reason preventing parents from allowing their children to walk or bicycle to school, but it is an important one. Respondents to the 1999 Health Styles Survey indicated traffic danger as the second highest reason for not allowing their children to walk or bicycle to school. Other barriers are shown in Figure 1.

**Figure 1.** 1999 Health Styles Survey- Barriers to Walking and Bicycling to School

Source: Surface Transportation Policy Project, 2003

Other studies have shown that a child’s reliance on the private automobile is determined by the parent’s worry that the child is unreliable (Engwicht, 1993), by cutbacks in school bus service (STPP, 2003), or by the parents feeling that the only time they have with their children is in the car (Center for Health Training, 2004).

**Safety has Decreased for Child Pedestrians and Bicyclists at the National, State, and Local Levels**

There have not been any reported injuries to child pedestrians or bicyclists caused by a motor vehicle in Ladera Ranch, but the community is still fairly new and, generally, pedestrian and bicyclist accidents are relatively rare events. Statistics at the State and National levels, as well as from other cities within Orange County, indicate that child pedestrian and bicyclist safety is a problem that will likely develop if not addressed early on.
In 2005, 339 pedestrian fatalities nationwide (7% of total pedestrian fatalities) were children under the age of fourteen (National Highway Traffic Safety Administration [NHTSA], 2006). In that same year, 25% of the pedestrian injuries reported were to children (NHTSA, 2006). Child bicyclist fatalities numbered 126, or 16% of all bicyclist fatalities (NHTSA, 2006). The number of child pedestrian and bicyclist fatalities has decreased since 1995 when there were 695 pedestrian fatalities and 257 bicyclist fatalities (NHTSA, 2006). The decrease in fatalities should not be seen as an indicator that roads have become safer in the last decade. Parents avoid letting their children encounter unsafe situations and therefore will avoid letting their children walk or bicycle altogether if it seems too dangerous, reducing the number of potential victims on the road (Hillman et. al., 1990).

In California and in Orange County, the number of child pedestrian and bicyclist accidents is still very high. According to the California Department of Health Services, pedestrian-vehicle collisions are the third leading cause of fatal injuries and sixth leading cause of hospitalized injuries for children under the age of eighteen (STPP, 2003). Nearly 5,000 child pedestrians are injured in California each year (STTP, 2003). In 2001, $138 million was spent on medical care for child victims of traffic accidents (STPP, 2003). In Orange County, the Statewide Integrated Traffic Records System Report for 2001 showed that 363 or 38.4% of all pedestrian accidents involved children (STPP, 2003).

In Ladera Ranch, there has been one reported bicyclist injury and one pedestrian injury caused by a motor vehicle since 2004. On November 1, 2005, at 5:30 p.m. at the intersection of Crown Valley Parkway and O’Neill Drive, a bicyclist was struck by a vehicle and there was at least one person injured (the party count was two). The Probable Cause Factor was “Stop Sign/Sig” - meaning driver failed to obey a traffic control device (California Highway Patrol [CHP], 2007). On January 20, 2004 at 6:00 pm, a motor vehicle struck and injured at least one pedestrian (the party count was two) at the intersection of Maybeck and Crown Valley Parkway. The Probable Cause Factor was “Strtng/Bckng” - meaning the driver was either accelerating or backing up (CHP, 2007). Information on the victims’ ages was not available, but there are no records of media coverage that indicate the victims were children.
Chapter 3
Review of Best Practices

Communities have realized the need for pedestrian and bicyclist safety plans to increase alternative forms of transportation. These plans are often integrated into the city or county’s General Plan, and typically include design guidelines, assessment standards, and implementation strategies to create safer and more inviting communities for pedestrians and bicyclists. The areas around schools must address the same problems as the other areas frequented by pedestrians and bicyclists. Additional concerns arise due to concentrated traffic volumes, as well as the specific needs of children. Communities either address these concerns near schools in their pedestrian and bicyclist plans or as a separate document, typically identified as a Safe Routes to School program.

Communities in the United States established various Safe Routes to School programs and standards independently until the first federally funded national program began in 2005 (Pedestrian and Bicycle Information Center, n.d.). Before the national program was implemented, two demonstration programs were created as national models- one in Marin County, California and one in Arlington, Massachusetts (Center for Health Training, 2004). Marin County remains one of the most comprehensive and innovative programs in the country and has been a model for many other Safe Routes to School programs. Community groups, as well as state and federal agencies, have published many school traffic safety toolkits and program guides. Each guide outlines ways to evaluate needs and prepare safety programs. Components of each program typically fall into the following five categories:

- Engineering- Changes to the physical design including crosswalks, speed limits, and traffic calming devices.
- Education- Programs in the schools and the community to educate pedestrians, bicyclists, and motorists on safe practices.
- Enforcement- Standards and programs used to enforce traffic laws.
- Encouragement- Activities and events used to promote walking and bicycling to school.
• Evaluation- Ways for the community to monitor progress and assess the effectiveness of the programs.

Many communities have established very successful pedestrian and bicyclist safety programs. The following case studies illustrate programs implemented in communities with physical design and demographics similar to Ladera Ranch.

**Case Study: Odense, Denmark**

Between 1955 and 1971, Denmark had the highest rate of child mortality due to road accidents, in Western Europe (Tolley, 1997). As a response to safety concerns, the Safe Routes to School program was developed in Odense. Activities included having children map routes to school and social activities. They were asked to mark those areas they felt were dangerous. The local government met with parents and teachers to facilitate improvements to the roads along the identified routes. Since 1981, 265 proposals for engineering improvements have been generated from the community input. Of those, 170 have been implemented (Tolley, 1997). Improvements include establishing slow speed areas, road narrowing, traffic islands, and separate foot and bicycle paths (see Figure 2) (Tolley, 1997). Non-engineering improvements include establishing a nationwide traffic club run by the Danish Road Safety Council (Tolley, 1997) and introducing five to six road safety lessons per year into the school curriculum (Tolley, 1997).

**Figure 2. Recessed Bike Path**

Source: Odense Cycle City, 2007

Results:

• 41% of children in Odense walk to school and 21% bicycle to school (Center for Health Training, 2004).
• From 1994 to 1999, crashes involving children walking or bicycling to school decreased by 16% (Center for Health Training, 2004).

Case Study: Arlington, Massachusetts

The demonstration program in Arlington was created by the National Park Service’s Rivers and Trails Program and WalkBoston. The primary goals of the Safe Routes to School program were to increase the number of children who walked or bicycled to school and to reduce the number of children who were driven by private auto (WalkBoston, 2003). A large number of children in Arlington live within walking distance of school, but prior to the program half of the students in the participating schools were driven by private car (WalkBoston, 2003). Two elementary schools and one middle school participated in the first year (Center for Health Training, 2004).

Program Components:
• Walk to School days- Promotion of all-school participation on designated days. See Figure 3.
• Six newsletters used to promote their efforts and generate parent interest.
• Hiring part-time Safe Routes to School coordinators.
• Working with town councils to make routes safer.
  (Center for Health Training, 2004)

Results:
• Children walking to school increased from 42% to 56% at the elementary schools.
• Children walking to school increased from 19% to 24% at the middle schools.
• Over 150 more students walked to school at the end of the program.
  (Center for Health Training, 2004)
Arlington also noted a few of the lessons they learned along the way, including:

- Funding for staff is crucial. Parent volunteers tend to burnout.
- There must be a sustained effort for the program to be successful.
- Programs must be age appropriate. Middle school children are less interested in walk-to-school incentives than elementary school children.

(Center for Health Training, 2004)

**Case Study: Marin County, California**

The Marin County Safe Routes to School Program incorporates a combination of different solutions with multiple approaches. The program has been very successful and has influenced many other programs. The goals of the Marin County program are to:

- Reduce traffic congestion around schools.
- Increase physical activity for children.
- Foster a healthier lifestyle for the whole family.
- Create streets and neighborhoods that encourage alternative modes of transportation.
- Improve air quality and contribute to a cleaner environment.

(Nelson/Nygaard Consulting Associates, 2005)

**Program Components:**

- **Engineering**- The Safe Routes to School Program pairs a traffic engineer with groups of parents, county officials,

  ![Figure 4. Safe Routes to School parent meeting](source: Marin County Bicycle Coalition, 2007)
and community members to identify needs and solutions (Nelson/Nygaard Consulting Associates, 2005).

- Education- The primary success of the Marin County education program is that it is fully integrated into the curriculum. Coursework is mostly offered at the second, fourth, sixth, and high school levels (Nelson/Nygaard Consulting Associates, 2005). Special school assemblies, such as one titled “Yikes,” focus on road safety (Nelson/Nygaard Consulting Associates, 2005). In 2004 and 2005, Mill Valley Middle School also participated in a Bicycle and Pedestrian Education Program developed from a nationwide study of best practices. This program integrated hands-on lessons into the physical education classes (Nelson/Nygaard Consulting Associates, 2005).

- Encouragement- Marin County uses extensive contests and activities to encourage children to bicycle and walk. These events include:
  - Walk and Bike Across America- Classrooms or entire schools track how far they have walked or bicycled and “travel” to different destinations on a map.
  - Walk and Roll to School Days- Promotion of all-school participation on designated days.
  - Ride and Seek Treasure Hunt- A community exploration event on bicycles.
  - Golden Sneaker Award- Prizes for the most participation by class.

(Nelson/Nygaard Consulting Associates, 2005)

Results:


- The Walk and Roll to School Days alone had up to 95% participation and at one school (Tam Valley), it was possible to have a “no drive time” zone during the morning commute (Nelson/Nygaard Consulting Associates, 2005).

- In the first year, the number of children who walked to school increased by 64%. Bicycling increased by 114% and carpooling increased by 91%. There was also a 39% decrease in private vehicle usage for school trips (Staunton, Hubsmith & Kallins, 2003).
Chapter 4
Background: Ladera Ranch

The Community of Ladera Ranch

Ladera Ranch is an unincorporated community located southeast of Mission Viejo in the County of Orange (see Figure 5). Ladera Ranch is a master-planned community, developed by Rancho Mission Viejo, LLC. Home sales began in 1999 (Duncan, n.d.). As of December 2006, there were over 7,700 homes with approximately 23,000 residents (Ladera Ranch Maintenance Corporation [LARMAC], 2007). The remainder of the community will be completed within the next two years, with a total of approximately 8,100 homes (Duncan, n.d.). Ladera Ranch encompasses approximately 4,000 acres with 2,400 acres developed (LARMAC, 2007). The remaining acreage is open space. The community is organized in six villages and three districts, each with a distinct architectural style. A detailed street map of Ladera Ranch can be found in Appendix D.

Figure 5. Community Location Map

Source: YahooMaps, 2006
Ladera Ranch’s unique physical design promotes an active lifestyle, including walking and bicycling. Within the community there are five village clubhouses, seven major parks, 300 pocket parks, and a number of other specialized recreational facilities (Ladera Ranch Maintenance Corporation [LARMAC], 2006). Trails run throughout Ladera Ranch, providing destinations and paths that encourage walking and bicycling for recreational purposes. The community also promotes “green” practices, primarily in the village of Terramor, making it an excellent study subject for walking and bicycling as forms of non-recreational transportation. Ladera Ranch was designed with traffic calming measures such as roundabouts and curb extensions to reduce the likelihood of accidents and provide pedestrians with a sense of security.

Ladera Ranch features unique community-building opportunities including professionally organized activities, an intranet community called LaderaLife, and clubs which represent the residents’ interests. Two key organizations at the center of Ladera Ranch are the Ladera Ranch Maintenance Corporation (LARMAC) and Ladera Ranch Community Services (LARCS). LARMAC is the master homeowners’ association and maintains the community property and facilities. LARCS works side by side with LARMAC and has been described as the “heart” of the community (Ladera Ranch, n.d.). LARCS coordinates community programs and events. It has also assisted in forming almost 80 clubs, including the Ladera Ranch Transportation Club (LARMAC, 2006). These clubs provide social settings for residents to get to know one another, organize activities around their interests, and create a forum for residents to express their ideas and concerns.

The Ladera Ranch Transportation Club

The Ladera Ranch Transportation Club is a citizen advisory group run by resident volunteers and welcomes all interested members of the community. The Transportation Club was established as a forum to hear the concerns of residents regarding all aspects of transportation and traffic, including pedestrian and bicyclist safety. Through the Transportation Club, residents have been able to study and advocate for safety improvements. Recent improvements include additional crosswalks and crossing guards near
the schools and posting of speed limits on O’Neill, Roanoke, and Dorrance Drives. The Transportation Club receives the majority of resident concerns by e-mail or phone and directs the residents to the appropriate parties at the County of Orange. The Transportation Club also holds meetings to educate residents on transportation issues and to provide residents with direct access to outside persons such as County staff. Its mission statement is:

To assure the residents of Ladera Ranch realize the ideal of a parking, pedestrian, bicycle, electric cart, and family-friendly community while balancing safety, aesthetics, the environment, and traffic flow. This will be facilitated through ongoing study based on observations and information reported by the residents followed by communication with Ladera Boards, the Master Developer, Community Representatives, the California Highway Patrol, and the Orange County Traffic Committee.

(Ladera Ranch Transportation Club, n.d.)

In the fall of 2005, the Ladera Ranch Transportation Club initiated a survey of 100 residents to identify their concerns on a number of broad transportation and traffic issues (Gibson & Blugrind, 2006). Concern of the respondents included:

- a need for additional traffic law enforcement (top-ranked concern)
- parking
- pedestrian safety, and
- “numerous worries about traffic, congestion, [and] driver behavior” in the school zones (Gibson & Blugrind, 2006).

“Overall the residents [were] alarmed by aggressive driving—speeding and failure to yield right of way” (Gibson & Blugrind, 2006). The survey results suggest that the residents are concerned primarily with the irresponsible behavior of motorists in the community. The Transportation Club initiated another resident survey in January 2007. The preliminary results indicate continuing concerns about speeding, parking, problems in school zones, need for additional law enforcement, and pedestrian safety (D. Blugrind, personal communication, February 20, 2007).

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Regulation of the Roads within Ladera Ranch

The County of Orange oversees the public roads within Ladera Ranch. The Board of Supervisors decides on major traffic control issues such as speed limits based on recommendations by the County Traffic Committee and the County Roads Division staff. Private roads within Ladera Ranch are the responsibility of the developer and the homeowners’ association. The major roads adjacent to the schools are all controlled by the County.

The County of Orange established the Orange County Traffic Committee to “initiate studies and develop recommendations on traffic controls, among other things, to the County Board of Supervisors” (Gibson, 2006, p. 1), which then makes the final decision. The Orange County Traffic Committee is made up of representatives from:

- the Automobile Club of Southern California
- the California Highway Patrol
- the California Department of Transportation
- the County of Orange Traffic Engineering Staff
- the County of Orange Resources and Development Management Department (formerly the Environmental Management Agency)
- the School Districts (designated by the Board of Supervisors), and
- the Orange County Sheriff’s Department.

The County staff and the Traffic Committee’s recommendations are guided by laws and standards including those contained in:

- the California Vehicle Code
- the Orange County Traffic Manual
- the Orange County Traffic Code (Title 6)
- the Federal Manual on Uniform Traffic Control Devices [MUTCD], and
- the California Supplement to the MUTCD.
Traffic law enforcement in Ladera Ranch is provided by the California Highway Patrol (CHP) with the assistance of the Orange County Sheriff Department. According to Captain Jack Anderson of the Sheriff’s Department, the Sheriff Department’s role is “to support and enhance the CHP’s duties towards improving public safety in unincorporated areas in regards to traffic laws” (Duncan, 2006a). The community relied on a single CHP officer until January 2006 when a County ordinance was repealed to allow the Sheriff more involvement in traffic enforcement (Duncan, 2006a).

The Schools in Ladera Ranch

Within Ladera Ranch, there are three public elementary schools (kindergarten through fifth grades) and one middle school (sixth through eighth grades). There are also several preschools and one private school (Stoneybrooke Christian) that are not included in this report. The public schools are part of the Capistrano Unified School District. The schools included in this report are:

- Chaparral Elementary School
- Ladera Ranch Elementary School
- Ladera Ranch Middle School
- Oso Grande Elementary School

Chaparral Elementary was the first school in Ladera Ranch, opening in 2001. Ladera Ranch Elementary and Middle followed in 2003 and Oso Grande opened in 2005. While the other three schools have remained relatively stable in enrollment, Oso Grande recently increased its student population from 305 in 2005 to 520 in 2006 (Duncan, 2006b) and expects to grow significantly in the coming years.

The schools are all located along the central spine of the community. The main entrances to each are off of Sienna Parkway, one of the two north-south collector roads running the length of the community (see Figures 6 thru 9). School attendance boundaries for each school are shown on the maps in Appendix C. The areas around each school are primarily residential with some live-work units. There are no commercial areas adjacent to any of the
schools. Large community parks are adjacent to Chaparral Elementary and Ladera Ranch Elementary and Middle Schools. There is also a public library on the Ladera Ranch Elementary and Middle School campus. At each of these community facilities, parking is shared between the multiple uses.

**Figure 6. Location of Schools**

Source: YahooMaps, 2006
Chapter 4. Background: Ladera Ranch

**Figure 7.** Chaparral Elementary School

![Chaparral Elementary School](image1)

Source: Author

**Figure 8.** Ladera Ranch Elementary and Middle School

![Ladera Ranch Elementary and Middle School](image2)

Source: Author
Chapter 4. Background: Ladera Ranch

Figure 9. Oso Grande Elementary School

Source: Author
Chapter 5
Methods

This report identifies specific pedestrian and bicycle safety concerns around the Ladera Ranch schools and recommends appropriate improvements. The concerns were identified through interviews with school administrators, through a survey completed by parents in the community, and through observations of the behavior of pedestrians, bicyclists, and motorists around the schools during the peak drop-off and pick-up hours. A list of people who provided data for this report, along with their contact information, can be found in Appendix A.

Interviews with School Administrators

Interviews with the school administrators provided first-hand accounts of safety concerns, the specific behaviors that may cause these concerns, and feedback on feasibility of implementing educational and encouragement improvements. Two interviews were conducted. The first interview was with Jayne Martin, Principal at Oso Grande Elementary School. The other was with Monica Clem, Assistant Principal at Chaparral Elementary School and Interim Principal at Ladera Ranch Elementary School. Each interview lasted between a half hour and an hour. Questions were asked to determine the current modes of school transportation, what areas around the schools have safety concerns, and what walking/bicycling education and encouragement programs are offered by the schools. A list of questions used to guide the interviews can be found in Appendix A along with the study information sheet given to each interviewee. The school administrators provide a strong connection between the schools and the community-at-large. They are the most aware of reoccurring concerns, as brought to their attention by parents and through their own daily observations. The school administrators also provided information about potential programs as well as barriers to improvements and program implementation.
Chapter 5. Methods

The Parent Survey

The survey was used to determine how children currently get to school and the attitudes about children walking and bicycling to school. The survey was distributed to the parents at Chaparral and Ladera Ranch Elementary Schools at Parent Teacher Association [PTA] meetings and through the Principals’ email newsletters. Thirteen responses were received from Chaparral Elementary School parents. Forty-two responses were received from Ladera Ranch Elementary School parents. The survey was distributed at Ladera Ranch Middle School through the PTA email newsletter. Eleven responses were received. At Oso Grande Elementary School, the survey was distributed through the Principal’s school-wide e-mail newsletter. Thirty-five responses were received. Parents had the option of filling out a paper copy of the survey or an online version. All participants chose to fill out the online survey. Distribution of the survey was staggered over approximately three weeks. The parents were given approximately two weeks from initial contact to respond to the survey, with the entire collection process taking approximately one month.

The parents who accompany their children to and from school observe unsafe conditions on a daily basis and ultimately control how their children get to school. Parents were asked to identify specific streets and intersections that they feel are unsafe. The survey also asked why these areas are unsafe. A copy of the survey and the accompanying study information sheet can be found in Appendix A. The survey responses served as the primary of means of identifying specific concerns and level of concern.

Observations

Observations during peak drop-off and pick-up hours provided additional information on specific streets and intersections that are unsafe and what behaviors or design factors are the cause. Observations were completed over a two to three day period per school during the peak hours. Peak morning hours are approximately one half hour before school starts until the start-of-day bell. Peak afternoon hours are from approximately fifteen minutes before the dismissal bell until fifteen minutes after the end of the school day. Observations were
conducted by walking around the perimeters of the schools and taking written notes about
the behavior of drivers and children as well as the physical conditions adjacent to the site. A
site inventory worksheet (found in Appendix A) was used to document the physical
environment as well as behaviors. For example, the condition of the sidewalks, the visibility
of intersections, and the effectiveness of no-parking area markings were noted.

Data from Government Agencies

Existing data was obtained from government agencies to provide information about past
studies and findings, as well as the feasibility of potential improvements. Accident records
were obtained for 2005 and 2006 from the California Highway Patrol, Information Services
Unit. The records were used to identify reported accidents on the streets immediately
adjacent to the schools and at the intersections crossed frequently by students walking and
bicycling to school. Staff reports from previous crossing guard placement studies by the
County of Orange Traffic Engineering Division were obtained. These reports include
pedestrian and vehicle counts and observations done by County staff. The reports provided
information about mode of transportation, reported concerns, and what recommendations
were previously made to the Traffic Committee.

Analysis

Unsafe areas and behaviors that were mentioned during the interviews and surveys were
mapped and analyzed for potential improvements. The frequencies of each area noted as
unsafe were calculated from the survey responses at each school. Those areas that were
mentioned by many parents or that parents and school administrators emphasized are highly
disconcerting were further analyzed for potential improvements. For these areas, existing
conditions and behaviors noted by the interviewees, the parents, and through observations
were compared to the desirable (safe) conditions and behaviors.

For each area of concern, the reasons for unsafe conditions were used to see if the issue
would best be resolved through engineering improvements, educational programs, or law
enforcement programs and standards. For most situations, the solution needs to incorporate multiple approaches. The review of best practices and assistance manuals for Safe Routes to School programs stress the need for a comprehensive approach to addressing traffic safety concerns and declining levels of walking and bicycling to school. In each of the programs discussed in the review of best practices, engineering improvements were combined with education, encouragement, enforcement, and evaluation programs—making up the five E’s. State, federal, and local grant programs also stress that the solutions to pedestrian and bicyclist safety concerns must incorporate all the five E’s in order to be successful.

Providing Recommendations for Engineering Improvements

For engineering improvements, data from the County of Orange was used to compare recommended improvements to the warrants (minimum conditions, defined by the County, under which further consideration of a traffic control or crossing guard is appropriate) found in the Orange County Traffic Manual and the guidelines and standards found in the California Manual on Uniform Traffic Devices. If data was incomplete or out of date, areas for specific future studies were identified. The data was matched for the appropriate areas to see if warrants for improvements would likely be met. Besides the options available in the Orange County Traffic Manual for traffic controls, crosswalks, and crossing guards, more recent, innovative solutions were also considered based on documented experiences in other communities.

Providing Recommendations for Education, Encouragement, and Enforcement Programs

For concerns that may be resolved through education and/or law enforcement programs, exemplary Safe Routes to School programs were studied to determine what would be most feasible and effective in Ladera Ranch. Model Safe Routes to School programs were also used to provide recommendations for encouragement programs. The recommendations focus on programs that have been most effective in communities similar to Ladera Ranch in
physical layout and demographics. Again, a combination of separate components will be needed to create a strong safety program.

**Providing Recommendations for Implementation and Evaluation Methods**

The recommendations also include implementation and evaluation methods. Barriers to implementing any improvements are identified, as well as the appropriate authorities to implement the programs. Finally, suggestions for funding sources are provided, including local businesses, government grants, and community groups.
Chapter 6
Findings: Chaparral Elementary School

School Information

Chaparral Elementary, a kindergarten through fifth grade school, is located at 29001 Sienna Parkway. Approximately 850 students are currently enrolled at the school. The bell schedule is as follows:

Grades 1-5: 7:45 a.m. to 2:05 p.m.
           7:45 a.m. to 12:50 p.m. (Wednesdays only)
Kindergarten: early birds: 7:45 a.m. to 11:15 a.m.
               7:45 a.m. to 10:45 a.m. (Wednesdays only)
               late owls: 9:30 a.m. to 1:00 p.m.
               9:15 a.m. to 12:15 p.m. (Wednesdays only)

Current Conditions and Programs

Education programs:
A school-wide “safety day” is conducted in the fall by law enforcement officials and the fire department. A bicycle rodeo is included in the event.

Encouragement programs:
None.

Traffic controls: (See Figure 10 for locations)
Ladder-type crosswalk and crossing guard at Sienna Parkway and Second Street.
Ladder-type crosswalk and crossing guard at Sienna Parkway and Flintridge Avenue.
(Note: An in-pavement lighted crosswalk is scheduled to be installed across Sienna Parkway in 2008.)
Four-way stop sign at Second Street and Main Street.
Stop signs on minor streets at the intersections of major streets.
Chapter 6. Findings: Chaparral Elementary School

Traffic calming techniques:
- Roundabout at Sienna Parkway and Windmill Avenue.
- Curb extensions at the intersections along Main Street.

Loading/ Unloading Zones:
- Main zone in parking lot (monitored by two school employees).
- Secondary zone along Second Street (monitored by one school employee).
- Bus loading zone accessed from Sienna Parkway. This area is utilized by vans for before and after school care programs.

**Figure 10.** Current Traffic Controls at Chaparral Elementary

![Map of Chaparral Elementary School traffic controls]

Source: Author
Chapter 6. Findings: Chaparral Elementary School

Background on Survey Respondents

Thirteen parents responded to the survey at Chaparral Elementary School. Five of the responses were received from residents of the Flintridge Village within Ladera Ranch, and five were received from residents of the Oak Knoll Village. Some responses were received from residents of the Bridgepark District and Avendale Village. Respondents were evenly distributed among parents of various grade levels.

Current Modes of Travel and Attitudes about Walking and Bicycling

Survey responses indicate that almost equal numbers of students are driven to and from school in a carpool, driven to and from school in a non-carpool, or walk with an adult. Driving the child to school or walking with an adult are the most common forms of commute to school in the morning while carpooling is the most common form of travel from school in the afternoon. Nine of the survey respondents said that they would like their children to walk or bicycle to school more often.

The survey asked parents who indicated that their child is driven to or from school to provide a reason or reasons why. The survey allowed parents to choose multiple reasons. Nine parents responded to this question. Most respondents indicated more than one reason. Two drop off or pick up their child on the way to or from work. Two indicated that they are in a hurry. Two parents are concerned about traffic safety. Others indicated that they are concerned about crime, the school is too far, or a disability prevents a family member from walking or bicycling. One parent indicated that the child's backpack is too heavy to carry while walking or bicycling.

The interview with Assistant Principal Clem and observations by the researcher noted that there are a large number of children walking to school with an adult or in groups. The researcher observed a large number of students utilizing the Sienna Botanica trail paralleling Sienna Parkway to the west. Many students also cross Sienna Parkway at Flintridge Avenue and some walk from the east side of the school along Second Avenue.
Perceptions of Traffic Safety

The majority of survey respondents felt that the intersections and crosswalks along the routes to school are unsafe, but the streets and sidewalks are safe. When asked about specific unsafe intersections and crosswalks, four of the eight parents who responded to this question identified the T-intersection of Sienna Parkway and Flintridge Avenue as an area of concern. Reasons for concern are unsafe motorist behaviors including speeding, failing to yield to pedestrians, and not paying attention. Other unsafe intersections and crosswalks are shown in Table 1. One parent indicated he/she feels all of the intersections and crosswalks along Sienna Parkway are unsafe due to speeding cars, inadequate lighting at night, and driver inattention.

Assistant Principal Clem indicated the intersection of Main Street and Second Street is an area of concern. Her reasons for concern include a high traffic volume, parents in a hurry, and children forgetting to look before crossing the street. Principal Dr. Kevin Rafferty has assigned Clem to assist students in crossing that intersection at various times. Observations revealed that parents drop children off in the intersection of Main Street and Second Street or very close to the corner.

Table 1. Unsafe Intersections and Crosswalks

<table>
<thead>
<tr>
<th>Intersection or Crosswalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sienna and Flintridge</td>
<td>4</td>
<td>failing to yield to pedestrians, speeding, driver inattention</td>
</tr>
<tr>
<td>All intersections/crosswalks along Sienna</td>
<td>1</td>
<td>inadequate street lighting, driver inattention, poor street lighting</td>
</tr>
<tr>
<td>Sienna and Main</td>
<td>1</td>
<td>high traffic volume</td>
</tr>
<tr>
<td>O’Neill and Winfield</td>
<td>1</td>
<td>speeding, reduced line of sight</td>
</tr>
<tr>
<td>Sienna and Second</td>
<td>1</td>
<td>failing to yield to pedestrians</td>
</tr>
<tr>
<td>Windmill and Snapdragon</td>
<td>1</td>
<td>speeding</td>
</tr>
</tbody>
</table>
When asked about specific streets or sidewalks that are unsafe, only three parents responded. One indicated all streets and sidewalks around the schools are unsafe because of the high volume of cars and aggressive drivers. Two indicated Benjamin Drive is unsafe and one indicated Second Street is unsafe. See Table 2 for information about unsafe streets and sidewalks. Note that Benjamin Drive is not within the immediate vicinity of a school and was not included in any further analysis.

**Table 2. Unsafe Streets and Sidewalks**

<table>
<thead>
<tr>
<th>Street or Sidewalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All streets/ sidewalks</td>
<td>1</td>
<td>high volume of traffic, aggressive driving</td>
</tr>
<tr>
<td>Benjamin Drive</td>
<td>2</td>
<td>speeding</td>
</tr>
<tr>
<td>Second Street</td>
<td>1</td>
<td>speeding, double parking, parking in &quot;no stopping&quot; zones, children jaywalking</td>
</tr>
</tbody>
</table>

**Accident Records**

Accident records from 2005 provided by the California Highway Patrol indicate that there was one reported accident in the area adjacent to Chaparral Elementary School. On March 12 at 6:45 a.m., the vehicle was traveling at an unsafe speed on Sienna Parkway, north of Flintridge Avenue, and hit a fixed object (CHP, 2007).

Accident records for 2006 indicated that there were two reported accidents in the area adjacent to the school. The first accident was on Second Street, near Sienna Parkway. On April 11 at 10:15 p.m., the driver was under the influence of alcohol or drugs and hit a fixed object. The second accident was on Flintridge Avenue, just west of Sienna Parkway, on November 27 at 7:45 a.m. The cause of the accident was straightening or backing and the driver hit another vehicle (CHP, 2007). This accident occurred on a school day during the morning peak traffic hour.
Previous Crossing Guard Studies

The County of Orange conducts studies when requests are made for engineering improvements or traffic controls. In the area near Chaparral Elementary School, the traffic conditions were evaluated in order to determine placement of crossing guards. Since the opening of the schools, studies for Sienna Parkway and Second Street, Second Street and Main Street, and Sienna Parkway and Flintridge Avenue have been completed.

The first request for a crossing guard in Ladera Ranch was made and granted for the intersection of Sienna Parkway and Second Street in January 2002. The basic requirement for a crossing guard is “that there be at least 25 children crossing per hour for any two hours of the day” (Orange County Traffic Committee [OCTC], 2002, p. 2). There is also traffic volume requirement that there be “at least 300 opposing vehicle conflicts per hour during the same two hours when children are present” (OCTC, 2002, p. 2) in order to justify the placement of the crossing guard at an uncontrolled intersection. At the time of the study, the morning pedestrian count was 29 students; the afternoon, 42. The vehicle conflicts were 403 in the morning and 413 in the afternoon. Both the pedestrian and vehicular volumes met the warrants and a crossing guard was assigned (OCTC, 2002).

A request for an adult school crossing guard at Second Street and Main Street was considered by the Traffic Committee in January of 2003. The basic requirement for a crossing guard is “that there be at least 25 children crossing per hour for any two hours of the day” (OCTC, 2003b, p. 2). The traffic volume requirement for a stop sign controlled intersection is that there must be “at least 500 opposing vehicle conflicts per hour during the same two hours when children are present” (OCTC, 2003b, p. 2). The staff report from 2003 indicates that the basic pedestrian volumes were met (the morning pedestrian count was 77 and the afternoon count was 41 children). However, the vehicle conflicts were 119 and 118, “significantly below those associated with the placement of an adult school crossing guard” (OCTC, 2003, p. 2). The Traffic Committee determined that the “all-way stop provided an appropriate level of school pedestrian safety given the traffic and pedestrian...
patterns currently existing during school activities” (OCTC, 2003b, p. 2) and a crossing guard was not assigned.

A request for an adult school crossing guard at Sienna Parkway and Flintridge Avenue was made and granted by the Traffic Committee in January of 2003. At that time, the pedestrian counts and vehicle activity were well below the required for assignment of a crossing guard. The morning pedestrian count was two students; the afternoon, 25. The vehicle conflicts were 135 in the morning and 257 in the afternoon. Despite the low pedestrian and vehicle activity, the Traffic Committee recommended that a crossing guard be placed at this intersection in anticipation of increased traffic as the community developed. (OCTC, 2003a).

Conclusions

Based on the data collected for the area adjacent to Chaparral Elementary School, there are general concerns with the speed of cars, driver inattention, and drivers failing to yield to pedestrians. Specific areas of high concern are the intersection of Sienna Parkway and Flintridge Avenue and the intersection of Second Street and Main Street. See Figure 11 for intersection locations. The intersection of Sienna Parkway and Flintridge Avenue was most frequently indicated by parents as an area of concern and there were two accidents reported in this area from 2005 thru 2006. The intersection of Second Street and Main Street was also noted by Assistant Principal Clem and the researcher as an area of concern. While studies have been completed for these areas by the County of Orange, the studies are out of date or the previous improvements have not adequately increased the perceived and actual safety for child pedestrians and bicyclists. Recommendations for improving these two areas can be found in Chapter 10.
Figure 11. Areas of Concern at Chaparral Elementary

Source: Author
Chapter 7
Findings:
Ladera Ranch Elementary and Middle Schools

School Information

Ladera Ranch Elementary and Middle Schools are located on a joint-use campus along with a public library located at 29551 Sienna Parkway. Children in kindergarten through fifth grades attend the elementary school and children in sixth through eighth grades attend the middle school. The elementary school currently has 810 students; the middle school, 915. The bell schedule is as follows:

Grades 1-5: 8:00 a.m. to 2:20 p.m.

9:00 a.m. to 2:20 p.m. (Wednesdays only)

Kindergarten: Early Birds: 7:45 a.m. to 11:15 a.m.

Late Owls: 9:30 a.m. to 1:00 p.m.

Afternoon K: 11:00 a.m. to 2:30 p.m.

Early Birds: 9:00 a.m. to 12:00 p.m. (Wednesdays only)

Late Owls: 10:30 a.m. to 1:30 p.m. (Wednesdays only)

Afternoon K: 11:45 a.m. to 2:45 p.m. (Wednesdays only)

Grades 6-8: 8:15 a.m. to 2:55 p.m.

9:15 a.m. to 2:55 p.m. (Wednesdays only)

Current Conditions

Education programs:

Elementary school- none.

Middle school- Traffic safety is covered in a school-wide assembly during Join the Pride Day.

Encouragement programs:

None.
Traffic controls: (See Figure 12 for locations.)

- Ladder-type crosswalk and crossing guard at Sellas North and Snapdragon Street.
- Two crossing guards at Sienna Parkway and Dorrance Avenue/ Daisy Street.
- Crossing guard at Sienna Parkway and Sellas North.
- Four-way top sign at Sellas North and Avendale Boulevard.
- Stop sign on Avendale Boulevard at Daisy Street.
- Stop signs on minor streets at intersections of major streets.

Traffic calming techniques:

- Roundabout at Sienna Parkway and Sellas North.
- Roundabout at Sienna Parkway and Daisy Street.

Loading/ Unloading Zones:

- Main zone in parking lot.
- Founder’s Park parking lot.
- Daisy Street between Sienna Parkway and Avendale Boulevard.
- Along Sellas Road North.
**Figure 12.** Current conditions at Ladera Ranch Elementary and Middle Schools

![Map of Ladera Ranch Elementary and Middle Schools](image)

Source: Author

**Background on Survey Respondents**

Forty-two survey responses were received from parents at Ladera Ranch Elementary School. The survey respondents represented parents of children at all grade levels. 22 of the respondents were residents of the Avendale Village within Ladera Ranch. Responses were also received from residents of the villages of Terramor, Echo Ridge, Flintridge, and Wycliffe. Two responses from the elementary school parents were from areas outside of Ladera Ranch.
Eleven survey responses were received from Ladera Ranch Middle School parents. The survey respondents represented all grade levels. Seven of the responses were received from residents of the Avendale Village within Ladera Ranch. Responses were also received from residents of the Oak Knoll and Covenant Hills villages. One respondent was a resident of Mission Viejo.

**Current Modes of Travel and Attitudes about Walking and Bicycling - Elementary School**

Survey responses from the elementary school parents indicate a large number of the children are driven to and from school and they are not in a carpool. A large number of children also walk to and from school with an adult. See Figures 13 and 14 for distribution of current school commuting methods. 80% of the survey respondents said they would like their children to walk or bicycle to school more often.

The interview with Elementary School Assistant Principal Clem and observations by the researcher also noted many elementary school children walk with a parent or by themselves. Many pedestrians travel on Dorrance Drive, crossing the Sienna Parkway and Dorrance Drive/ Daisy Street roundabout.

The survey asked parents who indicated that their child is driven to or from school to provide a reason or reasons why. The survey allowed parents to choose multiple reasons. 27 parents responded to this question. Most respondents indicated more than one reason.
Responses are shown in Figure 15. A total of eight parents said they drop off or pick up their child on the way to or from work. Seven parents said that they are in a rush and six said they are concerned about traffic safety. Eleven gave other reasons for driving the child to or from school. These reasons included inclement weather, dropping off the child on the way to run errands or drive other children to other schools, and concerns about the child being too young to walk the distance. Two respondents work at the school. One respondent said the child has too many things to carry to be able to walk.

**Figure 14.** Elementary School- How does your child typically get home from school in the afternoon?

**Figure 15.** Elementary School- Reasons for driving child to or from school.
Current Modes of Travel and Attitudes about Walking and Bicycling- Middle School

Many of the Ladera Middle School students walk alone or with other children. Driving the students in a non-carpool is the next most common form of school transportation. Age and maturity may be factors in a large number of children walking to school without an adult. The majority of respondents want their child to walk or bicycle to school more often. Observations confirmed that many of the middle school children walk to school by themselves or with groups of other children.

The survey asked parents who indicated that their child is driven to or from school to provide a reason or reasons why. The survey allowed parents to choose multiple reasons. Six parents responded to this question. Most respondents indicated more than one reason. Two parents said they are in a rush. One is concerned about traffic safety. One student lives too far from school to walk or bicycle. Two said they drive the middle school student on the way to drop off another child at a different school. One has a child with a zero period and would have to leave home very early to walk or bicycle.

Perceptions of Traffic Safety- Elementary School

The majority of elementary school parents feel the intersections and crosswalks along the routes to school as well as the streets and sidewalks are safe. 67.5% of the survey respondents felt crosswalks and intersections are safe while 82.5% of respondents felt streets and sidewalks are safe. When asked about specific unsafe intersections and crosswalks, seven of the eighteen parents who responded to this question felt all intersections and crosswalks are unsafe. Reasons for concern are unsafe motorist behaviors including speeding, failing to yield to pedestrians, and not paying attention. Three parents indicated the intersection of Avendale Boulevard and Sellas North is unsafe because of drivers failing to yield to pedestrians, speeding cars, and driver inattention. Three parents also indicated the roundabouts at Sienna Parkway and Sellas North and Sienna Parkway and Dorrance Drive are unsafe. A number of parents felt intersections along Snapdragon Street and Sellas North...
are unsafe because of driver behavior and cars blocking lines of sight. See summary on Table 3.

Table 3. Unsafe Intersections and Crosswalks

<table>
<thead>
<tr>
<th>Intersection or Crosswalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All intersections/crosswalks</td>
<td>7</td>
<td>failing to yield to pedestrians, speeding, driver inattention</td>
</tr>
<tr>
<td>Avendale and Sellas</td>
<td>3</td>
<td>failing to yield to pedestrians, high traffic volume, speeding, driver inattention</td>
</tr>
<tr>
<td>Sienna/Sellas and Sienna/Dorrance roundabouts</td>
<td>3</td>
<td>failing to yield to pedestrians, speeding, landscaping blocks view</td>
</tr>
<tr>
<td>Snapdragon and Sterling Glen</td>
<td>2</td>
<td>speeding, children cross without looking</td>
</tr>
<tr>
<td>Sellas North and Snapdragon</td>
<td>2</td>
<td>speeding, driver inattention, reduced line of sight, children dropped off at the intersection</td>
</tr>
<tr>
<td>Irish Moss and Snapdragon</td>
<td>1</td>
<td>landscaping blocks view</td>
</tr>
<tr>
<td>Sells and Tuberose</td>
<td>1</td>
<td>reduced line of sight</td>
</tr>
<tr>
<td>Snapdragon and Windmill</td>
<td>1</td>
<td>speeding, children cross without looking</td>
</tr>
<tr>
<td>Avendale and Sklar</td>
<td>1</td>
<td>reduced line of sight</td>
</tr>
</tbody>
</table>

When asked to identify specific unsafe streets and sidewalks, eight parents responded. Two parents were concerned that high landscaping blocks the view- one in general and one specifically concerned with the Sienna Botanica trail. Two indicated he parking lot entrances are unsafe because of driver behavior. One indicated Sellas North is unsafe because of traffic volume and reduced line of sight due to parked cars. See Table 4 for a summary of unsafe streets and sidewalks.

Observations by the researcher and comments from Assistant Principal Clem revealed additional concerns. The researcher found many cars were parking too close to the corners along Sellas North or drivers were dropping off their children in the intersections. Parents were also making unsafe U-turns adjacent to the bus drop area. At the intersection of Daisy Street and Avendale Boulevard, parents were dropping off their children at the intersection or stopping too close to the corner. Assistant Principal Clem indicated that the area being
used as a loading and unloading zone on Daisy Street adjacent to the Avendale Club is also an area of concern.

**Figure 16.** Car parked in crosswalk along Sellas North

![Image: Car parked in crosswalk along Sellas North]

Source: Author

**Table 4.** Unsafe Streets and Sidewalks

<table>
<thead>
<tr>
<th>Street or Sidewalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All streets/ sidewalks</td>
<td>1</td>
<td>landscaping reduces line of sight</td>
</tr>
<tr>
<td>parking lot entrances</td>
<td>2</td>
<td>failing to yield to pedestrians, driver inattention, cars parked in &quot;no stopping zones,&quot; cars blocking the sidewalk</td>
</tr>
<tr>
<td>Sienna Botanica trail</td>
<td>1</td>
<td>high landscaping blocks view from street</td>
</tr>
<tr>
<td>Sellas Street</td>
<td>1</td>
<td>traffic volume, reduced line of sight</td>
</tr>
</tbody>
</table>
Perceptions of Traffic Safety- Middle School

Most middle school parents felt the streets and sidewalks along the routes to school are safe, but the intersections and crosswalks are unsafe. When asked to identify specific unsafe intersections and crosswalks, two indicated all intersections and crosswalks are unsafe because of driver inattention and speeding. The roundabouts along Sienna Parkway and the intersections along Sellas North were also mentioned. A summary of responses is shown in Table 5.

Table 5. Unsafe Intersections and Crosswalks

<table>
<thead>
<tr>
<th>Intersection or Crosswalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All intersections/crosswalks</td>
<td>2</td>
<td>driver inattention, speeding</td>
</tr>
<tr>
<td>Sienna/Sellas and Sienna/Dorrance roundabouts</td>
<td>3</td>
<td>high traffic volume, driver inattention, reduced line of sight</td>
</tr>
<tr>
<td>Sellas and Snapdragon</td>
<td>2</td>
<td>reduced line of sight, speeding</td>
</tr>
<tr>
<td>Avendale and Sellas</td>
<td>1</td>
<td>speeding</td>
</tr>
</tbody>
</table>

When asked to identify specific concerns about unsafe streets or sidewalks, one respondent said all streets and sidewalks are unsafe and one respondent said Sellas North is unsafe. Both indicated motorist behaviors and pedestrian behaviors as reasons for concern. A summary of responses is provided in Table 6.

Table 6. Unsafe Streets and Sidewalks

<table>
<thead>
<tr>
<th>Street or Sidewalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All streets/sidewalks</td>
<td>1</td>
<td>drivers making U-turns midblock, children jaywalking, driver inattention, speeding</td>
</tr>
<tr>
<td>Sellas North</td>
<td>1</td>
<td>children dropped off in middle of street, children jaywalking</td>
</tr>
</tbody>
</table>
Additional Comments and Concerns

The elementary school parents indicated additional non-traffic safety concerns on the survey responses as well as positive comments about the Ladera Ranch environment. One parent said that the middle school students loiter in the area after school and that their behavior is threatening to others. One parent indicated that motorists still use their cell phones while driving in the school areas even after repeated reminders about usage. Two parents wanted to see incentive programs to encourage children to walk. Some parents remarked that Ladera Ranch is very enjoyable for pedestrians in general.

Accident Records

Accident records provided by the California Highway Patrol indicate there were three reported accidents in 2005 in the areas adjacent to the Ladera Ranch Elementary and Middle School campus. One accident was at the intersection of Sienna Parkway and Sellas North. On December 15 at 12:10 a.m., a vehicle was traveling at an unsafe speed and hit a fixed object. A second accident was on Sellas North, east of Solstice. On May 26 at 2:45 p.m., the driver made an improper turn and hit another moving vehicle. This accident occurred at a time when children were present. A third accident was at the intersection of Sienna Parkway and Daisy. On February 2 at 9:05 p.m., the driver made an improper turn and hit a fixed object (CHP, 2007).

Accident records for 2006 indicate there were four reported accidents in the areas adjacent to the campus. The first accident was at the intersection of Sellas North and Solstice. On January 11 at 9:10 a.m., the driver was straightening or backing up and hit another moving vehicle. The second accident was at the intersection of Sienna Parkway and Sellas Road North. On April 18 at 11:15 p.m., the driver was traveling at an unsafe speed and hit a fixed object. The third accident was on Sienna Parkway, north of Sellas Drive. On April 25 at 2:35 p.m., the driver made an improper turn and hit a fixed object. This accident occurred on a school day during the afternoon peak traffic hour. The last accident was on Dorrance Drive,
west of Clydesdale. On July 28 at 1:35 p.m., the driver made an improper turn and hit a fixed object (CHP, 2007).

### Previous Crossing Guard Studies

The County of Orange conducts studies when requests are made for engineering improvements or traffic controls. In the area near Ladera Ranch Elementary and Middle Schools, the traffic conditions were evaluated in order to determine placement of crossing guards. Since the opening of the schools, studies at Sellas North and Snapdragon Street, Sellas North and Sienna Parkway, and Sienna Parkway and Dorrance have been completed.

A request for a crossing guard at the intersection of Sienna Parkway and Sellas North was made and granted in September 2004 by the Orange County Traffic Committee. The basic requirement for a crossing guard is “that there be at least 25 children crossing per hour for any two hours of the day” (OCTC, 2004b, p. 2). There is also traffic volume requirement that there be “at least 300 opposing vehicle conflicts per hour during the same two hours when children are present” (OCTC, 2004b, p. 2) in order to justify the placement of the crossing guard at an uncontrolled intersection. The observed pedestrian and traffic volumes at that time are as follows:

### Table 7. Crossing guard study- Sienna Parkway and Sellas North

<table>
<thead>
<tr>
<th>Location</th>
<th>Time</th>
<th>Hourly Average Pedestrians</th>
<th>Hourly Average Opposing Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossing Sienna (north side) at Sellas</td>
<td>morning</td>
<td>45</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>afternoon</td>
<td>11</td>
<td>340</td>
</tr>
<tr>
<td>Crossing Sienna (south side) at Sellas</td>
<td>morning</td>
<td>0</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>afternoon</td>
<td>22</td>
<td>338</td>
</tr>
<tr>
<td>Crossing Sellas (east side) at Sienna</td>
<td>morning</td>
<td>9</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>afternoon</td>
<td>53</td>
<td>301</td>
</tr>
</tbody>
</table>

Source: Orange County RDMD, 2004
“Neither Sienna crossing entirely met the warrants in the morning and afternoon; however if pedestrians were likely to cross at one location, such as the north crosswalk, this volume combination would likely meet the full warrant” (OCTC, 2004b, p. 3). Therefore, the Traffic Committee approved the request.

A request for two crossing guard at the intersection of Sienna Parkway and Dorrance Drive/Daisy Street North was made and granted by the Traffic Committee in September of 2004. The observed pedestrian and traffic volumes at that time were as follows:

Table 8. Crossing guard study at Sienna Parkway and Dorrance Drive/Daisy Street

<table>
<thead>
<tr>
<th>Location</th>
<th>Time</th>
<th>Hourly Average Pedestrians</th>
<th>Hourly Average Opposing Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossing Sienna</td>
<td>morning</td>
<td>34</td>
<td>296</td>
</tr>
<tr>
<td>(north side) at Dorrance/Daisy</td>
<td>afternoon</td>
<td>54</td>
<td>316</td>
</tr>
<tr>
<td>Crossing Sienna</td>
<td>morning</td>
<td>0</td>
<td>122</td>
</tr>
<tr>
<td>(south side) at Dorrance/Daisy</td>
<td>afternoon</td>
<td>0</td>
<td>137</td>
</tr>
<tr>
<td>Crossing Dorrance</td>
<td>morning</td>
<td>9</td>
<td>253</td>
</tr>
<tr>
<td>(west side) at Sienna</td>
<td>afternoon</td>
<td>5</td>
<td>251</td>
</tr>
<tr>
<td>Crossing Daisy (east side)</td>
<td>morning</td>
<td>23</td>
<td>262</td>
</tr>
<tr>
<td>at Sienna</td>
<td>afternoon</td>
<td>10</td>
<td>221</td>
</tr>
</tbody>
</table>

Source: Orange County RDMD, 2004

Based on the pedestrian and vehicle counts, the Traffic Committee approved assigning two crossing guards to the intersection. The staff report notes that it would have been difficult for a single crossing guard to monitor all directions because the crosswalks at this roundabout do not converge at a common corner (OCTC, 2004a).

A request for an adult crossing guard at the intersection of Sellas North and Snapdragon Street was granted in April of 2006 by the Traffic Committee. The County study from December of 2005 indicated that the morning pedestrian count was 131 students and the
afternoon was 34 students. The morning vehicle conflicts were 245 and the afternoon were 120. The pedestrian counts met the minimum required for the placement of a crossing guard, but the afternoon vehicle conflicts were well below the traffic volume requirement (OCTC, 2006a).

In March 2006, traffic engineering staff, residents, and the school principals jointly observed the intersection of Sellas North and Snapdragon Street. At that time, “vehicles were observed stopping within the intersection and near the crosswalk to let out children, at times interfering with the children crossing the street” (OCTC, 2006a, p. 2). As a result of this meeting, “No Stopping” signs were installed and red curb markings were painted in the fall of 2006 to discourage stopping close to and parking near the intersections. An adult crossing guard was assigned and a ladder-style crosswalk was painted across Sellas North.

**Conclusions**

Based on the data collected for the area adjacent to Ladera Ranch Elementary and Middle Schools, there are concerns with the speed of cars, driver inattention, drivers failing to yield to pedestrians, and reduced lines of sight due to landscaping or parked cars on the streets around the schools. Specific areas of high concern are the intersections along Sellas North, especially the intersection of Sellas North and Avendale Boulevard. See Figure 17 for intersection locations. The area along Sellas North was most frequently indicated by parents as an area of concern and there were 4 accidents reported along this street from 2005 thru 2006. Both dangerous motorist behaviors and pedestrian behaviors are causing concern. While improvements have been made to the intersection of Sellas North and Snapdragon, there is a continuing concern about the area along the entire length of the Sellas North. In particular, Avendale and Sellas is an intersection crossed by many students, but has not been studied for safety improvements by the County. Recommendations for improving these two areas can be found in Chapter 11.
Figure 17. Areas of concern at Ladera Ranch Elementary and Middle Schools

Source: Author
Chapter 8
Findings: Oso Grande Elementary School

School Information

Oso Grande Elementary, a kindergarten through eighth grade school, is located at 30251 Sienna Parkway. The elementary school currently has 560 students, with an expected enrollment of 725 students in 2007-2008. The bell schedule is as follows:
Grades 1-5:  7:45 a.m. to 2:05 p.m.
    7:45 a.m. to 12:50 p.m. (Wednesdays only)
Kindergarten: Early Birds:  7:45 a.m. to 11:09 a.m.
    Late Owls:  9:26 a.m. to 12:50 p.m.

Current Conditions and Programs

Education programs:
Teachers review brochures on pedestrian and bicyclist safety in the classroom if and when they are provided by the Automobile Club.

Encouragement programs:
A school-wide physical fitness week culminated in a “walk-to-school” day.

Traffic controls: (See Figure 18 for locations.)
Crossing guard at Sienna Parkway and O’Neill Drive.
Stop sign at Covenant Hills Road and Sienna Parkway

Traffic calming techniques:
Roundabout at Sienna Parkway and O’Neill Drive.

Loading/ Unloading Zones:
Main zone in parking lot (monitored by three school employees).
Secondary zone in bus loading area on north side of the school off of O’Neill Drive (not regularly monitored).
Chapter 8. Findings: Oso Grande Elementary School

Figure 18. Current conditions at Oso Grande Elementary

Source: Author

Background on Survey Respondents

A parent survey generated 35 responses at Oso Grande Elementary School. The survey responses were mainly from parents with children in the lower grades (kindergarten through second). Twenty of the responses were received from residents of Terramor Village within Ladera Ranch. Some responses were received from residents of the villages of Wycliffe, Echo Ridge, Covenant Hills, and Avendale. Only one respondent was a resident outside of Ladera Ranch.
Current Modes of Travel and Attitudes about Walking and Bicycling

Survey responses indicate most of the children are driven to and from school and they are not in a carpool. 42.9% of children are driven to school in a non-carpool and 51.4% are driven home in a non-carpool. Carpooling and walking with an adult are the next most frequent modes of school commuting. See Figures 19 and 20 for more information. 54.8% percent of the survey respondents said they would like their children to walk or bicycle to school more often.

The survey asked parents who indicated their child is driven to or from school to provide a reason or reasons why. The survey allowed parents to choose multiple reasons. 33 parents responded to this question. Most respondents indicated more than one reason. A total of twelve respondents were concerned about traffic safety. Eight responded that they drive because they are in a rush and eight responded that the school is too far. Twelve gave other reasons for driving the child to or from school These reasons included concerns about the child being alone, the child being hot or tired, the child being too young, the need for time to do homework and other activities, and the school being difficult to get to by bicycle or on foot. See summary in Figure 21.

The interview with Principal Martin and observations by the researcher also noted that very few children walk or bicycle to school. A substantial number of children are driven to or from school in a carpool. Principal Martin noted that more children are walking with their parents or bicycling this school year than in 2005-2006. Principal Martin explained that only
children in grades three through five are allowed to bicycle to school. Many children are also involved in after-school activities, which parents drive them to.

**Figure 20.** How does your child typically get home from school in the afternoon?

- **Driven in an automobile-carpool:** 28.6%
- **Walls alone or with other children:** 2.9%
- **Bycles alone or with other children:** 2.9%
- **Walls with an adult:** 14.3%
- **Driven in an automobile-non-carpool:** 51.3%

**Figure 21.** Reasons for driving child to or from school.

**Perceptions of Traffic Safety**

The majority of respondents felt the intersections and crosswalks along the routes to school are unsafe, but the streets and sidewalks are safe. 69.7% of the respondents felt intersections and crosswalks are unsafe. 31.2% of respondents felt streets and sidewalks are unsafe. Some parents indicated they felt all of the intersections and crosswalks are unsafe, especially when
a crossing guard is not present. When asked about specific unsafe intersections and crosswalks, 11 of the 23 respondents identified the roundabout at O'Neill Drive and Sienna Parkway as an area of concern. See Table 9 for a summary of unsafe intersections and crosswalks. Reasons for concern at the roundabout are unsafe motorist behaviors including speeding, failing to yield to pedestrians, and not paying attention. Many parents noted a high traffic volume at this intersection as well as visibility problems caused by overgrown landscaping. Some parents felt there should be an additional crossing guard at the roundabout to handle the amount of pedestrian and vehicular traffic. A photo taken of the street approaching the roundabout during the morning rush hour shows a large amount of vehicular traffic in Figure X. Six parents felt that the intersection of Covenant Hills Drive and Sienna Parkway is unsafe due to speeding vehicles. A few respondents felt there is a need for a marked crosswalk across Sienna Parkway at this location.

Figure 22. Overgrown landscaping approaching a roundabout. Source: Author

Figure 23. Traffic congestion along O'Neill Drive. Source: Author
Table 9. Unsafe Intersections and Crosswalks

<table>
<thead>
<tr>
<th>Intersection or Crosswalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All intersections/ crosswalks</td>
<td>3</td>
<td>driver inattention when there is no crossing guard, failing to yield to pedestrians</td>
</tr>
<tr>
<td>Sienna and O’Neill</td>
<td>11</td>
<td>high traffic volume, speeding, failing to yield to pedestrians, landscaping blocks line of sight, driver inattention, children forget to look before crossing</td>
</tr>
<tr>
<td>Sienna and Covenant Hills</td>
<td>6</td>
<td>speeding, driver inattention</td>
</tr>
<tr>
<td>Eton and Aura</td>
<td>1</td>
<td>reduced line of sight at corners</td>
</tr>
<tr>
<td>Narrow Canyon and Aura</td>
<td>1</td>
<td>speeding</td>
</tr>
<tr>
<td>O’Neill and Hydrangea</td>
<td>1</td>
<td>high traffic volume, speeding</td>
</tr>
<tr>
<td>Clairn and O’Neill</td>
<td>1</td>
<td>speeding</td>
</tr>
</tbody>
</table>

When asked to identify specific unsafe streets or sidewalks, the responses varied widely. Three respondents mentioned the Covenant Hills construction entrance area is unsafe because of construction traffic. Four respondents made remarks about feeling the streets and sidewalks are generally unsafe because of distracted drivers or speeding combined with physical design such as the lack of stop signs, lack of crosswalks, or the design of the roundabout. See Table 10 for a summary of unsafe streets and sidewalks.

Table 10. Unsafe Streets and Sidewalks

<table>
<thead>
<tr>
<th>Street or Sidewalk</th>
<th>Number of Respondents Concerned</th>
<th>Reasons for Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>All streets</td>
<td>4</td>
<td>speeding</td>
</tr>
<tr>
<td>Covenant Hills construction entrance</td>
<td>3</td>
<td>speeding, high volume of traffic, driver inattention, failing to stop at stop sign, reduced line of sight</td>
</tr>
<tr>
<td>O’Neill</td>
<td>2</td>
<td>speeding</td>
</tr>
<tr>
<td>Sienna (between Ethereal and O’Neill)</td>
<td>1</td>
<td>speeding</td>
</tr>
<tr>
<td>Narrow Canyon</td>
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<td>parking on streets</td>
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</table>
Additional Comments and Concerns

Additional comments made by survey respondents included concerns about the safety of the Oso Grande parking lot, the desire for more traffic law enforcement, concerns that the bicycle storage area is unlocked, concerns about numerous children who ride their bicycles without helmets, and a desire to reduce the amount of school work and supplies their children must carry to school.

Martin said one of the largest concerns of Oso Grande parents in the lack of parking on-site. Many parents prefer to park and walk their children to their classroom. School policy stresses that kindergarteners must be escorted to their classroom. Martin has encouraged parents to use the adjacent recreational area parking lots. Some parents have requested a walkway from Covenant Hills Park to the school so that they do not have to cross the wet, grassy playing field.

Principal Jayne Martin expressed a general concern about the unsafe behaviors of the parents in the school parking lot including weaving through the loading/unloading zone to walk their children to the classroom. She also indicated that parents use Sienna Parkway in front of the school as a loading or parking area when it is a “No Stopping” zone and a bike lane. Martin felt the single crossing guard is overwhelmed at times. There is also a large traffic backup at the Sienna/O’Neill roundabout during peak hours. Martin would also like law enforcement to be more visible and active by patrolling on foot or by citing traffic law violators.

The observer witnessed parents parking in front of the school in the “No Stopping” zone for an extended period of time. Parents were also parking along the red curbs within the main parking lot and in the bus loading area. Motorists were seen speeding in the roundabouts and out of the roundabouts. There were also motorists who backed out of the bus loading area against traffic.
The students walking and bicycling to school appeared very conscientious about obeying the traffic laws, but there were some unsafe behaviors. A few students failed to wait for the crossing guard at the roundabout. Bicyclists were seen riding their bicycles through the intersection and crossing Sienna Parkway at the bus loading area instead of at the intersection.

**Accident Records**

Accident records from 2005 provided by the California Highway Patrol indicate there was one reported accident in the area adjacent to Oso Grande Elementary School. A vehicle made an improper turn at the Sienna/ O’Neill roundabout on a school day (December 8th) in the morning. It was a non-collision accident, but resulted in an injury (CHP, 2007).

Accident records for 2006 indicate there were two reported accidents in the area adjacent to Oso Grande Elementary School. The first accident was on O’Neill Drive, east of Sienna. The second accident was on Covenant Hills Drive, just east of Sienna. Both incidents occurred during the nighttime hours. In both accidents, the drivers were under the influence of drugs or alcohol and hit a fixed object (CHP, 2007).

**Previous Crossing Guard Studies**

A request for an adult crossing guard at the intersection of Sienna Parkway and O’Neill Drive was made and granted in 2006. The basic requirement for a crossing guard is “that there be at least 25 children crossing per hour for any two hours of the day” (Orange County Traffic Committee [OCTC], 2006b, p. 3). There is also traffic volume requirement that there be “at least 300 opposing vehicle conflicts per hour during the same two hours when children are present” (OCTC, 2006b, p. 3) in order to justify the placement of the crossing guard. At that time, the pedestrian counts did not meet the basic requirement, but the opposing vehicle conflicts were very high (an hourly average of 487 to 1090). The Traffic Committee recommended a crossing guard be placed at this intersection because of the high...
traffic volume and “in anticipation of more students being enrolled by the beginning of the next school year” (OCTC, 2006b, p. 3).

**Conclusions**

Based on the parent survey at Oso Grande Elementary school, there is a high concern about the dangerous behavior of motorists, especially speeding, in the general area adjacent to the school. Specific areas with high safety concerns indicated by the parents were the Sienna Parkway and O’Neill Drive roundabout, the intersection of Sienna Parkway and Covenant Hills Drive, and the Covenant Hills construction entrance. See Figure 24 for locations. Many parents cited physical conditions, driver behavior, and pedestrian behavior as causes for concern at the Sienna/O’Neill roundabout. They also expressed a desire to have a safe crossing for their children at Sienna Parkway and Covenant Hills Drive and were concerned about traffic congestion including the construction traffic. Observations by the researcher and remarks by Principal Martin also found that the “No Stopping” area directly in front of the school is an area of concern. The County has not previously studied the area around the construction entrance, the Sienna Parkway/ Covenant Hills Drive intersection, and the “No Stopping” area in front of the school to see if improvements can be made. Additionally, the study completed for the crossing guard at the Sienna Parkway/O’Neill drive roundabout does not reflect the recent increase in students. Recommendations for improving these areas can be found in Chapter 11.
Figure 24. Areas of Concern at Oso Grande Elementary School

Source: Author
Chapter 9
Recommendations: Community-Wide

Traffic safety concerns are not the only barriers for children to walking and bicycling in Ladera Ranch, but were mentioned by the majority of parents responding to the survey. Specific concerns at each school vary in relation to site conditions adjacent to the school. Community-wide, traffic safety concerns appear to be mainly caused by the behavior of motorists. Specific unsafe behaviors identified most often were speeding, failing to yield pedestrians, and driver inattention.

At all of the schools in Ladera Ranch, parents would like to see their children walking and bicycling to school more often. The percentage of students currently walking and bicycling to school vary at each site. Bicycling was not indicated as a mode of transportation as much as walking. Most elementary school children who walked to school did so with an adult. At the middle school level, children walk more independently, probably due to age and maturity.

The following recommendations address the concerns and the needs found community-wide. Additional site-specific recommendations are provided in the next sections. Table 11 shows the primary and secondary parties who would implement the recommendations. A list of helpful internet resources with implementation tools is included in Appendix E.
Table 11. Implementation of Recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Page</th>
<th>Primary Implementing Party</th>
<th>Secondary Implementing Party</th>
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<tbody>
<tr>
<td>Create a School Traffic Safety Subcommittee.</td>
<td>p. 67</td>
<td>■</td>
<td></td>
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<tr>
<td>Assign duties to evaluate improvements and programs.</td>
<td>p. 77</td>
<td>■</td>
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<tr>
<td>Develop and disseminate educational materials to drivers in the community.</td>
<td>p. 68</td>
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<td>Organize special events to encourage walking and bicycling.</td>
<td>p. 73</td>
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<td>Provide educational materials to the companies utilizing construction entrance.</td>
<td>p. 88</td>
<td>■</td>
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<tr>
<td>Regularly evaluate and resolve problems created by overgrown landscaping.</td>
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<tr>
<td>Provide traffic safety education to all students.</td>
<td>p. 68</td>
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<td>■ □ □ □ □ □ □</td>
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<tr>
<td>Organize incentive programs for students walking or bicycling to school.</td>
<td>p. 73</td>
<td>■</td>
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<tr>
<td>Encourage parents to reduce the number of vehicles in the immediate vicinity of the school.</td>
<td>p. 89</td>
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Table 11. Implementation of Recommendations (continued)

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Primary implementing party</th>
<th>Secondary implementing party</th>
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<tbody>
<tr>
<td>Increase traffic law enforcement in the areas adjacent to the schools.</td>
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<tr>
<td>Install permanent vehicle speed feedback signs on Sienna and O’Neill.</td>
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<tr>
<td>Expedite the installation of in-pavement lighting at the crosswalk at Sienna and Flintridge.</td>
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<tr>
<td>Investigate the installation of overhead signage with flashing lights at Sienna and Flintridge.</td>
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<tr>
<td>Update the 2003 study to provide an adult school crossing guard at Second and Main.</td>
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<tr>
<td>Investigate the installation of curb extensions along Sellas North.</td>
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<tr>
<td>Consider placing an adult school crossing guard at Avendale and Sellas North.</td>
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<tr>
<td>Consider placing an additional adult school crossing guard at Sienna and O’Neill.</td>
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<td>Consider a ladder-type crosswalk crossing Sienna at Covenant Hills.</td>
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<tr>
<td>Place signage and paint curb markings directly in front of the Oso Grande “No Stopping” area.</td>
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Chapter 9. Recommendations: Community-Wide

Coordination of Programs and Improvements

The schools throughout Ladera Ranch currently do not have a school traffic safety advisory committee. Both the California MUTCD and the Orange County Traffic Manual encourage the schools to create a student pedestrian advisory committee. The school district “is encouraged to 1. assign student pedestrian responsibilities to a competent staff member and/or 2. organize a school student pedestrian advisory committee to serve the needs of each public and private school” (State of California Department of Transportation [CA DOT], 2006, p. 7A-2). The Orange County Traffic Manual requests that each school district appoint a “Safety Officer who, as a liaison, coordinates individual school’s requests for school safety devices with the Orange County Traffic Committee” (Orange County Environmental Management Agency, 1985, p. 10). The Capistrano Unified School District currently has a representative on the Traffic Committee. Coordination between the schools, the master association, and the Ladera Ranch Transportation Club could be strengthened by periodic meetings and sharing of information.

A school traffic safety subcommittee comprised of school authorities, parents, and representatives from LARMAC would work to bridge the gap in communication between the schools, the community, and the County. This committee would share the responsibility of documenting and relaying to the County traffic engineers the concerns about traffic safety in the school zones. The committee would work with the County traffic engineers and law enforcement to make improvements. The group would function as a sub-committee under the oversight of the Ladera Ranch Transportation Club or under the proposed Ladera Ranch Traffic Committee.

Creating a committee ensures the school and parent concerns are documented in an organized manner. It also allows for team solution building and creativity. The community group would ensure the concerns and suggestions are received by the appropriate parties and are addressed in a timely manner. A national Safe Routes to School course has been developed to train groups of a similar nature in creating Safe Routes to School programs. The course covers ways to make improvements through engineering, education,
enforcement, and encouragement. Information can be found at www.saferoutesinfo.org/training/national_course.

**Recommendation for the Ladera Ranch Transportation Club:**

Create a School Traffic Safety Subcommittee to oversee future studies, coordinate school traffic safety efforts, and monitor implementation and evaluation of programs.

**Education of Children and Motorists**

The schools currently provide limited education about pedestrian and bicyclist safety. Chaparral Elementary includes bicycle safety as part of a school-wide Safety Day. The Middle School includes traffic safety as part of a school-wide assembly. Teachers at Oso Grande Elementary review material if and when it is provided by outside organizations. Evaluators of the Marin County Safe Routes program identified traffic safety education as one of the “keys to success” (Nelson/Nygaard Consulting Associates, 2005, p. 23). Through education, the community of both children and motorists can receive guidance on what are safe behaviors in terms of traffic safety. Parents can also evaluate their child’s readiness to walk or bicycle to school safely and encourage the practice of the safety skills.

An educational program for parents and motorists can cover both safe driving practices and ways to teach children safe walking and bicycling practices. Education of the parents and motorists can mainly be accomplished through print media. As part of the successful pilot education program in Marin County, the drivers in the school areas were given fact sheets that informed them of their responsibilities to keep children safe (NHTSA, 2002). The school principals currently remind parents of safe driving practices through the school websites and email newsletters. Dissemination of information can be increased to include non-parents through postings on LaderaLife and through flyers. Ladera Ranch has local newspapers that may be helpful in publicizing educational materials. In Marin County, special training sessions for parents also provided information on bicycle safety including the rules of the road and helmet laws (National Safe Routes to School, n.d.).
In-classroom educational programs incorporate pedestrian and bicycle safety into the students’ curriculum. In-class programs help reinforce safety and encouragement messages throughout the year. In addition to safe procedures, walking and bicycling can be encouraged through an educational program that teaches the benefits of these activities. “Schools that do not participate in the classroom education do not do as well as those that do, and progress made in one year at those schools will almost certainly be eroded over the summer months. Through the educational component long-term change is achieved” (Nelson/Nygaard Consulting Associates, 2005, p. 23). The National Highway Safety Traffic Administration [NHSTA] recommends focusing on pedestrian training for first and second grades and on bicyclist training for third, fourth, and fifth grades (NHSTA, 2002).

Ways to incorporate education into specific subjects include:

- Physical education and health- hands-on training, review of bicyclist and pedestrian safety, learning about the fitness benefits, using pedometers.
- Math- performing surveys and calculating averages distances related to walking to school, creating graphs showing the results.
- Science- nature walks, discussing vehicle usage and its impacts on pollution and climate change.
- Reading and language arts- reading and writing about nature.
- Art- designing posters to encourage walking.
- Geography- participating in Walk or Bike Across America (See www.saferoutestoschools.org/walk), drawing a map of the route to school. (National Safe Routes to School, n.d.).

Barriers to implementing a successful in-classroom educational program are the heavy workload and time constraints of the teachers. Support from the district and the principal are critical. Assistance may come from providing lesson plans to the teachers and recruiting parent and community volunteers. A lesson plan could be developed at the district level or through community groups. Lessons can also be linked to state or district level curriculum requirements. The Marin County Bicycle Coalition provides lesson plans based on subject and grade level. See their website (http://www.saferoutestoschools.org/lessonplans.html)
for downloadable files. More ideas for educational programs from *How to Start Your Own Walk-to-School, Bike-to-School Traffic Reduction and Safety Program* are found in Appendix E.

**Assemblies and school-wide instruction** reach many children quickly, building school-wide excitement and taking up relatively little class time (National Safe Routes to School, n.d.). Assemblies work best when they are “short, visual, and focused on a single topic” (National Safe Routes to School, n.d.). Other ideas include having a bicycle rodeo (see adaptation below) or safety town course (see www.nhtsa.dot.gov/kids) set up for a special day. Chaparral Elementary had a Safety Day in fall of 2006 that can be replicated at the other schools. Law enforcement agencies can provide instruction and materials. Also, Safe Moves, a non-profit organization from Van Nuys, California, provides speakers and educational materials. More information on Safe Moves can be found at www.safemoves.org.

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**Bicycle Rodeo**- adapted from Bicycling Life’s *Bicycle Rodeo*

The bicycle rodeo involves a bicycle safety clinic with safety inspections and a discussion of the rules of the road. The students ride through an obstacle course where they apply the rules, practice safe procedures, and negotiate hazards. This event can be held on a large school parking lot and can be sponsored by the school, the PTA, or by a business or community group. Holding the event in the evening or on the weekend can allow for parent involvement. Further information can be found on the Bicycling Life website at www.bicyclinglife.com/SafetySkills/BicycleRodeo.htm.

**Figure 25. Bicycle Rodeo**

Source: Active Living Resources, 2007
**Recommendation for the Ladera Ranch Town Manager:**

*Work with the appropriate school authorities to develop and disseminate traffic safety educational materials to drivers in the community.*

**Recommendation for all schools:**

*Work with law enforcement agencies to provide in-classroom and large group traffic safety education to all students.*

**Enforcement of Traffic Laws in the School Areas**

Parents and school administrators indicated that the presence of law enforcement in the school areas is currently low. **Enforcement of traffic laws** as well as safe behaviors actively informs the community of the importance of safety. It also provides consistency in desirable behaviors and discourages undesirable behaviors through establishing consequences to these actions. Speed limits, no parking zones, and anti-jaywalking laws are ineffective unless they are enforced.

In 2006, Ladera Ranch Town Manager Dennis Javens made a written request of CHP Commissioner Mike Brown to deploy more traffic patrols in Ladera Ranch. According to Chuck Gibson, President of the Ladera Ranch Transportation Club, Captain S. Houston, commanding officer of the CHP area office based in San Juan Capistrano is attentive to the needs of Ladera Ranch. She is receptive to calls for more traffic enforcement in Ladera Ranch and works to allocate resources effectively. The area office is part of a much larger California Highway Patrol organizational and budgeting authority that stretches from San Diego to Santa Ana, including several counties. In order to get additional resources, it will require combined efforts of county, state and local authorities to focus attention on the traffic enforcement needs of the entire South Orange County unincorporated area. The Transportation Club is facilitating efforts to focus more attention on the need for additional traffic enforcement resources. Gibson anticipates there will be ongoing discussions regarding this matter throughout 2007. C. Gibson, personal communication, December 28, 2006).
Increased law enforcement must be combined with other traffic safety measures in order to be effective. Specific areas of concern that can be alleviated through law enforcement are speeding vehicles, drivers failing to yield to pedestrians, and parking in the no stopping or no parking zones. One program that target specific motorist behaviors is the pedestrian safety enforcement operation (pedestrian safety sting). Studies have shown that enforcement programs aimed at motorists are more effective than those targeting pedestrians (Federal Highway Administration [FHWA], 2006). Programs that impose frequent and reasonable motorist penalties are also more effective than less frequent citations with higher penalties (FHWA, 2006). Increased traffic law enforcement should also include increased enforcement of parking restrictions.

**Pedestrian Safety Enforcement (Pedestrian Safety Sting)** - adapted from the Federal Highway Administration’s *How to Develop a Pedestrian Safety Action Plan.*

The pedestrian safety enforcement operation is designed to bring attention to laws requiring motorist to stop for pedestrians at all marked and unmarked crosswalks. Officers establish the safe stopping distance to a crosswalk and place cones at this location. A plain-clothes officer steps into the crosswalk just before a car passes the cone. If the driver fails to stop for the pedestrian, a warning or citation is given. Video surveillance can help enforce the law in case of a dispute. Media coverage prior to the event is helpful in informing and educating drivers. The pedestrian safety sting may be effective in Ladera Ranch in areas where drivers continuously fail to stop for pedestrians including the roundabouts and at mid-block crosswalks. A step-by-step guide to conducting a pedestrian safety sting can be found in Appendix E.

**Recommendation for the California Highway Patrol and the Orange County Sheriff’s Department:**

Increase traffic law enforcement in the areas adjacent to the schools, focusing specifically on speeding, drivers failing to yield to pedestrians, and parking violations.
Encouragement and Incentives

The schools and community currently do not offer any encouragement or incentive programs to promote walking or bicycling. Parents responding to the survey expressed a desire for the school to offer incentives to walk. Encouragement activities include special events to promote walking and bicycling to school and incentive programs to continue walking and bicycling year-round. Encouragement activities increase awareness of the alternatives to driving and provide opportunities to educate parents and students about safety and fitness. Through encouragement, the community can increase the number of pedestrians and bicyclists thereby increasing visibility to drivers (the safety in numbers approach).

Each school should encourage participation in organized walking and bicycling events. These events can be organized by the school, the PTA, private companies (such as bicycle shops), community groups, or through LARCS. Widely publicized events include:

- **Walk-to-School Day** - takes place annually in October, information can be found at www.walktoschool-usa.org
- **International Walk to School Week** - takes place the first week of October, information can be found at www.cawalktoschool.com

Each website provides information on how to organize, publicize, and implement events as part of these national and international events.

Excerpts from the *Orange County Walk to School Tool Kit* including organization

**Figure 26. Bike-to-School Day**

and publicity tools can be found in Appendix E. “Although Walk to School Day events cannot guarantee that students will continue to walk, they are a positive first step. With the large number of people walking, parents and children feel safer and have fun. Walk to School Day may help skeptical parents or school personnel to see the value of walking, so that they support ongoing activities” (NHTSA, 2002, p. 9).

Other communities have designated a particular day or days of the week for parents and students to make an effort not to drive. Catchy names for these days include: Marching Mondays, Trekking Tuesdays, Walking or Wheeling Wednesdays, Thundering Thursdays, or Fuel Free and Footloose Fridays (Way to Go, 2006). These events make walking and bicycling to school a social activity. Children and parents have the opportunity to interact with others while having an enjoyable experience. “The most successful [Marin County] schools participate in at least one of the all-school events offered” (Nelson/Nygaard Consulting Associates, 2005, p. 23).

Outside of the school commute, neighborhood walks and bicycle rides provide opportunities to reassure parents that the school commute is safe and secure. They can also educate residents on safe practices. One idea from Marin County is a Ride-N-Seek rolling treasure hunt where children are given maps to explore the community by bicycle while searching for prizes.

Incentive programs should be continued throughout the school year. Public recognition is an effective incentive. Businesses can sponsor prizes for the student or classroom that walks or bicycles the most. Awards can be given out by the schools at assemblies. Walk and Bike Across America (www.saferoutestoschools.org/walk) is a program which tracks the number of miles a classroom “travels” around the country. Learning about the destinations traveled to can be an incentive in itself.

**Recommendation for the Ladera Ranch Town Manager:**

*Work with LARCS and the appropriate school authorities to organize special events to encourage walking and bicycling.*
Recommendation for all schools:
Organize incentive programs for students walking or bicycling to school.

Engineering to Reduce Speeding Throughout the Community

Speeding in the school zones is a common concern for parents throughout the community. The posted speed limit is 25 miles per hour in the school zones and signage is placed according to the standards found in the Orange County Traffic Manual and as recommended by the California MUTCD. However, anecdotal evidence indicates that motorists drive above the speed limits. Law enforcement is unable to cover all of the school areas at all times. Traffic calming devices including roundabouts have been installed in various places throughout the community, but speeding is still a problem.

In a pedestrian-vehicle crash, the speed of the vehicle is a large factor determining the probability of injury or fatality. The chart in Figure 27 illustrates that a pedestrian hit by a car traveling 30 miles per hour has only a five percent chance of not being injured, but a forty-five percent chance of dying (National Safe Routes to School, n.d.). Reducing the actual speed of cars around the schools can help reduce the chances of an injury or fatality in the case of an accident.

Figure 27. Pedestrian Injuries at Impact Speeds

Source: National Safe Routes to School, n.d.
Permanent vehicle speed feedback signs can be installed on poles in conjunction with the school zone speed limit signs. See Figure 28. The signs indicate the approaching car's speed. If the radar detects a vehicle speed well over the speed limit, it flashes a message to slow down without showing the actual speed. This discourages drivers from traveling at a high speed in order to see the high number register. The sign can be solar powered or connected to the power grid. Jurisdictions in Orange County with speed feedback signs include the cities of Fullerton and Garden Grove.

“In a recent national survey, traffic engineers and other safety professionals ranked driver feedback signs as the most effective traffic-calming method for neighborhoods and school zones. Researchers suggest that the sign’s effectiveness is due to the fact that, unlike static speed signs that are often ignored, feedback signs refocus driver attention on his/her own speed rather than on their personal evaluation of driving conditions” (Dixon, 2006, p. 1). Studies also showed that the feedback signs do not just have temporary effects. They remain effective in slowing cars well after they are installed (Dixon, 2006).

**Figure 28.** Speed feedback sign in Fullerton, CA

Source: Author

**Recommendation for the County of Orange:**

**Install permanent vehicle speed feedback signs in conjunction with the school zone speed limit signs on Sienna Parkway and O’Neill Drive.**

Landscaping and Traffic Safety

Parents responding to the survey expressed concerns specifically about overgrown landscaping blocking the line of sight at the roundabouts and in the medians adjacent to
the roundabouts. One parent was also concerned with the high landscaping and the potential for crime between the Sienna Botanica Trail and Sienna Parkway.

Maintaining landscaping along the public right-of-ways in Ladera Ranch is the responsibility of LARMAC with the assistance of their landscaping contractors. Through various traffic studies by the County of Orange, other sensitive sites have been identified in Ladera Ranch for which proper trimming of landscaping would improve traffic safety.

**Recommendation for the Ladera Ranch Maintenance Corporation:**

Together with the County of Orange Resources and Development Management Department [RDMD] - Operations and Maintenance Division, create a schedule and assign duties to a liaison to regularly evaluate and resolve line of sight and visibility problems created by overgrown landscaping.

**Evaluation of Improvements and Programs**

An important component of a successful pedestrian and bicyclist safety program is evaluating the improvements and programs regularly. Initial data, much of which is included in this report, provides a baseline to measure from. **Data collection** should include:

- The current number of students who walk or bicycle to school.
- The number of students within ¼ or ½ mile of the school (a comfortable walking or bicycling distance).
- Physical barriers to walking or bicycling including current conditions of sidewalks and crosswalks adjacent to the schools.
- Preference and attitudinal barriers to walking or bicycling.
- Statistics on accidents and injuries.
- Traffic law infractions.
- Dangerous behavior including bullies.
- Current educational and encouragement programs.
Data should be collected at the beginning and end of each school year in order to track the successes of the improvements and to make adjustments as needed. The program will need to accommodate growth and change in the community. Evaluation can be a joint effort between the School Traffic Safety Subcommittee and the schools themselves. Methods of data collection can be simple. For example, the number of students who walk and bicycle to school can be counted by the teachers through a show of hand in the classroom. Select questions from the initial survey should be repeated in the annual Ladera Ranch Traffic and Transportation Survey.

Recommendation for the Ladera Ranch Transportation Club:
Assign duties to the School Traffic Safety Subcommittee to evaluate site conditions and programs every six months.
Chapter 10
Site Specific Recommendations: Chaparral Elementary School

Figure 29. Recommended improvements at Chaparral Elementary

Expedite pavement lighting and provide overhead signage and flashing lights across Sienna Pkwy.

Source: Author

Sienna Parkway and Flintridge Avenue

The intersection and crosswalks at Sienna Parkway and Flintridge Avenue were found to be unsafe by parents because of the **high speed of cars on Sienna Parkway, drivers failing to yield to pedestrians, and driver inattention**. See Figure 29 for location. The intersection is currently monitored by a crossing guard during the hours before and after school, but the survey respondents still feel the intersection is unsafe. The County of Orange
repainted the crosswalks as yellow ladder-style in January of 2007. This may increase driver awareness of the crosswalk and pedestrians, but data was not available reflecting the recent change. The crosswalk across Sienna Parkway would benefit from increased visibility and technology alerting drivers of not only the crosswalk, but specifically times in which there is a pedestrian in the crosswalk.

The County of Orange plans to install in-pavement lighting at the crosswalk crossing Sienna Parkway by June 2008 (personal communication from Wei Zhu to Chuck Gibson, December 26, 2006). A series of lights will be embedded into the pavement along both crosswalk lines. These lights are typically activated by a pedestrian push button. In-pavement lighting has been found effective in increasing driver awareness of pedestrians during times of low visibility—i.e. at night or in foggy conditions (Orange County Resources and Development Management Department, 2007). In-pavement lighting has limited effectiveness for school crossings because they are difficult to see under normal daylight conditions. (Oregon Department of Transportation, 1995). In addition to the in-pavement lighting, overhead signage with flashing lights (see Figure 30) may be more effective in increasing driver awareness of pedestrians.

Figure 30. Overhead Signage and Lights, Irvine, CA

Source: Author
Recommendations for the County of Orange:

**Expedite the installation of in-pavement lighting at the crosswalk at Sienna Parkway and Flintridge Avenue to increase visibility of pedestrians to motorists.**

**Investigate the installation of overhead signage with flashing lights in conjunction with the crosswalk at Sienna Parkway and Flintridge Avenue.**

Second Street and Main Street

The intersection of Second Street and Main Street has both **high traffic volume and high numbers of children crossing**. See Figure 29 for location. The intersection is controlled by a four-way stop, but the **drivers do not always stop for pedestrians**. The children also find it difficult to cross at this intersection and have been seen running or crossing without watching for traffic. The school staff currently provides assistance at this area when they are available. A permanent crossing guard would provide assistance and help increase driver awareness during peak hours.

Crossing guards help children safely cross the street at key locations and increase visibility of pedestrians to motorists. “The presence of adult crossing guards can lead to more parents feeling comfortable about their children walking or bicycling to school. While the primary role of an adult school crossing guard is to guide children safely across the street, children also remain responsible for their own safety. In this manner, a guard plays another key function - a role model helping children develop the skills necessary to cross streets safely at all times” (Pedestrian and Bicycle Information Center, n.d., p. 1). A diagram illustrating the process for requesting a crossing guard in the County of Orange is provided in Appendix E.

A request for an adult school crossing guard was considered by the Traffic Committee in January of 2003. At that time, the Traffic Committee determined that the “all-way stop provided an appropriate level of school pedestrian safety given the traffic and pedestrian patterns currently existing during school activities” (OCTC, 2003, p. 2). Since 2003,
enrollment has increased at Chaparral Elementary School from 728 to approximately 850 students (Education Data Partnership, 2007) and presumably both the number of vehicles and pedestrians using this intersection has increased as well.

**Recommendation for the County of Orange:**

Prioritize updating the 2003 study for the provision of an adult school crossing guard at the intersection of Second Street and Main Street because student enrollment has increased.
Chapter 11
Site Specific Recommendations: Ladera Ranch Elementary and Middle Schools

Figure 31. Recommendations for improvements at Ladera Ranch Elementary and Middle

Install curb extensions along Sellas North.

Provide crossing guard at Avendale Blvd and Sellas North.

Intersections Along Sellas North

Along Sellas North, three intersections were indicated as unsafe by the parents- Sellas and Avendale, Sellas and Snapdragon, and Sellas and Sienna. See Figure 31 for location. At these locations, the parents are concerned with *speeding, drivers fail to yield, and parked cars blocking the view at the corners*. The intersections currently have “No Stopping” signs.
placed near the corners and there are red curb markings near the Snapdragon intersection, but the researcher observed cars continuing to park in these areas.

Curb extensions or bulb-outs are traffic calming techniques that shorten the distance the pedestrian has to cross, narrow the perceived width of the roadway causing drivers to slow, and physically prevent cars from parking too close to the intersections. They are typically used on streets with on-street parking. They widen the sidewalk, reducing the street width. (See Figure 33.) Curb extensions along Sellas North would prevent cars from parking too close to the intersections. Curb extensions are currently used adjacent to Chaparral Elementary along Second Street (see Figure 32).

**Figure 32.** Curb extensions along Second Street, Ladera Ranch

![Curb extensions along Second Street, Ladera Ranch](Source: Author)

**Figure 33.** Diagram of Typical Curb Extension

![Diagram of Typical Curb Extension](Source: *Making Streets That Work*, 1995)

**Recommendation for the County of Orange:**

*Investigate the installation of curb extensions to reduce street width at the four intersections along Sellas Road North.*
Avendale Boulevard and Sellas Road North

Parents indicated that the intersection of Avendale and Sellas North is an area of concern due to dangerous motorist behaviors. See Figure 31 for location. These unsafe behaviors include speeding and failing to yield to pedestrians. Parents were also concerned about the high volume of cars through this intersection and children crossing without the assistance of a crossing guard. A crossing guard at this location would increase driver awareness of pedestrians and assist children in crossing safely.

Crossing guards help children safely cross the street at key locations and increase visibility of pedestrians to motorists. “The presence of adult crossing guards can lead to more parents feeling comfortable about their children walking or bicycling to school. While the primary role of an adult school crossing guard is to guide children safely across the street, children also remain responsible for their own safety. In this manner, a guard plays another key function - a role model helping children develop the skills necessary to cross streets safely at all times” (Pedestrian and Bicycle Information Center, n.d., p. 1). A diagram illustrating the process for requesting a crossing guard in the County of Orange is provided in Appendix E.

The intersection of Avendale and Sellas North is currently controlled by an all-way stop. There have not been any studies done by the County of Orange to assess the need for an adult crossing guard at this intersection.

**Recommendation for the County of Orange:**

*Consider placing an adult school crossing guard at the intersection of Avendale Boulevard and Sellas Road North.*
Chapter 12
Site Specific Recommendations: Oso Grande Elementary School

Figure 34. Recommended improvements at Oso Grande Elementary

- Provide ladder crosswalk and signage across Sienna Pkwy.
- Install signage and paint curbs at Sienna Pkwy “No Stopping” zone.
- Provide additional crossing guard at Sienna Pkwy and O’Neill Drive.

Source: Author

Sienna Parkway and O’Neill Drive

The roundabout at Sienna Parkway and O’Neill Drive was identified as unsafe by survey respondents because of the speed of the cars, driver inattention, and drivers failing to yield to pedestrians. See Figure 34 for location. There is currently one crossing guard who assists children crossing from all directions. Parents, Principal Martin, and the researcher all
noted that it is difficult for a single crossing guard to monitor and control the large area of the roundabout; therefore **pedestrians often do not wait for the crossing guard to assist them.**

A request for an adult crossing guard at the intersection of Sienna Parkway and O’Neill Drive was made and granted in 2006. The Traffic Committee recommended that a crossing guard be placed at this intersection because of the high traffic volume and “in anticipation of more students being enrolled by the beginning of the next school year” (OCTC, 2006, p. 3). At the time of the study, the enrollment at Oso Grande Elementary was approximately 325. (OCTC, 2006). Currently enrollment at Oso Grande is approximately 520 (Duncan, 2006b) with expected growth in the upcoming years.

An additional crossing guard would reduce the need for a single crossing guard to monitor all directions. The crossing guard would also increase visibility and cause drivers to be more aware of pedestrians. A diagram illustrating the process for requesting a crossing guard in the County of Orange is provided in Appendix E.

**Recommendation for the County of Orange:**

**Consider placing an additional adult school crossing guard at the intersection of Sienna Parkway and O’Neill Drive.**

**Sienna Parkway and Covenant Hills Drive**

Many parents are concerned with the **unmarked pedestrian crossing** across Sienna Parkway at Covenant Hills Drive. See Figure 34 for location. An entrance and curb ramp to the Sienna Botanica Trail is located at this intersection. Parents responding to the survey indicated that their children use the trail or would like to use the trail to get to and from school. Parents indicated that the **high speed of cars** was a concern for their children crossing in this area.
As of February 2007, no studies of this intersection had been undertaken by the County of Orange. The County of Orange should prepare a study of this intersection to determine if warrants are met for the school crossing. Appropriate signage warning drivers of pedestrians should be provided in conjunction with the crosswalk.

**Recommendation for the County of Orange:**

Consider a ladder-type crosswalk with appropriate signage crossing Sienna Parkway at Covenant Hills Drive.

**Sienna Parkway- “No Stopping” area in front of school**

Parents continuously stop or park in the “No Stopping” area in front of Oso Grande Elementary, blocking the bicycle lane and reducing the lane width for driving. See Figure 28 for location. There is standard signage along the area, but not immediately in front of the school entrance where motorists are stopping. Motorists may be more aware of and compliant with the “No Stopping” zone if there is signage placed immediately in front of the school entrance and if the curb is painted red. The markings should be coupled with active traffic law enforcement and citation of offenders.

**Recommendation for the County of Orange:**

Place additional signage directly in front of the Oso Grande Elementary and paint curb markings to reinforce the “No Stopping” area.

**Covenant Hills construction entrance**

Parents are concerned with the area on Sienna Parkway at the Covenant Hills construction entrance because of speeding cars, high volume of traffic, driver inattention, failing to stop at stop sign, and reduced line of sight. The construction traffic is temporary and should diminish with the completion of the Covenant Hills village. Continual education of the workers using this entrance will increase awareness of the problem and provide guidance on safe driving behaviors.
Chapter 12. Site Specific Recommendations: Oso Grande Elementary School

**Recommendation for the Ladera Ranch Town Manager:**

Work with the appropriate authorities to provide traffic safety educational materials to the companies utilizing the construction entrance.

**Encouragement to Reduce Congestion Around the School**

Reducing the number of vehicles in the immediate vicinity of the schools will increase the safety of pedestrian and bicyclists during the peak hours. Oso Grande Elementary is located in an area without neighborhood street parking. Parents should be encouraged to park in parking lots or on streets outside of the immediate vicinity of the schools, thereby reducing the number of vehicles entering the school parking lot or blocking the adjacent streets and intersections. Parents can park and walk their children the rest of the way or have their children walk in groups. This strategy works well for those who live too far or are in a rush before or after school (National Center for Safe Routes to School, n.d.). It also promotes physical activity for a portion of the school commute.

An alternative to using the school parking lot, which is very congested, would be to use the Covenant Hills Park lot or the water park lot. Parents have requested that there be a walkway constructed from the Covenant Hills Park to the school for convenient access. The designated parking lots would need to be coordinated with LARMAC and be monitored so they do not have the same congestion as the school area does now.

**Recommendation for the school authorities:**

Work with the Ladera Ranch Town Manager to encourage parents to reduce the number of vehicles in the immediate vicinity of Oso Grande Elementary School.
Chapter 13
Funding for Improvements and Programs

Funding for safety improvements and programs can come from a variety of sources. Grants are available from government agencies for engineering, education, and enforcement programs. Additional resources can be used to supplement these efforts with encouragement programs. Adequate and sustained funding is critical to the success of any improvement or program. LARCS; the Parent Teacher Associations; community, youth or church groups; local businesses; and private individuals may also be interested in sponsoring safety programs. This may be especially appealing in educational and encouragement programs where the sponsor would benefit from publicity.

California Safe Routes to School Grants

The California Safe Routes to School program, administered by the California Department of Transportation [Caltrans], provides full funding awards for infrastructure (capital) and non-infrastructure (educational and encouragement) projects. California will receive $68mil in federal Safe Routes to School funds authorized by Section 1404 of SAFETEA-LU (California Department of Transportation, n.d.). Infrastructure projects must serve children in grades K through 8th and be located within a two mile radius of the school. Non-infrastructure projects are “activities intended to change community behavior, attitudes, and social norms to make it safer for children in grades K through 8th to walk and bicycle to school.” 70% of the funds are set aside for infrastructure projects, 20% for non-infrastructure projects, and 10% for a statewide consultant to develop standardized training and promotional materials. The application and grant information can be found on the Caltrans website (www.dot.ca.gov/hq/LocalPrograms/saferoute2.htm).

California Office of Traffic Safety Grants

The California Office of Traffic Safety awards grants for pedestrian and bicycle safety education as well as enforcement. Examples of previous grant awarded projects include
bicycle rodeos and safety presentations at schools, increased enforcement of helmet laws, and placement of speed monitoring trailers in school zones during peak hours. Local county government agencies, school districts, and emergency service providers are eligible to apply for the annual grants. “Non-profit, community-based organizations are eligible to receive funding only through a political subdivision of the state “host” agency” (California Office of Traffic Safety, n.d., p. 1). Proposals are evaluated based on potential traffic safety impacts, seriousness of identified problems, value of funding, etc. “Grants Made Easy” is a process specifically for local law enforcement agencies. One of the programs is Selective Traffic Enforcement Program (STEP) which provides additional funding for specified traffic law enforcement activities. The applications and more information can be found on the Office of Traffic Safety website (www.ots.ca.gov/grants/default.asp).
References


References


Orange County Traffic Committee. (2003a, January 16). Committee Report Item A. Unpublished document. (Available from the County of Orange, Roads Division, 300 North Flower Street, 5th Floor, Santa Ana, CA 92703-5000)

Orange County Traffic Committee. (2003b, January 16). Committee Report Item B. Unpublished document. (Available from the County of Orange, Roads Division, 300 North Flower Street, 5th Floor, Santa Ana, CA 92703-5000)

Orange County Traffic Committee. (2004a, September 16). Committee Report Item A. Unpublished document. (Available from the County of Orange, Roads Division, 300 North Flower Street, 5th Floor, Santa Ana, CA 92703-5000)

Orange County Traffic Committee. (2004b, September 16). Committee Report Item B. Unpublished document. (Available from the County of Orange, Roads Division, 300 North Flower Street, 5th Floor, Santa Ana, CA 92703-5000)

Orange County Traffic Committee. (2006a, April 20). Committee Report Item B. Unpublished document. (Available from the County of Orange, Roads Division, 300 North Flower Street, 5th Floor, Santa Ana, CA 92703-5000)

Orange County Traffic Committee. (2006b, June 15). Committee Report Item B. Unpublished document. (Available from the County of Orange, Roads Division, 300 North Flower Street, 5th Floor, Santa Ana, CA 92703-5000)


Appendix A
Data Collection Tools

Study Information Sheet- Survey
Survey Questions
Study Information Sheet- Interviews
In-Person Interview Questions
Site Inventory
Contacts
Help Improve Pedestrian and Bicyclist Safety for Children in Ladera Ranch

University of California, Irvine

Lead Researcher
Michelle Kou, Graduate Student
Department of Planning, Policy, and Design
(949) 241-2143 or mkou@uci.edu

Faculty Sponsor
Kristen Day, Associate Professor
Department of Planning, Policy, and Design
(949) 824-5880 or kday@uci.edu

- You are being asked to participate in a research study conducted by Michelle Kou, Graduate Student at the University of California, Irvine, about pedestrian and bicyclist safety for children in Ladera Ranch. The findings of this study will be available through the Ladera Ranch Transportation Club in the Spring of 2007.

- Attached is a survey that will take you approximately ten minutes to complete. After you have completed the survey, please return it by ______________ via mail it to the Lead Researcher at: Michelle Kou
  Department of Planning, Policy and Design
  202 Social Ecology I
  Irvine, CA 92697-7075

- You can also complete the survey online by going to:
  http://www.surveymonkey.com/s.asp?u=908092889608

- There are no direct benefits from participation in the study. However, this study may help increase the safety of children walking and bicycling in Ladera Ranch.

- Participation in this study is voluntary. If you do not wish to participate in the survey, simply do not complete or return it. You may also choose to skip any questions in the survey.

- You will not be paid for your participation in this research.

- No information that personally identifies you will be collected with this survey.

If you have any comments, concerns, or questions regarding the conduct of this research, please contact the researchers listed at the top of this form. If you are unable to reach the researchers listed at the top of the form and have general questions, or you have concerns or complaints about the research or questions about your rights as a research participant, you may contact the University of California, Irvine, Office of Research Administration by phone at (949) 824-6662, by e-mail at IRB@rgs.uci.edu or at University Tower- 4199 Campus Drive, Suite 300, Irvine, CA 92697-7600.
Pedestrian and Bicyclist Safety for Children in Ladera Ranch

Survey Questions

1. What school does your child attend?
2. What grade is your child in?
3. What village or district of Ladera Ranch do you reside in? If you live outside of Ladera Ranch, what city do you live in?

4. How does your child get to school on a typical morning?
   a. walk alone or with other children
   b. bicycle alone or with other children
   c. walk with an adult
   d. bicycle with an adult
   e. driven in an automobile- non-carpool
   f. driven in an automobile- carpool
   g. take the bus

5. How does your child get home on a typical afternoon?
   a. walk alone or with other children
   b. bicycle alone or with other children
   c. walk with an adult
   d. bicycle with an adult
   e. driven in an automobile- non-carpool
   f. driven in an automobile- carpool
   g. take the bus

6. If your child is driven to school what are the reason(s) why? (You may check more than one.)
   a. I drop them off on my way to work or pick them up on my way home.
   b. A member of our family has a disability that prevents walking or bicycling.
   c. We are in a rush.
   d. I am concerned about crime.
   e. I am concerned about traffic safety.
   f. The school is too far from home to walk or bicycle.
   g. Other ____________________________________________

7. Do you feel the intersections or crosswalks along the routes to school are safe?
   a. yes
   b. no

8. If you feel the intersections or crosswalks are unsafe, are there particular locations that you are concerned with?
9. What causes your concern? (physical design of the intersection/crosswalk, pedestrian behavior, motorist behavior, etc.)
10. Do you feel the streets and sidewalks along the routes to school are safe?
   a. yes
   b. no

11. If you feel the streets or sidewalks are unsafe, are there particular locations that you are concerned with?

12. What causes your concern? (physical design of the sidewalk or street, pedestrian behavior, motorist behavior, etc.

13. Do you feel that the school provides a safe place to store bikes?
   a. yes
   b. no

14. Do you want your child to walk or bicycle to school more often?
   a. yes
   b. no

15. Are there any other comments or concerns relating to student pedestrian safety or school area safety you would like to share with us?
University of California, Irvine
Study Information Sheet

INTERVIEWS

for

Pedestrian and Bicyclist Safety
For Children in Ladera Ranch

Lead Researcher
Michelle Kou, Graduate Student
Department of Planning, Policy, and Design
(949) 241-2143 or mkou@uci.edu

Faculty Sponsor
Kristen Day, Associate Professor
Department of Planning, Policy, and Design
(949) 824-5880 or kday@uci.edu

- You are being asked to participate in a research study conducted by Michelle Kou, Graduate Student at the University of California, Irvine, about pedestrian and bicyclist safety for children in Ladera Ranch.

- The research procedures involve an interview that will last approximately one hour. With your permission, the interview will be audio recorded.

- The only foreseeable discomfort associated with the study is the invasion of your privacy as the study may ask you about your opinions on certain topics. There are no direct benefits from participation in the study. However, this study may help increase the safety of children walking and bicycling in Ladera Ranch.

- The findings of this study will be available through the Ladera Ranch Transportation Club in the Spring of 2007.

- Participation in this study is voluntary. You may refuse to participate or discontinue your involvement at any time without penalty. You may choose to skip a question as well as decline to be audio taped.

- You will not be paid for your participation in this research.
All research data collected will be stored securely and confidentially. If you choose to be recorded, the tapes will be stored in a secure office and destroyed after three years. No information that personally identifies you will be disclosed unless you consent to use of your name in the report of results.

The research team, authorized UCI personnel, and regulatory entities such as the FDA, may have access to your study records to protect your safety and welfare. Any information derived from this research project that personally identifies you will not be voluntarily released or disclosed by these entities without your separate consent, except as specifically required by law.

If you have any comments, concerns, or questions regarding the conduct of this research, please contact the researchers listed at the top of this form.

If you are unable to reach the researchers listed at the top of the form and have general questions, or you have concerns or complaints about the research or questions about your rights as a research participant, you may contact the University of California, Irvine, Office of Research Administration by phone at (949) 824-6662, by e-mail at IRB@rgs.uci.edu or at University Tower- 4199 Campus Drive, Suite 300, Irvine, CA 92697-7600.
Lead Researcher: Michelle S. Kou  
Pedestrian and Bicyclist Safety for Children in Ladera Ranch

In-Person Interview Questions

1. What is the enrollment for your school?
2. Do you expect any significant changes to enrollment in the next five years?
3. Do many children walk or bicycle to school?
4. If not, what do you think are the reasons for not walking or bicycling?
5. Do you feel Ladera Ranch is safe for child pedestrians and bicyclists?
6. If not, are there specific areas, intersections or streets that you feel are unsafe?
7. Why do you feel they are unsafe? Are there specific physical design concerns? Behavior concerns? Enforcement concerns?
8. Does the school have any programs currently in place to increase the safety of pedestrians and bicyclists?
9. If so, please describe the programs.
10. Does the school have any programs currently in place to increase the numbers of pedestrians and bicyclist?
11. If so, please describe the programs.
12. Would the school and the school district be receptive to implementing pedestrian and bicyclist safety education programs?
13. What are the barriers, if any, to implementing such programs?
14. What types of programs would be most feasible?
15. Do you think parents would be supportive of such programs?
16. Have parents expressed concerns about pedestrian and bicyclist safety around the schools?
17. If so, how have those concerns been documented?
Site Inventory
Name of School:
Date:

1. Are the sidewalks continuous along the route?

2. Are the sidewalks in good condition?

3. Where are the crosswalks and what type are they?

4. Are there curb ramps at intersection crosswalks?

5. Do the drivers yield to pedestrians?

6. Are there obstacles blocking the sidewalk?

7. Is there secure and convenient bike parking?

8. Is there sufficient operating width for bikes?

9. Are there clearly marked red zones?

10. Are there clearly marked load/unloading zones?
11. Are there clearly marked bus zones?

12. Are the roads in good condition?

13. Where are the bikeways?

14. What is the curb radii?

15. What is the behavior of the motorists?

16. What is the behavior of the pedestrians?

17. What is the behavior of the bicyclists?

18. Are there sufficient sight distances?

19. Are there sufficient sight distances for people under 5’ tall?
20. Is there adequate signing?

21. Is there adequate lighting?

22. Where are the crossing guards?

23. How many vehicle lanes are there for cars (incl. turning lanes)?

24. What type of housing units are surrounding the school site?

25. What community facilities are surrounding the site?

26. Is there a buffer (landscape or parked cars) between the sidewalk and street?

27. Are there other trails/paths adjacent to the school site?

28. Is the sidewalk shaded by trees?
Appendix B
Ladera Ranch Transportation Club
2005 Traffic Issues Survey Results
Ladera Ranch - Overview*

- Total number of residential units as of 8/31/05 is 6,276
- 6 Villages and 3 Districts with a mix of single family homes, Townhomes/Condominiums and Apartments
- 115 Neighborhoods, 15 of which are Neighborhood Corporations
- 7 apartment communities
- Development acres 4,000 - 1,600 open space and 2,400 developed acres

* Source: LARMAC Annual Report
Background and Summary of Findings

Background

- In the fall of 2005, Ladera Ranch residents were solicited by the Ladera Ranch Transportation Club to complete a survey on the traffic issues that are of the greatest importance to them.
- The specific needs that they were asked to rank in order of importance are as follows:
  - More traffic signals
  - More stop signs
  - More traffic controls
  - Specially-designed crosswalks
  - Additional pedestrian bridges
  - Additional law enforcement
  - Driver education and training

- A total of 100 residents completed the survey, including many comments on traffic issues. Responses were either via fax, mail, or email.
Summary of Findings

- Topline -

- There are several highly interrelated areas of concern that residents expressed both in their ranking of the “importance issues”, and in their qualitative comments. Overall, residents are alarmed by aggressive driving – speeding and failure to yield right of way - and a distinct lack of law enforcement.
  - The highest-ranked importance issue by far was the need for additional law enforcement around Ladera Ranch.
  - The most common qualitative complaint was the speed at which people drive throughout the community.
  - Of related import, respondents see drivers not only ignoring speed limits, but also disregarding a wide range of traffic laws and rules of the road – whether it be parking, roundabout guidelines, pedestrian safety, etc.
  - There is also a clear impression that due to perceived insufficient law enforcement, other drivers feel free to drive as they please without fear of consequences.

- Clearly, residents are not pleased with the way their neighbors and fellow members of the community are conducting themselves on the road, and they want violators to be cited appropriately.

- Additional Topics -

- Besides speeding and speed limits/enforcement, there was sufficient volume of complaints and concerns related to other facets of driving in the community worth mentioning:
  - Roundabouts – There is clear frustration and a feeling that other drivers really don’t understand how to use roundabouts, leading to dangerous situations and “near miss” accidents. Overall, respondents seek a combination of driver education, increasing law enforcement and better design of roundabouts.
  - Parking – Particularly around condo and apartment complexes, residents are concerned about the volume of traffic parked on key streets and the resultant driving difficulties/dangers. Suggestions for improvement focused on intensified law enforcement.
  - Pedestrian Safety – Overlapping with school and child safety concerns are general worries about pedestrian safety around drivers who speed, making sure pedestrians have safe alternatives for crossing streets, and ideas around making crosswalks more visible, plentiful, and safe.
Summary of Findings
- Additional Topics -

- There were also several specific streets and intersections which were causing angst among pockets of residents in certain areas. However, it is important to keep in mind that 1) the villages of Avendale and Oak Knoll were over-represented among survey respondents, and 2) people are less likely to respond with specific comments if they do not have a specific complaint.
  - Cecil Pasture - Residents of Bridgepark (Chambray and Westcott) are highly concerned about the volume and velocity of traffic using this as a through street.
  - Benjamin - Residents of Oak Knoll are expressing concern about excessive speeds on Benjamin, particularly during rush hours when it is perceived that non-Ladera Ranch residents are cutting through to avoid intersection of Crown Valley near Antonio. It appears residents seek a review of the overall design of Benjamin and its impact on adjacent neighborhoods. There are issues of noise, traffic and pedestrian safety.
  - Sklar - Residents of Avendale are concerned about speeds on Sklar and the safety of kids and pedestrians along this street. Suggestions pertaining to design include better signage and the installation of speed bumps.
  - Roanoke and O’Neill - Both residents making turns at and driving through this intersection expressed concerns about safety, and a desire for a roundabout to be installed or some other form of traffic control to permit safe turns.
  - School Zones - Especially during drop-off and pick-up hours, there are numerous worries about traffic, congestion, driver behavior, and pedestrian and child safety.

Traffic Issues - Highest Priorities

- Resident respondents clearly identified the need for additional law enforcement as their greatest traffic-related concern in Ladera Ranch – both on a top box basis (rated the #1 priority out of 7 by 39%) and a top three box basis (rated #1, #2 or #3 out of 7 by 69%).
- Additional pedestrian crosswalks and traffic controls were also considered one of the top three priorities by more than half of the sample.
- In contrast, very little need for additional traffic signals was expressed.
Appendix C
School Attendance Boundaries
Appendix D
Ladera Ranch Community Map
Appendix E
Implementation Resources

Helpful Internet Resources

Excerpts from Orange County Walk to School Day Tool Kit

Education Excerpts from How to Start Your Own Walk-to-School, Bike-to-School Traffic Reduction and Safety Program

How to Conduct a Pedestrian Crossing Action

Flowchart- Crossing Guard Approval Process
Helpful Internet Resources

America Walks
http://www.americawalks.org/

Bikes Belong Coalition
http://bikesbelong.org

California Department of Health Services
http://www.dhs.ca.gov/routes2school/

California Safe Routes to School Grants
http://www.dot.ca.gov/hq/LocalPrograms/saferoute2.htm

California Walk to School Headquarters
http://www.cawalktoschool.com/

Federal Highway Administration
http://safety.fhwa.dot.gov/saferoutes/index.htm

International Walk to School Day
http://www.walktoschool.org/index.cfm

Keep Kids Alive Drive 25
http://www.keepkidsalivedrive25.org

National Center for Safe Routes to School
http://www.saferoutesinfo.org/

Online Walk and Bike Across America
http://www.saferoutestoschools.org/walk/

Transportation and Land Use Coalition
http://www.transcoalition.org/c/sr2s/index.html

Walk Boston- extensive in-class curriculum guide
http://www.walkboston.org/projects/safe_routes.htm

Walking Info
http://www.walkinginfo.org/
Tool Kit
Planning Guide to Conducting a Walk To School Day Program

Orange County

WALK
to
SCHOOL
DAY
Congratulations! You’ve taken the first step toward making positive changes in your community. Your participation in International Walk To School Day could result in:

- Safer routes to and from school
- School safety improvements
- Less automotive congestion around your school
- Neighborhood improvements
- Increased physical activity among students
- Families making healthy lifestyle changes
- Better relationship with surrounding business members

In this Tool Kit, you will find ideas that will help you, as a coordinator, plan a successful Walk To School Day/Week program.

This Tool Kit has been adapted from the Santa Ana Pedestrian Safety Project, originally funded by the California Office of Traffic Safety.

The following Orange County Safe Kids Coalition members and partners participated in the development and revision of this toolkit:

Margo Beauchamp, Orange County Sheriffs Department - Aliso Viejo Police Services
Kelly Broberg, County of Orange Chronic Disease and Injury Prevention Program
Sue Donelson, UC Irvine Calsafe Safe Communities Project
Juanita Juarez, Fullerton Police Department
Kathleen Kramer, Automobile Club of Southern California
Jim Lizzi, City of Irvine Traffic Engineer
Anita Lorz, Automobile Club of Southern California
Elaine Ma’ae, UC Irvine Center for Trauma & Injury Prevention Research
Berenis Quinones, County of Orange Chronic Disease and Injury Prevention Program
Bernadette Vargas, UC Irvine Santa Ana Pedestrian Safety Project
Diane Winn, UC Irvine Center for Trauma & Injury Prevention Research
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What is “International Walk To School Day”?

International Walk To School Day, held the first week in October, is an event that encourages adults and children to walk together with a purpose - to promote safety, health, physical activity and concern for the environment. Each adult and child is encouraged to complete a “Walkability Checklist” to pinpoint problems on the route to school and other sites. The "Walkability Checklists“ are reviewed to help the community establish pedestrian safety priorities or the greatest needs to be addressed. Since 2000, The University of California, Irvine has worked with 110 schools to participate in Walk To School Day. Internationally, thousands of children, adults and community leaders from communities across the United States, Canada, Europe and Australia join in on this event.

International Walk To School Day Promotes:

- **Safety** by teaching children safe walking skills and how to identify safe routes to school
- **Physical activity** through the “easiest-to-do” exercise
- **Awareness** of how walkable a community is and where improvements can be made
- **Healthier communities** with less traffic congestion, air pollution, and speeding at or near schools

Walk To School Week

Walk To School Day is part of Walk To School Week. The week can be designed to address pedestrian safety in general or specific aspects such as safe walking skills, pedestrian behavior, driver awareness, environmental affects, etc. A week allows for more opportunity to incorporate related lesson plans and to explore the many reasons to walk or bike to school.

Although International Walk To School Day is the first Wednesday in October, you can celebrate it anytime during the year.

Find out what other schools around the world are planning by visiting:

- [www.cawalktoschool.com](http://www.cawalktoschool.com)
- [www.walktoschool-usa.org](http://www.walktoschool-usa.org)
- [www.iwalktoschool.org](http://www.iwalktoschool.org)
The Event At A Glance

BEFORE - Planning The Event

- Assign someone to coordinate the event.
- Get approval from your school district office, if applicable.
- Identify a site and get support from the school principal or site director.
- Invite and involve staff, students, teachers, parents, local businesses, local law enforcement and local fire department.
- Organize “Walk Team” meetings to share ideas and plan activities.
- Obtain incentives to be given to participants via purchase or donations.
- Contact local businesses and service clubs to donate healthy breakfast foods.
- Put a notice in the school newspaper with safe walking, nutrition & physical activity tips.
- Post flyers and posters at the school, local markets and churches.
- Send the parent letter and Walkability Checklist home with students.
- Make sure daily announcements are made at the school.
- Ask your Principal for a copy of a Suggested Routes to School Map designed for your school and send it home to parents.
- Display banner, posters and yard signs.

DURING - Event Day

- Adults and children walk to school together and complete “Walkability Checklists.”
- Collect Walkability Checklists.
- Distribute stickers or other incentives to all participants.
- Host a safety assembly or other pedestrian safety related activity, if possible.
- Acknowledge and reward adults and students who participate in Walk To School Day.
- Be a role model...walk and have fun.

AFTER - Post-event Follow Up

- Recruit school staff, students, teachers, parents, law enforcement, city traffic engineer and policy makers, and local businesses to participate in your meetings.
- Schedule a meeting to review the “Walkability Checklists”.
- Establish priorities to be addressed based on the “Walkability Checklists.”
- Encourage school officials to work with city staff to create safer routes to schools.
- Identify short-term solutions in education and enforcement.
- Identify long-term solutions in engineering and policy.
- Speak at the local city council meeting to discuss pedestrian safety issues in your community.
- Plan future Walk To School activities within the same school year to keep the momentum going.
Program Materials

Walkability Checklist - master copy in English and Spanish
- Xerox enough copies for each student involved in the event.
- Ensure that children & adults complete together on the day of the event.
- Collect on event day and review results at the post-event meeting.

Sample letter to parents informing them about the event - English and Spanish
- Distribute the letter to parents informing them about the Walk To School Day Event.
- Recruit parent volunteers to help on the day of the event.

Incentives for participants
- Think about some incentives you may want to have for participants on Walk To School Day. These items can be donated by an outside agency or purchased by the school:
  * Stickers
  * Pencils
  * Granola bars
  * Key chains
  * Zipper pulls
  * Shoe laces
  * Ribbons
  * Juice

The following agencies and/or websites can help to make this event a success by providing resources and/or participating at your site:

- Orange County Safe Kids Coalition
- Local law enforcement agency
- Local city government
- Pedestrian and Bicycle Information Center (www.walkinginfo.org)
- Marin County Safe Routes To School (www.saferoutestoschool.org)
- California Department of Health Services (www.dhs.ca.gov/routes2school)
- California Center for Physical Activity (www.caphysicalactivity.org)
Reasons to promote Walk To School Day

- Walking to teach safe walking skills.
  - Of the children in California who reported problems walking to school, the top three problems they identified are:
    - Drivers do not yield to people crossing the street;
    - Drivers drove too fast; and
    - Sidewalks or paths start and stop.
- Walking to find out how “walkable” a community is and identify safe routes to school.
- Walking to promote permanent improvements to streets and sidewalks.
- Walking to reduce traffic congestion, pollution and speeds.
  - 21-27% of morning traffic is due to parents driving their children to school
- Walking together in a group versus walking alone.

- Walking to promote physical activity.
  - In California, one in three children and one in five teens is at risk of becoming overweight or already overweight.
  - In California, less than one in five children walk to school and approximately one in four walk home from school.
  - Only 31% of children who live within 1 mile of school make the trip on foot. Only 2% of school children who live within 2 miles of school are by bicycle.
  - Fewer than half of California children, ages 9-11, got the recommended one hour or more of moderate and/or vigorous physical activity per day.
  - An analysis by the California Department of Education that compared 2001 results of physical fitness testing with the Stanford Achievement Test, Ninth Edition (SAT 9), showed a significant relationship between academic achievement and levels of physical fitness in California students.
- Walking is especially good for your brain, because it increases blood circulation, oxygen and glucose that reach your brain.

- Walking to see how fun walking together can be.
- Walking to take back neighborhoods for people on foot.
- Walking to school can be less stressful than driving through traffic.
- Walking is more economical.

7
Suggested Activities For Your Walk To School Day/Week

- Promote WALKING SCHOOL BUS - in which parents and students form a walking bus picking up students along the route by stopping at their homes; Parents guide the bus at the front and at the end of the 'bus'.

- Invite local law enforcement, fire or city council member to speak to your class or school.

- Work with law enforcement to have officers available on Walk To School Day to cite school zone speeders.

- Create a Safety City in which children are taught safe ways to walk to/from school using props creating a makeshift 'city'.

- Reward the class with the most 'walkers' with a prize such as lunch with the Principal.

- Celebrate a newly installed signal light or stop sign.

- Present a certificate of appreciation to your local crossing guard.

- Paint a symbol, such as footprints or bear claws (if your mascot is a Bear) along the sidewalks indicating the "Suggested Route to School" path. (Your Principal should work with the city to identify such routes. Be sure to check with your city government before painting on any sidewalks).

- Create banners and posters with safety messages that can be carried on the walk to school.

- Have parents and students fill out the Walkability Checklist to evaluate their walk to school.

- Take disposable cameras along and document possible pedestrian safety hazards.

- Host an art contest to design a safe walking poster.

- Hold a pedestrian safety parade and community health fair.

- Award the class with the most students walking to school with the Golden Sneaker award.

For more ideas and information on any of these ideas, please visit

www.cawalktoschool.com
www.walktoschool-usa.org
www.iwalktoschool.org
<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity:</strong></td>
<td><strong>Activity:</strong></td>
<td><strong>Activity:</strong></td>
<td><strong>Activity:</strong></td>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td>In art, 1st graders make signs to post up around school</td>
<td>In math and science, 2nd graders calculate how many steps it takes to get to the moon and log in steps to match that amount</td>
<td>PTA volunteers help to form walking school buses to school</td>
<td>Each class creates a banner to hang outside of their classroom</td>
<td>Health &amp; Safety Fair during lunch for all students</td>
</tr>
<tr>
<td>In science, 4th and 5th graders conduct “egg drop” experiments to demonstrate the importance of wearing a helmet while on wheels</td>
<td>3rd graders listen to an in-classroom guest speaker from local police department</td>
<td>In P.E., K-3rd graders participate in a pedestrian safety</td>
<td>Each grade will host a safety game addressing a different safety issue</td>
<td>Each grade will host a safety game addressing a different safety issue</td>
</tr>
<tr>
<td>Classroom teachers can set up a Frequent Walker or Frequent Biker program - students receive points each day they walk or bike to school</td>
<td>In English, 6th graders participate in an essay writing class - topic “How to make our community more walkable”</td>
<td>In P.E., 4th, 5th, 6th graders participate in a bicycle rodeo</td>
<td>Student council presents school crossing guard with a plaque and school jacket</td>
<td>Winners of the poster, essay and banner contest are announced and rewarded</td>
</tr>
<tr>
<td>All teachers will remind students to LOOK ALL WAYS WHILE CROSSING STREETS.</td>
<td>Principal recruits teachers to start a Walking Lunch club</td>
<td>Student volunteers pass out water and granola bars to all students walking to school</td>
<td>Kindergarteners learn songs about riding the school bus and walking safely</td>
<td>Students participate in Traffic Safety Talent Show</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Local law enforcement increases traffic enforcement outside of school</td>
<td>All teachers will remind students to WEAR A HELMET WHILE BICYCLING, SKATEBOARDING OR RIDING A SCOOTER</td>
<td>Each classroom does a skit teaching their peers about pedestrian safety</td>
</tr>
</tbody>
</table>
Increasing physical activity among children, teaching safe walking skills, easing traffic and improving the environment around schools cannot be achieved in one day. Think of using Walk To School Day to kick off long-term programs designed to bring about permanent changes.

- **Start WALKING SCHOOL BUSES**
  - A small group of children walk together under the supervision of one or more adults.

- **Promote WALKING WEDNESDAYS**
  - Establish at least one day a month for everyone to walk to school or schedule a weekly walk at or around the school.

- **Distribute PEDOMETERS**
  - Use these devices to count steps and track the distances students walk. Plot mileage on a map of the United States. See how long it takes the school to walk across the nation.

- **Promote the HEALTH BENEFITS**
  - Do a lesson about the benefits of daily exercise; heart rates, strength and endurance.

- **Create a SCHOOL SAFETY COMMITTEE**
  - Teachers, parents & students work together to create safe drop-off zones for students.

### Walking AT School Day

For some students, walking to and from school is not an option because they may be bused to school. Because these students will walk at some point, it is still important to educate them about safe walking. In addition to safe walking, you may want to educate them on school bus safety. Below are activities you can do to promote Walking AT School. Some of the suggestions listed above, may be used as well as these:

- **ESTABLISH WALKING CLUBS**
  - Classes or clubs can walk together on specific days around the field during lunch

- **INCORPORATE SCIENCE OR SOCIAL STUDIES PROJECTS INTO WALKING**
  - Track the number of steps students take - translate the number of steps into miles and compare it to the distance from Earth to the Moon. See how long it takes to Walk To The Moon.
  - Study the effects of auto pollution on the environment; Calculate how much pollution one car produces.

- **RECRUIT THE PRINCIPAL AND OTHER TEACHERS TO WALK WITH STUDENTS DURING LUNCH - ONCE A MONTH**
# Walk To School Day Timeline

<table>
<thead>
<tr>
<th>Key Activities</th>
<th>Responsible Party</th>
<th>Start/End Date</th>
<th>Tracking Measures</th>
</tr>
</thead>
</table>
| • Assign Walk To School Day point person  
  • Develop plan to participate in Walk To School Day  
  • Initiate communication with school | PTA | April 1-30 | • School officials’ approval of plan  
  Walk to School Day added to next year’s school calendar |
| • Organize committee to meet just before end of school year  
  • Continue meeting throughout the summer  
  • Develop a plan to prepare for Walk To School Day, implement an activity on the day and conduct follow-up and post-event activities | PTA point person | May 1 - May 31 | • Parent, teacher, community and/or student volunteers recruited to meet during the summer & plan event. Point person has a list of their names, phone numbers, etc.  
  • Plan reviewed by committee  
  • Subcommittees formed such as:  
    o Survey  
    o Traffic Control  
    o Media  
    o Incentives |
| • Prepare flyers to be sent home to parents during first week of school  
  • Get approval from school administrator | Sub-committee | Mid to late August | Flyers approved |
| • Create awareness of Walk To School Day activities | Sub-committee | First week of School Year | Flyers inserted into student packets  
  Information included in school newsletter  
  Scheduled to speak at 1st evening parent/family activity, i.e. Back To School Night |
| • Prepare families to participate in Walk To School Day | Sub-committee  
  School administrator | Two Weeks Before Event | Letter to Parents on how to get involved is sent home  
  Walkability Checklists sent home  
  Signs posted at and around school |
| **WALK!** | **Day of Event** | | Collect Walkability Checklists from participants  
  Distribute incentives to participants  
  Invite guest speaker  
  Acknowledge participants  
  Acknowledge crossing guards |
| Conduct post-event meeting with community stakeholders | Week After Event | | Surveys collected  
  Committee decided to further meetings with local traffic engineering and law enforcement to discuss identified hazards on routes to school  
  Develop activities to be conducted throughout the school year promoting safe walking |
| Host events promoting physical activity and walking to/from school | Throughout the School Year | Safe walking activities included in school calendar and implemented |
INTERNATIONAL WALK TO SCHOOL DAY IS
WEDNESDAY, OCTOBER 4, 2006

INTERNATIONAL WALK TO SCHOOL WEEK (October 2-6, 2006)

WHY WALK:

International Walk To School Day encourages adults and children to walk to school TOGETHER to raise awareness of walking issues.

Walk To School Day promotes:

- Safety on and around school campus
- Physical activity
- Reducing traffic congestion, pollution and speed near schools
- Community awareness
- Environmental concern
- Reclaiming neighborhoods
- Sharing time with community leaders, parents and children

For more information on how to coordinate Walk To School Day at your school,

Contact Elaine Ma’ae, UC Irvine, 714-456-7572 or emaae@uci.edu OR Berenis Quinones, Orange County Health Care Agency - CDIP, 714-667-8336, bquinones@ochca.com.
Sample Letter to Parents
(Adapted from the Santa Ana Pedestrian Safety Toolkit)

Dear Parents:

Please join us and other parents in Orange County to celebrate Walk To School Day on Wednesday, October (insert date). The purpose is (insert your vision here: for example you to see the route your child takes to school each day and to give you an opportunity to train your child to follow basic safety rules as they are walking to school.)

In Orange County, pedestrian injuries and deaths are frequent among 5-7 and 12-15 year olds. We hope this event will help us all to focus on the importance of pedestrian safety and move towards creating safer routes to school for our children. Walking is a great way for kids to get exercise. It also means fewer cars and cleaner air. Sadly, many kids do not walk to school because their streets are not safe.

By participating in this event not only will your child be able to take part in creating a safer environment and learn how to continue to be safe, but you as parents can take steps by completing the walkability checklist to improve safety. We encourage you and your child to participate not only on this special day, but also in the future.

Please review the following materials with your children:

a. Complete the Walkability Checklist.
b. Review safety tips with your children and practice them on your next walk.
c. Follow the “Suggested Routes to School Map” (if available).

Important Notice to Parents:
If you are interested in being part of a traffic safety team for your school, please fill out the registration form below.

The long-term goal of this program is to promote community involvement by encouraging more kids to walk to school while making it safer for them to arrive at school and home safely. We hope that you and your family choose to help and accomplish this goal for the safety of our community and our children. See you on October 8th! Have fun!

Sincerely,

Principal

Traffic Safety Team
(Return this portion to your child’s school)

θ Yes, I am interested in volunteering to be a part of the traffic safety team

Name:__________________________________ Phone: ______________________________
Chapter 5—Safety Training

Purpose

The Safe Routes to Schools program is committed to preparing children to be safety smart when walking or bicycling to school. Since our goal is to prompt many children who were not already regular walkers or cyclists to start walking and bicycling, it is especially important to ensure that they understand traffic dangers and basic rules of the road.

It takes practice before safety is second nature to a child. If a child generally has been driven to school, he/she probably hasn’t gotten enough experience yet to know how to walk safely and responsibly. It’s even less likely that children will have sufficient experience learning bicycle safety skills.

This chapter presents a safety-training program that can be done in cooperation with schools by teachers and Safe Routes to Schools volunteers. It is not intended to replace parental guidance but to support it. Indeed, the success of the program depends on parents continuing to reinforce these messages whenever they are out with their children.

Grade Levels

WalkBoston’s Safe Routes program offers safety training to elementary school students in grades 1, 2 or 3, as determined in consultation with the school Principal. The level of challenge must be appropriate to age level, and we find a marked increase in traffic awareness and confidence sometime around 2nd or 3rd grade.

Likewise, bicycle safety training should be provided at an appropriate age to children as determined by parents and school officials considering local cycling conditions. Grades 4, 5 and 6 are WalkBoston’s target group.

These walking safety lessons are based on materials graciously shared by two programs in England: “Footsteps” in Oxfordshire and “Walk and Talk” in Hertfordshire.
Walking Safety Training

Method

This practical, roadside safety training is designed to raise awareness of traffic and then get children to think through their actions. We recommend one adult trainer for every two children. After at least a brief introduction to safety topics indoors, trainers take students out of the school and practice crossing safely on local streets. Rather than lecturing students, we suggest asking students leading questions that help them discover the right — and safe — answers themselves.

- Where are the safe places to cross the street?
- Is it safe to cross between parked cars? Why not?
- What other things might make it difficult to see the street?
- Where should you go if you cannot see the road clearly?

Questions like these lead children to observe and think about traffic in a way that they do not when relying on parents to make decisions for them. *(See sample Trainers’ Questions on opposite page.)*

The general skills to be covered include:

- picking safe places to cross;
- planning to cross, including stopping, looking, and listening; and
- crossing safely.

First a trainer must be satisfied that the children can pick safe places to cross, and that they understand the importance of being able to see the road in both directions (and be seen). Actually practicing crossing is the all-important next step. Here is one approach to use. The trainer says:

"I want you to get ready to cross the street as if you were doing it by yourself. When you decide it is safe to cross, say ‘Now’. If I agree, I will say ‘Yes’ and we’ll walk across together. If it is not safe, I will say ‘No’ and we’ll stay here and talk about it."

This technique exercises the children’s observation and judgment skills in a safe context.

*Continued on page ST-4*
Trainers’ Questions — Day 1

1. Safe Places
Ask children to identify road, curb, sidewalk, driveways, crosswalks.
Ask children where it is safe to walk and where it is safe to cross.
Discuss where pedestrians and cars share use. [Driveways; Crosswalks]
Is it smart to cross the street between parked cars? [No. Kids cannot see street well. And the parked cars could move.]

2. Stop
Do children understand the need to stop before crossing?
Why should they stop? [To check if it’s safe to cross]
Where should they stop and wait? [Behind curb, or off the side of the road if there is no curb.] Look at examples.
When walking through a parking lot, ask where cars may be coming from. [Every direction including backing up!]

3. Look
Ask children to point to where traffic may come from at various locations. Include a location near an intersection where there may be traffic coming from several directions.
Do they need to look into driveways?
Ask how they can be sure a driver sees them? [Eye contact. Driver waves.]
Talk about “Look Left; Look Right; Look Left Again.”
Ask how to make sure that all cars from both directions stop for them.

4. Listen
Identify vehicle types by sound only.
Identify direction of vehicles by sound.
Do the children sometimes hear a vehicle before they can see it? Why?
Have them close their eyes and point when they hear a vehicle approaching.
Do all vehicles sound the same? Car horns and bicycle bells?

5. Planning to Cross
Why walk straight across? [Walking on diagonal your back is to some traffic.]
Tell them to say ”Now” when they think it is safe to cross.
Should they run across? Discuss why not.
Repeat ”Stop | Look | Listen” before actually crossing.

6. Fast/Slow
Can they tell if a vehicle is going fast or slow?
Ask them to say if they would have time to cross the road safely when a vehicle is approaching.
Trainers can be recruited from among parents and school staff. Crossing guards may be interested in participating. Student safety patrol or middle school mentors may also assist.

The participation of local police should be viewed as essential to any safety training associated with children. They can help pre-train the trainers, ensure traffic control during student training, and they may even want to participate in training with the kids.

Every training session with children should be supervised by experienced Safe Routes to Schools staff and police.

During training with elementary school children, it is a good idea for both children and adults to wear reflective safety vests for maximum visibility to traffic.

Depending on traffic conditions, organizers may want to place warning signs mid-street to alert drivers that training is in progress — although drivers may modify their behavior from the norm.

Before going out of the school for road-side practice all the students should be given ground rules:

- Obey the trainer.
- No disruptive behavior.
- No running off.
Likewise, the trainers must have permission to immediately return to school with any students who endanger themselves or others. Individual groups of children and trainers should spread out enough so they do not distract one another.

It is probably a good idea for a few of the training supervisors to have walkie-talkies or cell phones.

That being said, we can happily report that we had no risky student behavior during walking safety training at any of our four participating schools, even after multiple training sessions, and even with the few kids who were disinterested. On the whole students were amazingly well behaved.

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**Assessment**

It is useful for trainers to record notes on each child’s progress. Subsequent training sessions can address issues identified in prior trainings. Reports to parents can praise particular skills—or highlight weaknesses.

A sample assessment sheet is included in the "Forms" section.

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**Fitting Walking Safety into School Day**

Physical Education classes may be a good time to schedule safety training. Often Phys Ed teachers support and participate in Safe Routes to Schools programs in order to encourage kids to be physically active.

Alternatively, training can be offered as part of the health curriculum, in after-school programs, or in weekend workshops.

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**How Much and How Often?**

Twenty minutes is about the right amount of time for each roadside training session. Preceded by an introduction, and followed by a brief discussion of what the class has learned, safety training can be made to fit a typical class schedule as needed. An effective walking safety program would include a total of four training sessions — of increasing challenge — for each student, perhaps two in the autumn and two in the spring.

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**Reminder to Parents**

Parents should not assume that because a child participates in SRS safety training that he or she is then capable of walking alone. A responsible adult (or older sibling) should always accompany younger children until the parents are confident that the children are able to be responsible about safety.
Bicycle Safety Training

Bicycling is more complicated than walking and requires knowledge of a more sophisticated set of rules and skills. Bicycle safety training should ensure that children have a comprehensive knowledge of traffic safety and laws because, as bicyclists, they have the same responsibilities as drivers. In England, students who have taken comprehensive Safe Routes to Schools bicycle safety training perform better when they later take drivers’ education courses.

Beginning bicyclists need be given exercises that will help them learn to control their bicycles. Also, younger children’s perceptions of depth, distance, and speed, as well as their eyesight and hearing, are not fully developed. They need explicit instructions on dealing with traffic that an adult would not require (for example, Don’t ride into the path of other vehicles).

Ages for Bike Training

Depending on local conditions students may be ready for bike safety training in grades 3 or 4.
Whereas the average parent can be easily trained to teach walking safety, it requires experienced cyclists to teach bike safety. The League of American Bicyclists certifies cycling instructors. Also some police departments now have some officers on bikes; collaborating with the police is an excellent way to set up bike safety training.

A ratio of 2 trainers to 10 students is recommended.

Demonstrations, drills, and lots of practice in real bicycling situations are key to effective bike safety training. Lessons can begin in empty parking lots and move out onto carefully selected local streets as students gain skill and confidence. Street practice is essential because students are bound to have to ride on streets for some part of their journey to school.

Launch the training sessions with basic handling skills (starting and stopping, straight riding, gear shifting, looking over the shoulder) and then move on to principles of traffic operation (use the right side of the road, yield to cross traffic, yield when moving across the road, signaling, etc.).

**BICYCLE SAFETY LESSONS SHOULD INCLUDE:**

- Proper bike fit
- Wearing a helmet that fits properly and is correctly positioned
- Using a bicycle mechanical safety checklist
- Riding in a smooth, predictable manner, with no sudden swerves or changes of direction
- How to scan the road, looking ahead, side to side, and over the shoulder to see behind without swerving
- How to recognize and interpret communications from other road users and the importance of making eye contact
- Noticing and understanding traffic signs and signals
- Using hand signals for right and left turns, and for slowing and stopping
- Identifying and avoiding high-risk situations and behaviors
- Riding at a safe speed
• How to keep control of the bicycle when reacting to hazards, and especially how to stop quickly while remaining in control

• Bicycle theft prevention

Students can be awarded a certificate or "license" demonstrating their successful completion of safety training.

| Equipment | Children provide their own bicycles, which are subject to a safety check by SRS trainers.

Of course, students must wear helmets while riding; trainers should teach kids how to check for proper fit.

| When And for How Long? | It may be impractical to make bike safety training a part of the regular school day. Some families simply won’t want their children to participate. And the logistics of having bicycles at school can be cumbersome.

WalkBoston’s Safe Routes to Schools program offers bike safety training as either a summer, weekend or after-school activity. Fifteen to twenty-some hours of training make a manageable program, whether it is 6 hours on 3 consecutive Saturdays, or 10 weeks of 2 hours after school, or some other arrangement that totals enough hours. |
Chapter 6—
Classroom Activities

Goals of SRS in The Classroom

The following ideas are presented as a “starter” curriculum for integrating Safe Routes to Schools concepts into classrooms. The goals include:

• Teaching children the health and fitness value of regular walking and bicycling.

• Encouraging students to explore the effects of their transportation choices — walking, bicycling, riding in a car, or public transportation — on their communities and the environment.

• Building basic skills, as required in Massachusetts Curriculum Frameworks.
ENGLISH AND LANGUAGE ARTS

<table>
<thead>
<tr>
<th>Walkers’ Sounds</th>
<th>Use walking-related words as a stimulus for phonically based word collections. Students could make a shoe template and fill it with “sh-” words, a walking figure with “w-” words, a stop sign with “st-” words, a boot or backpack with “b” words, umbrella with “u” words, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walkers’ Vocabulary</td>
<td>Students can study street and safety vocabulary words. How many words and expressions do they understand? Learn the meanings of words like pedestrian, vehicle, curb, sidewalk, pavement, crosswalk, one way, eye contact, traffic light, turning traffic, walk/don’t walk, wait, to speed, to “run” the red light. Use dictionaries to find the meanings and write sentences, stick labels onto pictures of street scenes, or draw illustrative pictures.</td>
</tr>
<tr>
<td>Walkers’ Senses</td>
<td>Have students write stories about their journeys to school (walk, bicycle, bus, car). What do they see... hear... smell... touch... on the way to school? Compare the level of detail in a few sample stories from students that come to school by different means.</td>
</tr>
<tr>
<td>Describing Safety Hazards</td>
<td>Your students could participate in one or more of the following ideas using the theme of different forms of communication. Writing activities could include the use of word processing where appropriate. DISCUSSION In groups, your students could discuss the definition of a safety hazard. They could then describe their routes to school and list any hazards they encounter. DESCRIPTION Each student could write a description of one hazard on their route to school in a way that would clearly explain that hazard to other students coming to school by the same route. REPORT A class discussion could identify what constitutes a road safety hazard; perhaps the class could make a “site visit” to help students understand the concept of a hazard. Each student could then write a report on all the different hazards that they have found in the area of the school. The purpose of each student’s...</td>
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</tbody>
</table>
report should be to produce a description of the hazards which would be good enough to alert someone who is unfamiliar with the neighborhood.

ROLE PLAY
Small groups of students could take part in a series of simple role playing activities to act out the hazards they may meet on the way to school and strategies for avoiding them. For example, they could decide that it is dangerous to cross a particular street except where there is a crossing guard. In this case, students could act out the possible hazard of crossing in the wrong place, and then act out crossing safely. One student might provide commentary on the action.

Students should act out all these skits in front of the class. They may decide to develop them into a class play for an assembly or for a younger grade.

IMAGINATIVE WRITING
Your students could write a poem or story involving a journey to school. This should involve the theme of safety, but they might want to think beyond simple possibilities and use their imagination. For example, they could have a Safe Routes to Schools project set in another country where safety hazards may be different.

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**Safe Routes to Schools Newsletter**

Use desk-top publishing to produce a newsletter for parents and/or other members of the local community. It could illustrate results of the Safe Routes to Schools Travel Survey, describe safety hazards on school routes, and present possible remedies suggested by the Safe Routes to Schools Project.
MATHEMATICS

You could ask your students to carry out some or all of the activities below, depending on their ability, age, etc. Some of the activities may not be suitable for younger children.

**Meaningful Measures**

Students could:

- On the playground or in the gym or classroom, measure out a fixed distance — e.g. 30 feet — and count how many steps it takes each child to walk that distance. (Note that students should *walk* at a normal pace, not run.) How many steps, on average, does it take a student to walk this distance? How many steps does it take an adult to walk the same distance? Students could work out how many times they would have to walk back and forth over this fixed distance to cover the distance of one mile.

- Look at a large-scale map of the area and figure out how far 30 feet is on the map. (The local school department may have maps or be able to direct teachers to municipal departments, online services such as MapQuest.com, or commercially available CD ROM maps.)

- Figure out how far it is from home to the school. In the case of those who live nearby it may be possible to calculate the distance using strides. This should only be done, however, if adults are supervising. Then represent journeys to school in graph form by plotting distance to school against each student’s name.

- Calculate the average distance children in the class travel to school.

- Calculate how many miles or kilometers they travel to school in a day, a week, a month, a year, etc.

- Use bicycle wheels as a stimulus for lessons on circumference, distance, and speed.

- Learn about drawing to scale by making simple maps of the school and local area.
Graphs and Charts

The following activities could encourage your students to generalize and hypothesize when interpreting statistics and to evaluate various methods of presentation.

• Enter data from the results of the Safe Routes to Schools Travel Surveys, or use the computer to enter the student responses as they become available. Data can then be interpreted to produce graphs, charts, and reports, exploring concepts of fractions, percentages, and averages.

• Using a computer if possible, analyze the data from the Safe Routes to Schools Survey to produce graphs and reports. These could be incorporated into posters, newsletters, or displays.

• Use real statistics from any incidents which students may have been involved in (e.g., cuts, bruises, etc.) to create an injuries chart for the class. How many injuries were associated in one way or another with journeys? They can display these figures using either a bar or a pie chart.

• Keep a diary of the amount of time spent travelling each day or week and note the modes of transport. Then present the information using a pie chart.

• Conduct traffic surveys of roads close to school and display the results in a variety of ways.
Students can participate in a discussion aided by photographs (views of cities or natural vistas with and without smog, factories with smokestacks, pictures of cars and trucks) that introduce the concept of air pollution and what it is caused by. Do fires cause pollution? Do cars and other gasoline-burning engines cause pollution? Do walking and bicycling?

Students will set out two dishes of sticky Vaseline to catch airborne particulates. One dish will be placed near the school bus/car drop-off area, and another will be placed in a location away from the drop-off area. The dishes should be open to the air, protected from the rain and safe from foot traffic. A control dish could be placed in a closed box. Students will collect the Vaseline samples after one week and discuss their findings:

Is there any difference between the samples? What are the likely sources of the particulate matter found in the Vaseline samples? What chemicals may they contain?


Students can keep a log of how they travel to school and back for one week. Explain that the goal is to determine the total number of car trips to and from school made by class members over a week. How many car trips could be avoided during a week if every student walked or biked to and from school every day? How many might be eliminated by car pooling? If everyone walked or biked to and from school, how many car trips would be avoided over the course of a month? A year? Two years?

These activities were designed especially for walk-to-school programs in areas with cold and snowy winter conditions, the kind of winter weather that might prompt some parents to drive their children to school. The objective is to help kids see that how they travel to school has an impact on the environment. The project builds both science and writing skills.

Polar bears in the arctic are the central theme because these big, lovable-looking mammals are endangered by global warming, which is shortening the number of weeks that the
arctic ocean is frozen enough for the bears to hunt their primary food source, ringed seals.

ESSAY AND ART CONTEST
Early in the coldest winter months, announce a contest with the following theme: “How does walking to school here in ____ help polar bears in the Arctic?” Children may write essays or create artwork that answers the contest question. Suggested resources can be given to students, such as www.polarbear.org.uk, and teachers can be given more comprehensive resource packets as well. The winning entry gets a polar bear themed prize.

WALK LIKE A POLAR BEAR
The school can designate a week or an entire month as polar bear month, a time when families are encouraged to be active in the snowy weather, like polar bears are, and to walk to school as often as they can. One day can be set aside for a polar bear parade, when children are encouraged to wear polar bear t-shirts, “polar bear ears” made in art classes, and to carry their own plush polar bears to school.

Students can keep a walk-to-school log and those who walk the most during the month win special prizes and recognition.

(The more tie-ins to the polar bear theme, the more kids will get involved and the more they will learn.)
HISTORY AND SOCIAL SCIENCE

Making and Using Maps

Using a large-scale map of the school and its immediate area, students could:

• Mark any areas where potential hazards to pedestrians or cyclists exist. After a discussion about these hazards, they could discuss measures to protect cyclists and pedestrians from traffic (e.g., through traffic-calming measures such as speed bumps, closing off streets, 20 mph zones, etc.).

• Plot public transportation networks in the local area and identify commercial, residential, and any industrial areas. Compare with a different neighborhood. Students can take note of differences in public transportation services and speculate about the reasons for them.

• The class can pick an interesting location in their town, and individuals can use public transportation maps and schedules to find how to get to that location by public transportation. Students can discuss their findings to see if they picked the same way to get to the destination. Are some public transportation services easier to use than others? Are some safer to get to than others?

Family Research and Writing

Students can interview their grandparents or parents about how they got to school when they were the students’ age. How long ago was it? Where did they live? How far was it to school? What was the route like? How did they like it?
The ideas for classroom activities in this section address the following standards of the Massachusetts Curriculum Frameworks:

- **Standard 1.7 (Growth & Development)**
  Students will explain the function of human body systems and how body systems work together. (In this case the relationship between circulatory system and muscular systems.)

- **Standard 2.4 (Physical Activity and Fitness)**
  Through the study of fitness students will identify physical and psychological changes that result from participation in physical activity.

- **Standard 13.2 (Ecological Health)**
  Students will describe how business, industry and individuals can work cooperatively to solve ecological health problems such as... decreasing pollution.

Note: Many of the following Comprehensive Health lesson ideas work especially well as a collaboration between the physical education and classroom teachers.

### Air Pollution and Health
Discuss air pollution and our bodies. Can you smell it? Can you see it (little black flecks of dust settle on the window sills of your house or school)? Can you ever feel it? Why is clean air better to breathe than polluted air?

### Exercise and Health
Physical exercise is an important part of keeping our bodies strong and healthy. What is exercise? (running, jumping, skipping, hopping, and even walking) Exercise makes our hearts strong, our muscles strong, and our bones strong.

**STRONG HEARTS**
Our hearts beat faster when we are getting exercise, supplying more energy to our muscles. While sitting quietly, children can learn how to feel their pulses in their necks. Then they can do some active classroom games (e.g., jumping jacks, windmills, touch toes, “Simon says”) and feel their pulses again to see how their hearts are beating faster.
MUSCLES AND BONES
Children can draw life-sized outlines of their bodies in action (running, doing handstands, walking) or in sedentary mode (watching TV, riding in the car, playing computer games). Using appropriate resources, (see below) students can then use brightly colored markers to highlight areas which are most used during exercise — the muscles, bones and heart. Use uniform color codes for each area. Cut out the “action figures,” and make them into a collage for display in the school lobby. Also display the children’s action figures as an entire class display of “Healthy Bodies in Action.” Students can also locate the main muscles of the leg and back that keep the body upright and are used in walking.


Exercise in Daily Life
If your school has walk-to-school days when most of the children walk, plan to discuss how the children feel when they first arrive at school. How does it differ from days when they don’t walk to school? Have children make drawings called “How I feel when I walk to school.”

Adding Walking to Your Week
For two weeks in warm weather, students would keep a daily log (at home) of the time they spend in physical activity. The first week they would do nothing special, just their typical routine. The second week every class member would try to walk or bike to school every day. (Students who live too far away to walk should add some other activity to their daily routine for the week: walking or jogging for fun, jumping rope, playing sports with friends, etc.)

Afterwards, students would report on this two-week experiment. Ask that they pay special attention to even subtle changes in strength, energy, sleep, appetite, and alertness to schoolwork. Findings regarding the connections between physical exercise and how students feel can be made into a
class presentation to younger classes.

**TALKING WITH EXPERTS**

Two special speakers to the classroom, an athlete (possibly a high school student) and a pediatrician could participate in a classroom discussion on how fit and healthy students really are, based on their sleeping habits, nutrition and physical activities. Classes that conducted the two-week “experiment” described above can discuss their results.

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**Evaluating Fitness**

Make a “puffometer” – a simple device consisting of a Ping-Pong ball in a plastic tube with a mouth piece at the base. When they blow into the mouthpiece, the ball will rise up in the plastic tube. If this is done correctly, it is possible to measure the strength of different students’ exhalations by asking each to blow into the tube and marking or measuring the result. They could re-perform the experiment after vigorous physical activity. Can they account for the differences in strength of exhalation?

Undertake heart-rate and fitness experiments by measuring a friend’s pulse rate before and after physical activity. Students could compare fitness among children who walk or bike to school with those who are given a lift in the car.

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**Walk Across America**

This class activity encourages children to walk (and/or bike) — and helps them visualize the cumulative benefit of many short, individual trips on foot or on bicycle. Depending on the number of weeks that the teacher wants to devote to this activity, students can travel across the country, across the state of Massachusetts, or the length of the Appalachian Trail.

Classes can do this activity individually, or a number of classes can do it as a contest, with a bar graph or “thermometer” showing the progress of each class. “Walk Across America” is most effective when undertaken during good-weather months.

**ACTIVITIES**

- Using a map of your local school district have class determine how far from school each student lives.

- Distribute a travel diary on which students track the number of times they walk and bike to and from school. Make sure the form includes a place to record the number of miles between the student’s home and school.
• Place a map of America (or the state of Massachusetts, or the Appalachian Trail) on the wall.

• Once a week, the students will multiply the number of times they walked to and from school by the number of miles from their home to school.

• Add all of the students’ miles together and translate it to distance on the map.

• Take a string and, using the scale on the map, cut it to the length of the miles traveled. Pin one end to the point where the school is located, and stretch the string out and mark how far the students traveled this week. (Alternatively, use a map measurer and brightly colored markers.) Repeat each week.

• At the end of a month (or a few months), add the total miles “traveled” and give a prize to the class that traveled farthest.

**EXAMPLE:**
If a class has 20 students and 12 (or 60%) walk every day, and students live, on average, one-half mile from school, it will take the class a little over 4 weeks to “walk across” Massachusetts (246 miles greatest east to west distance, by road, from Provincetown to Richmond, MA).

**VARIATIONS:**
• Distribute pedometers to students in a class, so they can record daily miles walked in travel diaries. This will include all walking trips, not just walking to and from school.

• To encourage travel by bus and carpool (because they are less polluting than individual auto trips) and to avoid excluding children who live too far away from school to walk there, include buses and carpools in this exercise by adding one bonus mile for every trip made by carpool or bus and adding it to the total class miles.

• Instead of taking the most direct route to “Walk Across America,” students can choose each week where their accumulated miles take them. The class can then do research to find out something interesting about that location.

Walk and Bike Across America was first conceived by the Way to Go program in British Columbia.
**ARTS**

**Imagine Your World**

Students can draw pictures of two make-believe worlds: What would their school and neighborhood look like if there were more air pollution, and everybody always drove and never walked? What would it look like if there were no cars, and children always walked to school?

**Different Viewpoints (photography)**

Using inexpensive disposable cameras that pairs of students share, students can take photos of what they see on their way home from school, and the class can arrange the photos into two collages, one made by walkers and the other by car or bus riders. Discuss the differences in the collages based on their differing viewpoints.

**Using Art to Promote Ideas**

**POSTER PROJECTS**

Students could:

Design and illustrate a poster to warn other children coming to school of an individual hazard.

Design posters that promote the messages of the Safe Routes to Schools program. Some possible themes include:

- Protect the environment by reducing auto trips to school.
- Promote the health benefits of walking and bicycling.
- Walk safely. Bike safely.

The posters can be any media or size that is convenient for teachers and students to work with. They may also combine pictorial elements and graphs to convey information about student’s travel to school (see MATHEMATICS, Graphs and Charts.) Display all the finished posters in and around the school and/or the town, or use them to promote specific Safe Routes to Schools events.
LOGO DESIGN
Students can be introduced to the design and uses of logos and can design their own logos to promote the local Safe Routes to Schools program, focusing on one or more of the program's themes, for example:

• Safety.
• The Environment and Air Quality.
• Fun, Fitness and Health.

For maximum versatility, their logo must work in black and white, and it should be suitable for a variety of uses and sizes. A “jury” of art teachers, school and town officials, and local professional graphic artists can review student logos. One logo can be selected for use on local Safe Routes promotional materials. The winning student could be awarded a prize.
HOW TO CONDUCT A PEDESTRIAN CROSSING ACTION
by David Levinger
Feet First-Seattle, WA
www.scn.org/feetfirst
206.783.3066
April, 2002

WHAT IS A CROSSING ACTION?
- Draw attention to a dangerous crossing,
- Step-up the energy-level of your advocacy organization,
- Educate drivers about pedestrian safety and crosswalk laws,
- Communicate your vision for a pedestrian-friendly community…

All of these are good descriptions of what happens when pedestrians come together and cross the street in an organized fashion, toting signs and smiles. When you’re out in numbers, crossing the street becomes a political statement. A Crossing Action brings together people concerned about pedestrian safety, rights, and transportation priorities.

Definition: A Crossing Action is an organized event in which a group of pedestrians repeatedly crosses a street in marked and/or unmarked crosswalks in a legal fashion, so as to communicate messages to drivers, pedestrians, media representatives and other observers. Members of the organized group carry signs with educational and advocacy messages. Crossing actions can involve as few as 10 or more than 40 people, but sufficient numbers are required to communicate the messages with strength and diversity.

PLANNING TASKS
Overall, you need to set aside 4 to 16 hours to successfully plan a crossing action. This depends upon how extensively you plan and promote the event, the size of the crowd you’re expecting, and the remoteness of the location.

1. Select a Location
Remember the old real estate adage: “Location, location, location.” At the same time, don’t obsess with this to the point that you never decide to do an action. Rest assured that your group can make a big splash at any crossing.

Generate a list of spots
Sources include: (a) ideas from the group; (b) neighborhood councils and planning efforts; (c) traffic safety data showing a history of injuries or fatalities; (d) solicit the greater community for suggestions by posting e-mail messages to associated lists, or (e) respond to a community outraged by a pedestrian fatality.

Selection criteria
Choose a crossing with:
- Speed limit. A speed limit no higher than 35 mph.
- Sight lines. Adequate sight lines so that no participant is at risk (Drivers should be either have 1/5 mile visibility or be on local streets. Don’t conduct an action on a curve or at the crest of a steep hill.)
• **Traffic volumes.** Medium traffic volume. Fewer than one vehicle per minute passing makes the action not compelling enough. High levels of traffic increases the noise and unpleasantness of the action for the participants (and for the drivers, too).

• **Street width.** The street should be no wider than four lanes of traffic. Also know the width of the street curb-to-curb and the width of the striped lanes. You may need to be able to refer to the details about the street.

• **One-way vs. Two-way.** Either are fine.

• **City, County, State Road.** Make sure that the street is part of the jurisdiction that you’re trying to affect. Sometimes, a city street has a history of being a state route. This can muddle the waters in addressing problems on that route.

• **Presence of on-street parking.**

• **Proximity to members and media.** You need people to show up. Make it as easy as possible.

• **Neighborhood support.** You will need as much support as possible if materials changes are going to be a result of your action.

• **Sidewalk congestion.** If the sidewalks are very congested, your crossing action might cause problems for pedestrians. Consider whether you’ll be interfering with traffic. If you might be, then you may need a parade permit or street use permit from the city.

**Selection process**

It doesn’t really matter how much group process goes into this selection, as long as a few are enthusiastic about the location. The rest will be infectious, and, one action begets another.

**2. Reach Out to Adjacent Residents & Businesses**

You can often get significant support from the people who witness these crossings on a daily basis. Don’t hesitate to ask them in an open-ended way how they might be able to support your organization. You might be surprised at the things they offer (like hot coffee and restrooms!). It may be that a neighbor is friends with a TV Reporter. Open yourself to the possibilities—pedestrian organizing is part magic and serendipity.

• **Neighborhood associations.** Look up the community council or neighborhood association representing people in the vicinity. They may be able to also provide maps or documentation of pedestrian problems.

• **Neighborhood schools.** Many schools are concerned with safety. Most have crossing guard programs or Walk-to-school day contact people. Their voices are extremely compelling in the community.

• **Fire Station.** Fire fighters are stalwart safety advocates. Off-duty or on, they may be excellent partners. The local fire station may be able to share stories or experience regarding the problems upon which you are focusing.

**3. Recruit Participants**

**Designated leader**

There needs to be one person who people can contact for all issues related to the action. The story and representation needs to be straightforward and coordinated. That leader’s seriousness will be reflected in the passion and success of the participants.
Non-violence training
Strongly recommended. Contact whomever in your community can provide some non-violence training, or identify someone competent in your group who can educate the group about the importance and depth of non-violence. You need there to be no harsh words spoken and no aggression expressed during the action.

Quality, not quantity
Rather than attempting to be clog the streets, simply think of the most aware people you can bring out to the action. A chain is only as strong as its weakest link, and you are making a chain in this action.

Don’t overlook these reliable groups
- **American Volksport Association** ([http://www.ava.org/](http://www.ava.org/)) This very well organized group may have active members in your area.
- People involved in **Americans with Disabilities Act (ADA) advocacy** may be interested in your action.
  - Check out your local Lighthouse for the Blind.
  - Connect with other disability advocacy groups to connect with wheelchair users.
- The **AARP** (American Association of Retired Persons) ([www.aarp.org](http://www.aarp.org)) is an excellent way to located concerned citizens. Crossing safety is of particular interest to us as we age.
- **Environmental advocacy networks**. A good simple action such as this can be very popular among environmental activists. Many environmental activists have solid experience with direct action and can serve as leaders in helping you have an orderly and civil action.

4. Choose a Day and Time

**Weekday pros & cons**
Pros: People are around; regular meeting day; Weekday news readership/viewership;
Cons: Work-day conflicts mean earlier than 5:30 difficult; Shorter action (probably limited to one hour); Gets dark early in greater latitudes;

**Weekend pros & cons**
Pros: Lots of time for a big event; Get the whole family involved (baby carriages and strollers are great!);
Cons: Conflicts with schedules; May be unaccustomed to gathering on the weekend; Weather is always worse on the weekend (just kidding);

5. Materials & Supplies

**Brochure for your organization**
Hand this out to every participant. Even if you don't feel like hyping your organization at the event, do this. It will help participants explain what your organization is to their friends afterwards. I don't recommend that you leaflet people with your brochure, as you don't want to confuse promoting your message with promoting your organization.
Postcard-size explanation
Communicate clearly by writing a concise description of (a) what a crossing action is, and (b) why you’re holding this particular action. Provide general information and detailed observations about what is wrong at this particular location. This saves your voice and provides your less-prepared participants a solid ability to represent the issues.

Sign Materials
- Sticks—from the hardware store
- White poster board or cardboard—from an office supplies store
- Staples
- Pens (big, thick tips for bold lines)
- Suggested messages (use this appendix, but the creativity of your group will likely improve on these suggestions)
- Optional: Decorating materials

Optional: Card table and chairs
It can help to have a staffed table handy to enable outreach and publicity. Additional materials can be placed on the table to educate passers-by or interest participants.

Optional: Your organization’s sign or banner
The name of your group is relevant and may get publicity from this event. Shout it out!

Optional: Bull Horn or Megaphone ($10-15/day at an equipment rentals store)
Traffic noise competes fiercely with your voice. With a large group, a bull horn will really help, as you are often trying to speak to people across the street, and it helps get your message into people's inside of cars. If you come up with simple messages, they can become chants that involve the whole group. You will have greater control over the group with the megaphone.

Optional: Orange Flags, Safety Vest
Feet First is using orange vinyl flags to help stop traffic before we step off the curb. These are made using a 2-foot long piece of 3/4" thick doweling with a 18" square sheet of orange vinyl affixed. A traffic safety vest can be rented at a rental store or purchased at a bicycle shop.

6. Research

Your state’s Crosswalk Law (see attachment)
Copy the sections of your state code relating to pedestrians onto one letter-sized page for easy distribution among the participants and for people who request them. (In many states, these can be copied from your State Government Web site.) Does your State’s traffic safety commission have handouts of the pedestrian crossing law? Washington State has a handy card with illustrations of the crossing law, but you may wish to get your group's name out there on your own production. Feet First has photo-copied a one-page hand-out for drivers titled "KNOW THE LAW!" This is a good way to engage with drivers (see attachment).

Recorded Injuries
Ask your State’s pedestrian coordinator for all documented cases of injury crashes involving pedestrians at this location and at other locations on this street.
Transportation Department Plans
Contact your transportation department to see if they have any scheduled work over the next two or three years at or near your selected or prospective locations.

City Ordinances and Permits
Contact your city or town’s mayor’s office to ensure that you don’t need a permit. In Seattle no permit is required, as long as people don’t block businesses or obstruct traffic in illegal ways. People cannot obstruct passing pedestrian traffic on sidewalks, if it forces pedestrians into the street. As a courtesy, you might contact the police department to explain what you intend to do. This can be an opportunity to persuade police to enforce crosswalk laws.

Contact Phone Numbers for relevant services
Here’s a list from Seattle. Someone at your transportation department may already have a “triage” list such as this one that is posted on Seattle Transportation’s Web site. All of these contact numbers are pertinent to pedestrians:

Adopt-A-Street - 684-7647
Arterial and Commercial Zone Traffic Concerns - 684-5106
Asphalt Pedestrian Walkways - 684-5377
Bridges and Roadway Structures - 684-8325
Bus-Related Inquiries - 553-3000
Channelization - 684-5116
Cleaning Public Street Areas and Cutting Back Overgrowth
  Streets North of Ship Canal - 684-7508
  Streets South of Ship Canal - 386-1218
Overgrowth on Private Property - 684-7899
Community Identification Signs - 233-0033
Crosswalks (Repainting) - 684-5116
Curb Ramps - 684-5377
Drainage
  Streets North of Ship Canal - 684-7506
  Streets South of Ship Canal - 386-1230
Litter Receptacles - 386-1218
Local Improvement Districts - 684-7580
Neighborhood Cleanup - 684-0190
Painting & Repainting Pavement Markings - 684-5116 or 684-5512
Parking - 684-7623
Street Trees - 684-7649
Residential Parking Zones (RPZs)
  New RPZs - 684-5092
  Existing RPZs - 684-5086
Residential Street Traffic Concerns - 684-7577
Sidewalks and Planting Strips - 684-5253
Speed Watch - 684-0815
Street Lights - 625-3000
Street Name Signs - 233-0033
Street Vacations - 684-7564
Traffic Circles - 684-0817
Traffic Signals - 684-5118
Traffic Signs - 684-5106
7. Setting Expectations
The most important aspect of the event is to have fun. There will likely be no physical changes or observable changes in driver behavior as the result of a single crossing action. This is one small step toward a more walkable community. Keep this in perspective and don’t make any promises about outcomes.

8. Press Advisory (see attachment)
Ask a local non-profit or advocacy organization for their media contacts. If there is a transportation-related organization, they may have the specific names of transportation reporters or editors interested in health, transportation, government, or community issues.

- Newspapers
- Television
- Radio
- Internet Information Sources

CROSSING ACTION EVENT

A. Meeting
- Choose a Convenient Place Near the Site
- Set a thoughtful mood. Have some snacks and beverages available for people. Provide them with a sign-in sheet and a flyer.
- Having some helping tasks identified (e.g., Organizing pens and sign materials).
- Make Signs (Some people may have prepared their signs in advance).

B. Staging
Building esprit de corps is important. As you prepare for your crossing go over the expectation and procedures. Remind people what the expectations and plans are. Provide any review of non-violence guidelines and the laws that need to be obeyed. Don’t assume anything.

C. Focal Point
Have a person who is the focal point for media interviews and another who is the designated leader of the group during the action. (One person can’t do both fully.)

D. Handling the Media
Greet media members with a packet of information (it may be as simple as your contact information and a brochure). Remember to ask them for the airing time for any coverage. (Then record and clip the news coverage for your records.)

E. Scenario Planning (perhaps omit this section)
Be prepared for some of the following possible scenarios:
A) People want to join in with you.
B) A car honks at you.
C) One of your group members gets angry at the drivers.

**F. Information for Onlookers and Drivers**

This need not be a leafleting action, but for interested parties, have information at hand so they can get easily involved. Don’t obstruct traffic with conversations and demonstrate the utmost safety consciousness. Remember that the people in both the first car in the queue and the fourth car in the queue may be prospective members of your group. Be open to their interest and don’t piss them off.

It might help to designate a couple of people for whom providing this information is a responsibility. It may not be appropriate or desirable for some people to be an ambassador. Feet First has been providing a copy of the pedestrian crossing laws to drivers and participants, and this has been quite positive (see attachment).

**G. Focal Point**

Have a person who is the focal point for media interviews and another who is the designated leader of the group during the action. (One person can’t do both fully.)

**FOLLOW THROUGH**

! **Send Thank You Messages**

Thank any political representatives or city services that supported or participated in your action with formal notes (hand-written is fine!). E-mail your participants an note with any media coverage information or statistics to help them better understand the impact of their participation. Clearly communicate the next steps and how their efforts are leading to change.

! **Tell People About It**

Put out a newsletter, get photos and a brief write-up on a Web site. Record the various stories of the people who participated. Just ask them what they thought of it and how they liked doing it. Create something that people can point to and that you can all remember having been a part of. Post newspaper articles and news coverage and photos on the Web. Notify the transportation department of your action and your continued interest in attention to this issue. One letter after an action counts much more than one before an action. You can ask participants for permission to list all of their names as supporters of the letter.

If you’re really ambitious, this would make a good lunch time talk for any group of people, from the Rotary luncheon to the local neighborhood council meeting.

! **NOW Preach to the Choir**

It is amazing how well crossing actions play to the crowd of pedestrian advocates. Your event will likely be remembered for a very long time. So, toot your own horn and let as many people from the advocacy and alternative transportation community as possible know about what you’ve done. This will have a big impact on how recognizable your organization is in the local community for years to come.
! Ask for Donations
The best way to get someone to give is to ask them for something else first. Everyone who contributed time, cookies, media attention, or even those who honked in support of you are excellent candidates for fundraising efforts.

EXAMPLE MESSAGES FOR SIGNS
(thanks also to the Willamette Pedestrian Coalition, Portland, OR)

- Stop for me, it's the LAW
- Give us a BRAKE
- Thanks for stopping (name of org)
- There's a CROSSWALK at every CORNER
- Why did the pedestrians cross the road/to get to the other side
- The Law: Drivers must STOP and YIELD to pedestrians in crosswalk
- We're just WALKING OUR TALK -- it's our right!
- Pedestrians have the RIGHT-OF-WAY in the crosswalk
- Please don't kill me, I'm just trying to CROSS THE STREET
- HEY! It only takes a few seconds to let me CROSS THE STREET -- Thanks!
- Walking is good MEDICINE
- Don't TREAD on me
- CROSSWALKS are for PEDESTRIANS
- FAST is not FRIENDLY
- It won't HURT YOU to slow down but it might KILL ME if you don't
- Remember (insert name here)
- Bad Intersection
- Slow Down, You Move too Fast—you've got to make the moment last.
- We don't want to cross you, just the street

- STOP in the name of LAW
- SLOW DOWN
- Shoppers need to cross too
- Shoppers need to cross too
- Why did the pedestrians cross the road/to get to the other side
- The Law: Drivers must STOP and YIELD to pedestrians in crosswalk
- We're just WALKING OUR TALK -- it's our right!
- Pedestrians have the RIGHT-OF-WAY in the crosswalk
- Please don't kill me, I'm just trying to CROSS THE STREET
- HEY! It only takes a few seconds to let me CROSS THE STREET -- Thanks!
- Walking is good MEDICINE
- Follow the speed limit
- Be Careful!
- Pedestrians are not targets
- SLOW, for People
- WATCH for WALKERS
PRESS ADVISORY

Residents and Pedestrian Advocates will Dramatize Two Unsafe Intersections
Tuesday April 2, 2002, 5:00 PM @ Roanoke Park

Feet First, the Puget Sound Pedestrian Advocacy organization, and residents of Seattle’s Eastlake and Roanoke neighborhoods will conduct a "Pedestrian Crossing Action" on Tuesday, April 2nd, 2002 to highlight the need for safety improvements to the streets and sidewalks in these neighborhoods.

These neighborhoods have sought the city's help solving dangerous intersections for years, but to no avail. The event will focus on intersections at Roanoke Park and along Boylston Ave. E. Cars heading north on 10th Ave East regularly miss the turn onto E. Roanoke St. and drive up over the sidewalk where pedestrians wait to cross. Vehicular traffic on Boylston Ave E regularly exceeds posted speed limits to the great peril of pedestrians, bicyclists, and local motorists leaving their driveways. Feet First is working to raise public and government awareness of the importance of pedestrian concerns in the Puget Sound region.

Residents of these neighborhoods will march along side Feet First members to:
• Encourage Seattle Transportation to respond to these unsafe conditions
• Educate drivers about State Law concerning marked and unmarked crosswalks
• Show how pedestrians and communities are uniting to solve transportation problems

This action comes less than two weeks after 36-year-old Susie Stephens was struck and killed crossing the street while consulting in St. Louis. Susie was a long-time pedestrian and bicycling advocate in Washington State. Chris Leman, board member of the Eastlake Community Council, said "I knew Susie Stephens and feel this effort to spotlight pedestrian safety concerns is a great way to memorialize her." In the year 2000, there were 77 pedestrian fatalities in Washington State alone.

A Crossing Action is an organized event in which a group of pedestrians crosses a street in marked and/or unmarked crosswalks in a legal fashion, so as to communicate messages to drivers, pedestrians, and other observers. Members of the organized group carry signs with educational and advocacy messages.

EVENT DETAILS
Meet at 5:00 PM at Roanoke Park -- at the intersection of 10th Ave. E. and Roanoke. Tuesday, April 2nd, 2002, RAIN or SHINE
5:30 PM - First focus on Roanoke Park intersection
6:00 PM - Second focus on Boylston Ave. walking from Roanoke to E. Newton St.

FEET FIRST CONTACT
David Levinger, organizer        Web site: www.scn.org/civic/feetfirst
e-mail: levinger@earthlink.net    telephone: 123-4567 (home), 123-4567 (mobile)

EASTLAKE NEIGHBORHOOD CONTACT
Name: (title)                      address:
e-mail:                          telephone:
                                      -30-
KNOW THE LAW!
Washington State's Law: ALL CROSSES ARE CROSSWALKS!

The Definition of a Crosswalk Includes UNMARKED Crossings

**RCW 46.04.160**  
**Crosswalk.**  
"Crosswalk" means the portion of the roadway between the intersection area and a prolongation or connection of the farthest sidewalk line or in the event there are no sidewalks then between the intersection area and a line ten feet therefrom, except as modified by a marked crosswalk.

[1961 c 12 § 46.04.160. Prior: 1959 c 49 § 17; prior: 1937 c 189 § 1, part; RRS § 6360-1, part.]

**LAW ON STOPPING FOR PEDESTRIANS**

**RCW 46.61.235**  
**Crosswalks.**  
(1) The operator of an approaching vehicle shall stop and remain stopped to allow a pedestrian or bicycle to cross the roadway within an unmarked or marked crosswalk when the pedestrian or bicycle is upon or within one lane of the half of the roadway upon which the vehicle is traveling or onto which it is turning. For purposes of this section "half of the roadway" means all traffic lanes carrying traffic in one direction of travel, and includes the entire width of a one-way roadway.

(2) No pedestrian or bicycle shall suddenly leave a curb or other place of safety and walk, run, or otherwise move into the path of a vehicle which is so close that it is impossible for the driver to stop.

(3) Subsection (1) of this section does not apply under the conditions stated in RCW 46.61.240(2).

(4) Whenever any vehicle is stopped at a marked crosswalk or at any unmarked crosswalk at an intersection to permit a pedestrian or bicycle to cross the roadway, the driver of any other vehicle approaching from the rear shall not overtake and pass such stopped vehicle.

[2000 c 85 § 1; 1993 c 153 § 1; 1990 c 241 § 4; 1965 ex.s. c 155 § 34.]

**NOTES:**

**Rules of court:** Monetary penalty schedule -- IRLJ 6.2.

Feet First – Puget Sound Pedestrian Advocacy  
[www.scn.org/feetfirst](http://www.scn.org/feetfirst)  206.783.3066  member of the national America Walks Coalition
School District, principal(s) and/or community representatives identify potential need for crossing guards

School District and/or community reps gets response/decide next steps

Req RDMD study/approve xing guard location

RDMD conducts warrants study

County Bd of Supervisors

Decision

Yes

No

Yes

No

Sheriff/Coroner Dept Requested to assign xing guard(s)

Sheriff/Coroner

Dept admin staff calls contractor - All City Mgmt Services

All City Mgmt assigns crossing guards - bills county monthly

Draft Prepared 4-06-06

Source: Charles T. Gibson