



HEALTH SERVICES AGENCY
ADMINISTRATION

COUNTY OF SANTA CRUZ

HEALTH SERVICES AGENCY

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October 21, 1998

AGENDA: November 10, 1998

BOARD OF SUPERVISORS
Santa Cruz County
701 Ocean Street
Santa Cruz, CA 95060

SUBJECT: REPORT BACK ON BICYCLE SAFETY PROGRAMS

Dear Board Members:

Your Board had previously requested information on the efficacy of County-supported bicycle helmet programs. HSA staff, in conjunction with the Community Traffic Safety Coalition, have recently completed an evaluation of local bicycle injury data and observed bicycle safety behaviors.

Bicycle-related injuries in Santa Cruz County, 1990 to 1996:

Since 1992, the Community Traffic Safety Coalition and the Santa Cruz County Health Services Agency have been working to reduce bicycle-related injuries in Santa Cruz County. Data from the Statewide Integrated Traffic Reporting System (SWITRS) compare baseline data from 1990, before the coalition was formed, to data from 1996, the most recent data published (see attached chart).

The number of bicyclists injured or killed per year in Santa Cruz County declined **38%**, from 272 injuries and 2 fatalities in 1990, to 171 injuries and no fatalities in 1996;

The injury rate for bicyclists decreased **41%**, from 119 per 100,000 population in 1990, to 70 per 100,000 population in 1996. In California as a whole, the bicyclist injury rate declined 31% in the same period;

Injuries to bicyclists, ages 5 to 14 years, dropped **63%**, from 71 injuries in 1990, to 26 in 1996; and for ages 15 to 24 years, injuries dropped **57%**, from 107 injuries in 1990, to 46 in 1996.

The percent of injured bicyclists in this area who were wearing helmets at the time of a collision rose from 12% in 1990 to 39% in 1996. In California, only 18% of injured cyclists were wearing helmets in 1996. Of the 7 bicyclists who died of their injuries from 1990 to 1996, only one was wearing a helmet.

Changes in bicycle helmet use in Santa Cruz County from 1993 to 1998:

In a 1993 observation study of bicycle helmet use conducted by the Community Traffic Safety Coalition, 31% of cyclists County-wide wore helmets. In a follow-up evaluation in 1998, bicycle helmet use County-wide increased to 41%. (See attached report, Bicycle Safety Observation Study, May, 1998.)

The most significant improvement was among children, the focus of low-cost bicycle helmet sales and school-based education programs. Bicycle helmet use by children under age 13 rose from 15% in 1993 to 52% in 1998. The Youth Bicycle Helmet law, which went into effect January 1, 1994, requires all children under age 18 to wear bicycle helmets. However, youth ages 13 to 18 made only a small change in helmet use, from 18% in 1993 to 20% in 1998.

Although both regions have improved, bicycle helmet use is still significantly higher in north Santa Cruz County, at **46%**, than in the greater Watsonville area, at 15%. Among children under age 13, bicycle helmet use in North County rose from 21% in 1993 to 74% in 1998; bicycle helmet use among children in greater Watsonville area rose from 0% in 1993 to 28% in 1998. (For more information on efforts to improve bicycle helmet use in Watsonville, see attached "**Evaluation of Bicycle Safety Outreach to the Latino Community**").

Conclusion:

The bicycle injury rate in Santa Cruz County has declined faster than the State average, especially among children, ages 5 to 14. Bicycle helmet use by injury victims is also greater than the State average. Observed bicycle helmet use in the County increased from 31% in 1993 to 41% in 1998.

Reduction in bicycle-related injuries is dependent on a combination of safety education, road engineering improvements, parental and family involvement, and traffic law enforcement. The combined efforts of the Health Services Agency (HSA) and the other members of the Santa Cruz County Community Traffic Safety Coalition have contributed to lowering the County bicycle injury rate and increasing bicycle helmet use. However, there is more work to be done to further improve bicycle safety-related behaviors. As described in the "Conclusion" section of the attached report, local efforts will continue to focus on high risk populations in the County.

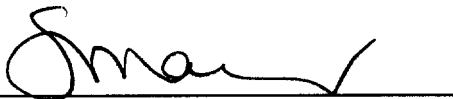
It is, therefore, RECOMMENDED that your Board:

Accept and file this report on bicycle safety programs in Santa Cruz County.

Sincerely,


Charles M. Moody
HSA Administrator

RECOMMENDED:



Susan A. Mauriello
County Administrative Officer

CMM/amg
attachments

cc: **CAO**
Auditor-Controller
County Counsel
HSA Administration
Pat Ellerby, Health Education, HSA

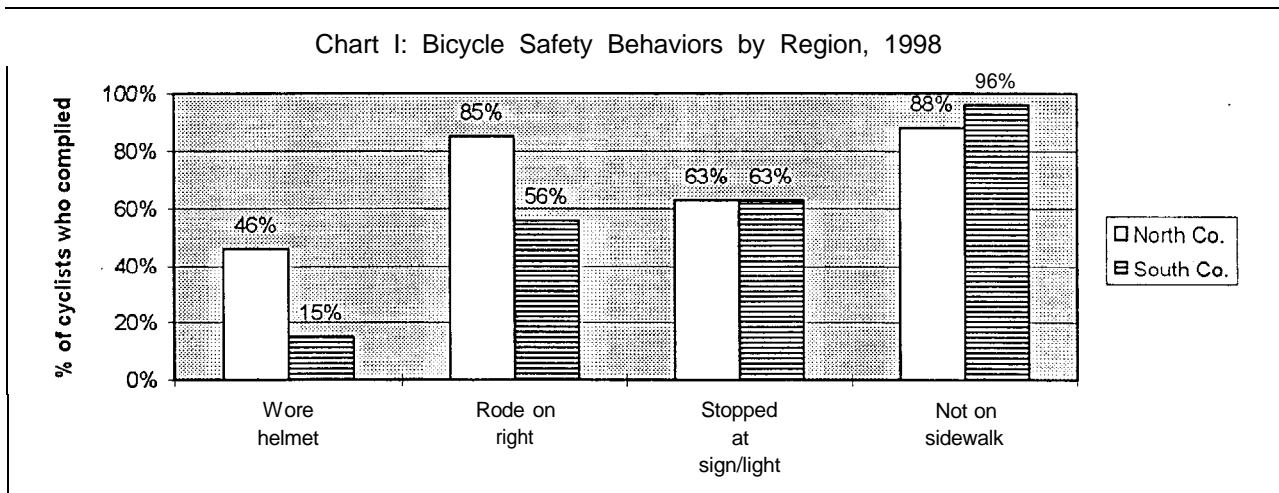
Community Traffic Safety Coalition of Santa Cruz County

BICYCLE SAFETY OBSERVATION STUDY, MAY 1998

The Community Traffic Safety Coalition has been working since 1992 to reduce bicycle-related injuries in Santa Cruz County. In May 1998 the Coalition conducted a large observation study of bicyclists throughout the county to evaluate the impact of education efforts and low-cost bicycle helmet sales on bicyclists' behavior. Three bicycle safety behaviors were observed: wearing bicycle helmets, riding with traffic, and stopping at stop signs and red lights. Riding on the sidewalk* was also noted, where applicable. Bicycle helmet use was compared with smaller baseline observation studies conducted in 1993 and 1995.

Of the total 1794 cyclists observed in 1998, 41% wore helmets, 80% rode with traffic, and 63% stopped at a stop sign or red light. The vast majority of cyclists observed were male (80%). Of the 1538 cyclists at sites with sidewalks, 89% rode in the street, while 11% rode on the sidewalk. Riding on the sidewalk varied from 0% to 39% depending on site, probably due to the perceived hazards of the street at that location.

For the purposes of this report, the data is split into two regions: "north county" is defined as San Lorenzo Valley through Aptos, and "south county" refers to the greater Watsonville area. 1464 of the cyclists were observed at 21 sites in north Santa Cruz County, and 330 cyclists were observed at 12 sites in south county. On average, 39 cyclists per hour were observed in north county, compared to only 13.5 cyclists per hour in south county. Helmet use and riding with traffic were substantially higher at the north county sites, as illustrated in Chart I, but there was no difference in stopping at stop signs. There was somewhat less riding on sidewalks in south county.



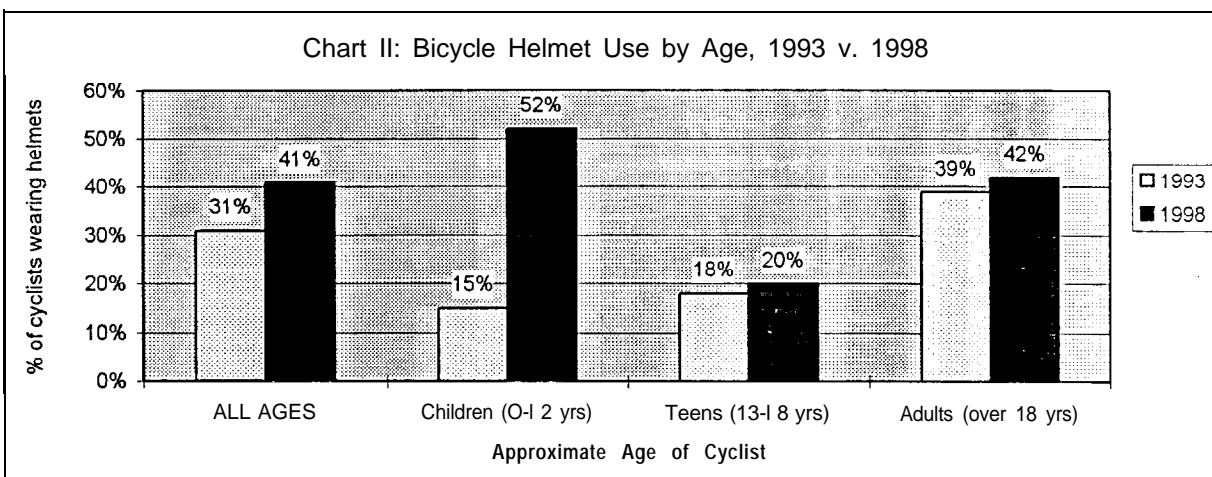
Children under age 13 were more likely to wear a helmet (52%) and stop at signs and lights (76%) than older cyclists. Teens age 13 to 18 years had the lowest rate of helmet use (20%) and stopping (57%). Females practiced each of the three safety behaviors at a higher rate than males. Bicyclists wearing helmets were also more likely to follow other safety behaviors.

* Bicyclists are safest riding visibly and predictably in the street, like other vehicles. Riding on the sidewalk increases potential conflicts with cars at intersections and driveways, and creates hazards for pedestrians.

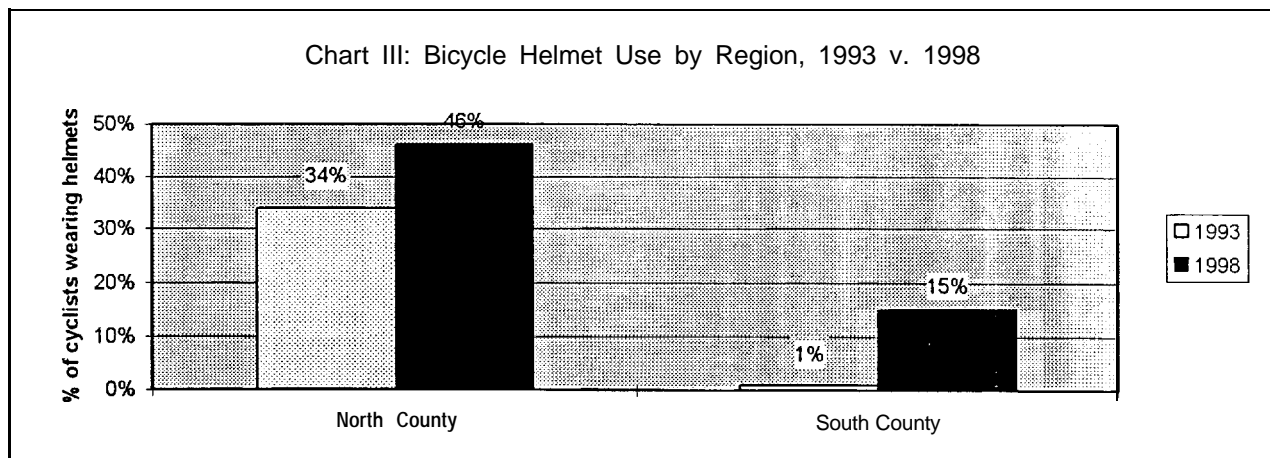
Changes in Bicycle Helmet Use

The 1998 results were compared to results from a smaller Bicycle Helmet Use Study which the Coalition conducted in 1993. (Note that since the 1998 study included additional sites, the results are not completely comparable.) For all ages combined, bicycle helmet use increased 10 percentage points from 31% in 1993 to 41% in 1998.

In both 1993 and 1998, bicycle helmet use varied significantly by age, as illustrated in Chart II. Most of the increase in helmet use from 1993 to 1998 was among children under 13 years, who were required by California law to wear bicycle helmets starting 1/1/94. (Enforcement started 1/1/95). Helmet use among children rose from 15% in 1993 to 52% in 1998. Helmet use among youth age 13-18 years rose only slightly from 18% in 1993 to 20% in 1998, even though the law applies to all children under 18 years. Children under age 13 continue to wear helmets at the highest rate, and teens age 13 to 18 years continue to have the lowest rate.



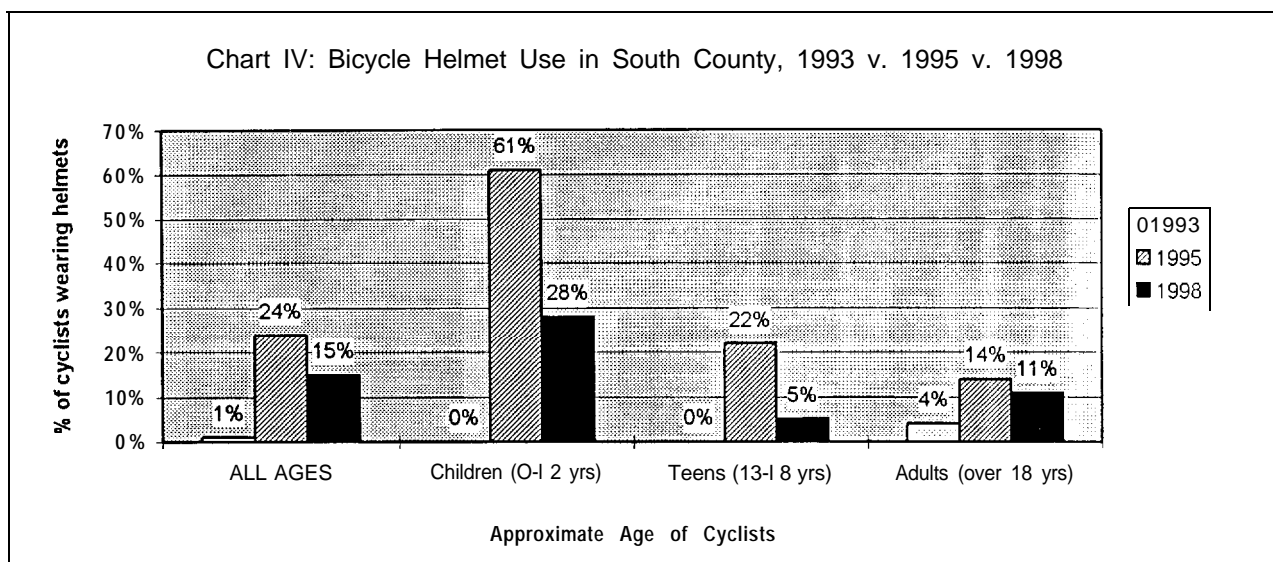
The trends in helmet use also varied by region (Chart III). While helmet use remains lower in south county at 15%, it made a gain of 14 percentage points, compared to a 12 percentage point gain to reach 46% in north county.



Similarly, for children under 13 in north county, helmet use rose from 21% in 1993 to 74% in 1998. In south county, helmet use among children rose from 0% to 28%.

A special observation study by the Community Traffic Safety Coalition in 1995 in south county reveals that bicycle helmet use was actually higher in 1995 right after the bicycle helmet law started being enforced. (No comparable data for all of north county is available for 1995.)

Chart IV shows helmet use by age in south county. Helmet use among children rose from 0% in 1993 to 61% in 1995 then dropped to 28% in 1998. Among teens, age 13 to 18 years, helmet use rose from 0% in 1993 to 22% in 1995, then dropped to only 5% in 1998.



Conclusion

A bicycle safety observation study was conducted in May 1998 by the Community Traffic Safety Coalition to assess the impact of education efforts and low-cost bicycle helmet sales on bicyclist's behavior in Santa Cruz County. Of the total 1794 cyclists observed in 1998, 41% wore helmets, 80% rode with traffic, and 63% stopped at stop signs or red lights. For all ages combined, bicycle helmet use increased by 10% from 31% in 1993 to 41% in 1998. Helmet use among children rose significantly from 15% in 1993 to 52% in 1998.

In reviewing bicycle helmet use data by region, helmet use in south county is low at only 15% compared to north county at 46%. For children under 13 in north county, helmet use rose from 21% in 1993 to 74% in 1998. In the south county area, helmet use among children rose from 0% in 1993 to 28% in 1998.

As shown in Chart IV, Bicycle helmet use among children and teens in south county increased substantially from 1993 to 1995 when the helmet law was first enforced, then declined sharply from 1995 to 1998. During 1995 - 1998, almost 2,000 bicycle helmets were sold at a subsidized cost of \$5.00 or given away to children in Watsonville, yet observed use of helmets declined. Apparently, many children have helmets but do not wear them. Staff teaching bicycle safety in Watsonville elementary schools report that most children are aware of the bicycle helmet law but say it is not currently enforced in the greater Watsonville area.

Renewed attention to bicycle helmet use and new education and enforcement strategies are needed to reverse this trend. The Community Traffic Safety Coalition, in cooperation with the Health Services Agency, will continue to direct resources to address the special needs identified in south county and among youth. One strategy being considered locally to increase compliance with bicycle-related **traffic** laws is a youth traffic school. Youth violators and their parents attend a class on bicycle and pedestrian safety as an alternative to paying fines. This strategy has been implemented in other areas of California including Huntington Beach and Fairfield.

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Community Traffic Safety Coalition of Santa Cruz County

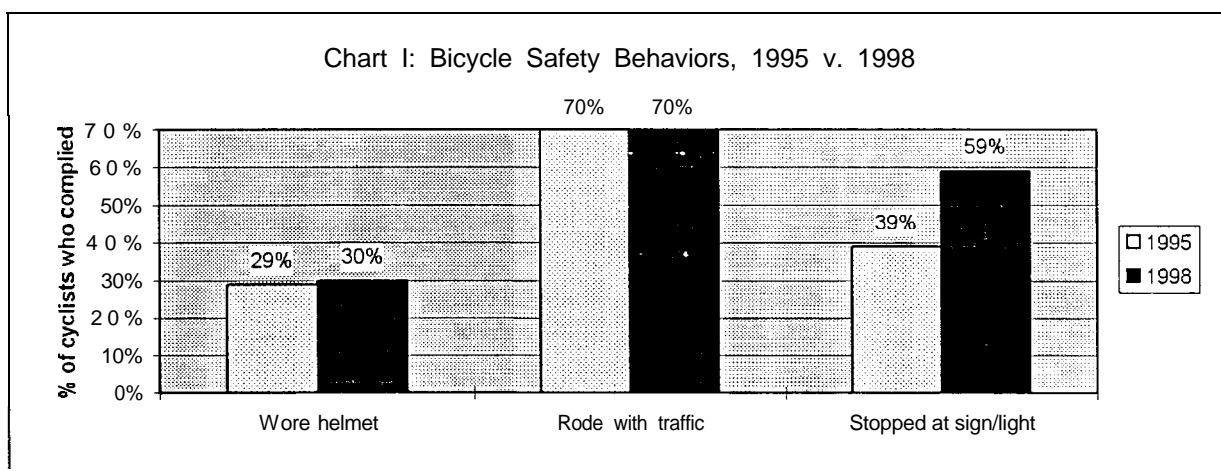
EVALUATION OF BICYCLE SAFETY OUTREACH TO THE LATINO COMMUNITY

The Community Traffic Safety Coalition has been working since 1992 to reduce bicycle-related injuries in Santa Cruz County. In 1995 the Coalition assessed the bicycle safety needs of the Latino community in both the Santa Cruz area and the Watsonville area. The needs assessment included a review of injury statistics, interviews and focus groups with community members, and a baseline observation study of bicyclists. After three years of education programs and low-cost bicycle helmet sales designed to meet the specific needs of the Latino community, the Coalition conducted a second observation study in May 1998 to measure any changes in bicycle safety behavior. This report compares the 1995 results to the equivalent sites in the 1998 study.*

Three bicycle safety behaviors were observed: wearing bicycle helmets, riding with traffic, and stopping at stop signs and red lights. Sites in the Santa Cruz and Watsonville areas were chosen in consultation with members of the Latino community in areas with a higher concentration of Latino residents, or likely to be commute routes for workers. However, all bicyclists who passed the site were counted, and the exact percentage of Latinos is unknown. Most of the sites were the same from 1995 to 1998, but a few sites which had too few cyclists were changed, and more neighborhood sites were added in the hopes of observing more children.

A total of 890 cyclists were observed in 1995, and 822 cyclists were observed in 1998. In spite of attempts to include sites where children would be riding, the sample of children and teens observed was low in both years: only 113 children in 1995 and 134 children in 1998.

Chart I below compares the results from the two years. For all ages combined, bicycle helmet use and riding with traffic showed no significant improvement, remaining at about 30% and 70%, respectively. Stopping at stop signs and red lights increased 20 percentage points, from 39% in 1995 to 59% in 1998, with improvement in all age groups.



* The 1998 study included additional sites to assess bicycle safety behavior in the county as a whole. Those results are reported separately in "Bicycle Safety Observation Study, May 1998".

Children and parents were the primary focus of the bicycle safety outreach to the Latino community conducted during 1995 to 1998. Charts II shows the changes for children under age 13, and Chart III shows the changes for teens age 13 to 18. (As noted previously, however, the sample sizes for these subgroups were small, so the results are not conclusive.)

In general, children made greater gains in bicycle safety than other ages. However, bicycle helmet use among children actually declined from 62% in 1995 to 39% in 1998, but remains higher than the average for all ages (30%). Children's rate of riding with traffic increased from 42% in 1995 to 57% in 1998; stopping at signs improved from 48% to 76%. Riding with traffic was a special concern for children, because in 1995 only 42% of children rode with traffic, compared to 77% of adults. Although the rate for adults stayed about the same, at 78% in 1998, children made a large improvement to 57%.

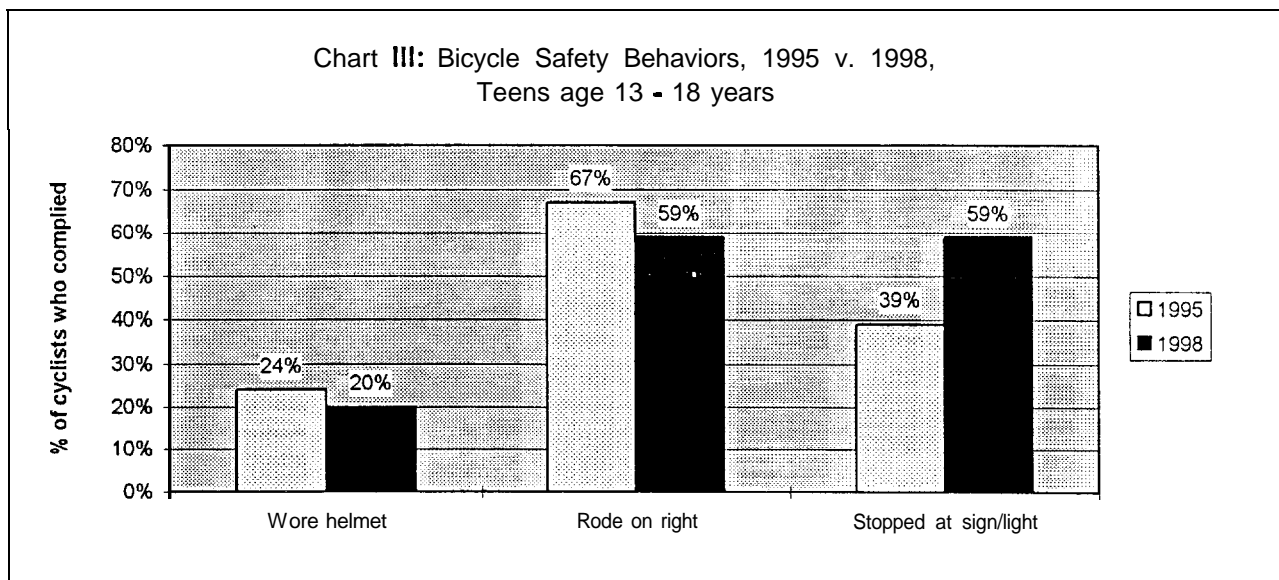
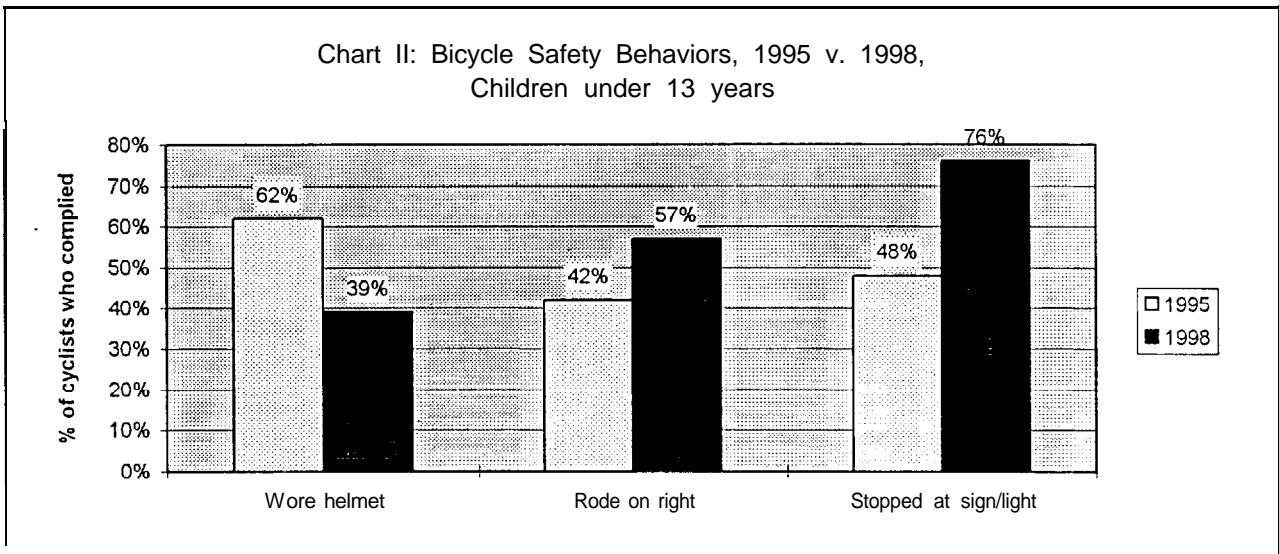
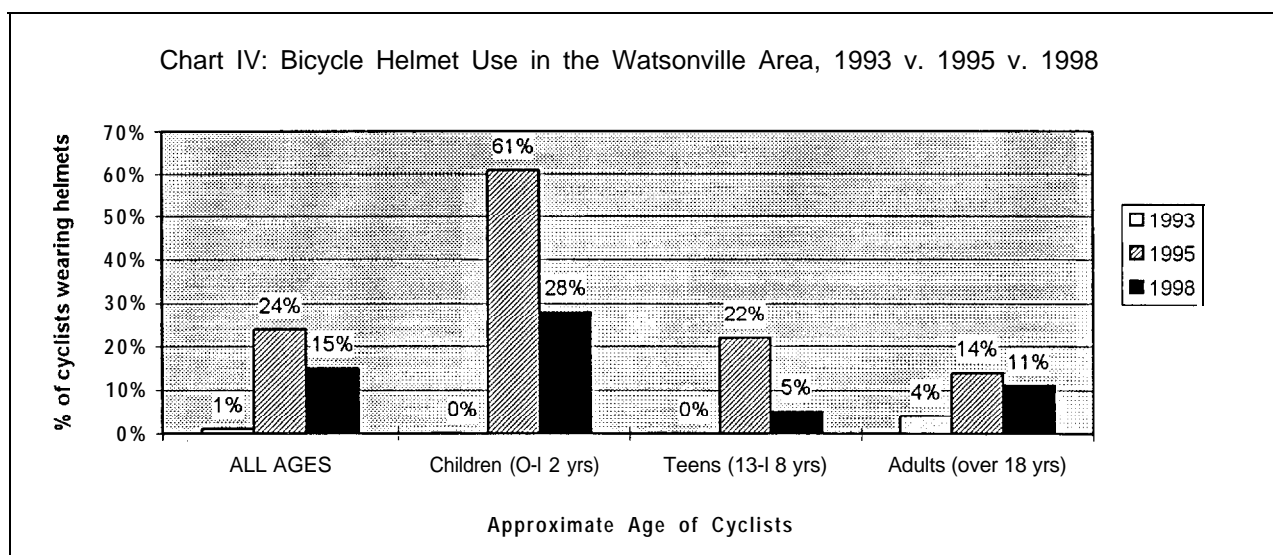


Chart III shows that for teens age 13 to 18, bicycle helmet use declined somewhat from 24% in 1995 to 20% in 1998. Riding on the right also declined, from 67% to 59%. For stopping at stop signs and lights, teens followed the trend of all age groups, increasing from a 39% rate in 1995 to 59% in 1998. Teens continue to wear bicycle helmets and stop at stop signs and lights at a much lower rate than younger children.

Additional data is available for the Watsonville area from a 1993 study on bicycle helmet use. (The north county sites in the 1993 study are not comparable to the 1995 north county sites.) Chart IV shows helmet use by age in the Watsonville area. Helmet use among children in the Watsonville area rose dramatically from 0% in 1993 to 61% in 1995, right after the bicycle helmet law started being enforced. By 1998 the rate had dropped to 28%. Among Watsonville teens age 13 to 18 years, helmet use rose from 0% in 1993 to 22% in 1995, then dropped to only 5% in 1998.



Review of Outreach Efforts

During 1995 to 1998 the Coalition conducted many outreach, education, and low-cost helmet programs for the Latino community, especially the Watsonville area.

When the helmet law fine began January 1, 1995, the Community Traffic Safety Coalition and Watsonville Police Department (WPD) worked very hard to advertise the new law to parents through schools and the Spanish media. WPD gave frequent warnings and tickets when necessary. In a county-wide bicycle safety reward program which started in January 1996, WPD and CHP were very active in the Watsonville area distributing the “cheeseburger cite” rewards to children wearing helmets and following bicycle safety rules.

During 1995 to 1998 Health Services Agency (HSA) staff and Community Traffic Safety Coalition volunteers taught bicycle safety to 425 classes at 39 elementary schools in the county. A total of 11,284 children participated, including 5,286 in the Watsonville area. Most of the presentations in the Watsonville area and many in other areas of the county were bilingual in English and Spanish.

Through HSA and Coalition programs, almost 2000 bicycle helmets were sold at a subsidized

cost of \$5 or given away to children in Watsonville during the years between the two studies. Bicycle helmets continue to sell well in Watsonville through a current program with the Watsonville Parks and Recreation Department. In addition, HSA staff have tried to reach parents with bicycle safety information since the 1995 study, but have only found a few opportunities so far.

A special bicycle helmet program in 1996-97 worked with youth involved with "low-rider" bicycles to make bicycle helmets more appealing to youth. Bicycle helmet use *reported* by middle school students in Watsonville increased from 20% before the program in 1996 to 43% in 1997. Bicycle helmet use *observed* in 1998 was 39% for children under 13 and only 20% for teens age 13 to 18.

Discussion

The bicycle safety outreach to the Latino community conducted during 1995 to 1998 focused on children and parents. Predictably, improvements in bicycle safety behavior were strongest for children under 13. Education efforts appear to have been most successful in encouraging children to ride with traffic and stop at stop signs and lights. Children made much greater gains than adults in both these behaviors. For children, riding on the right improved from 42% in 1993 to 57% in 1998. Stopping improved from 48% in 1993 to 76% in 1998. Helmet use, however, will require new strategies.

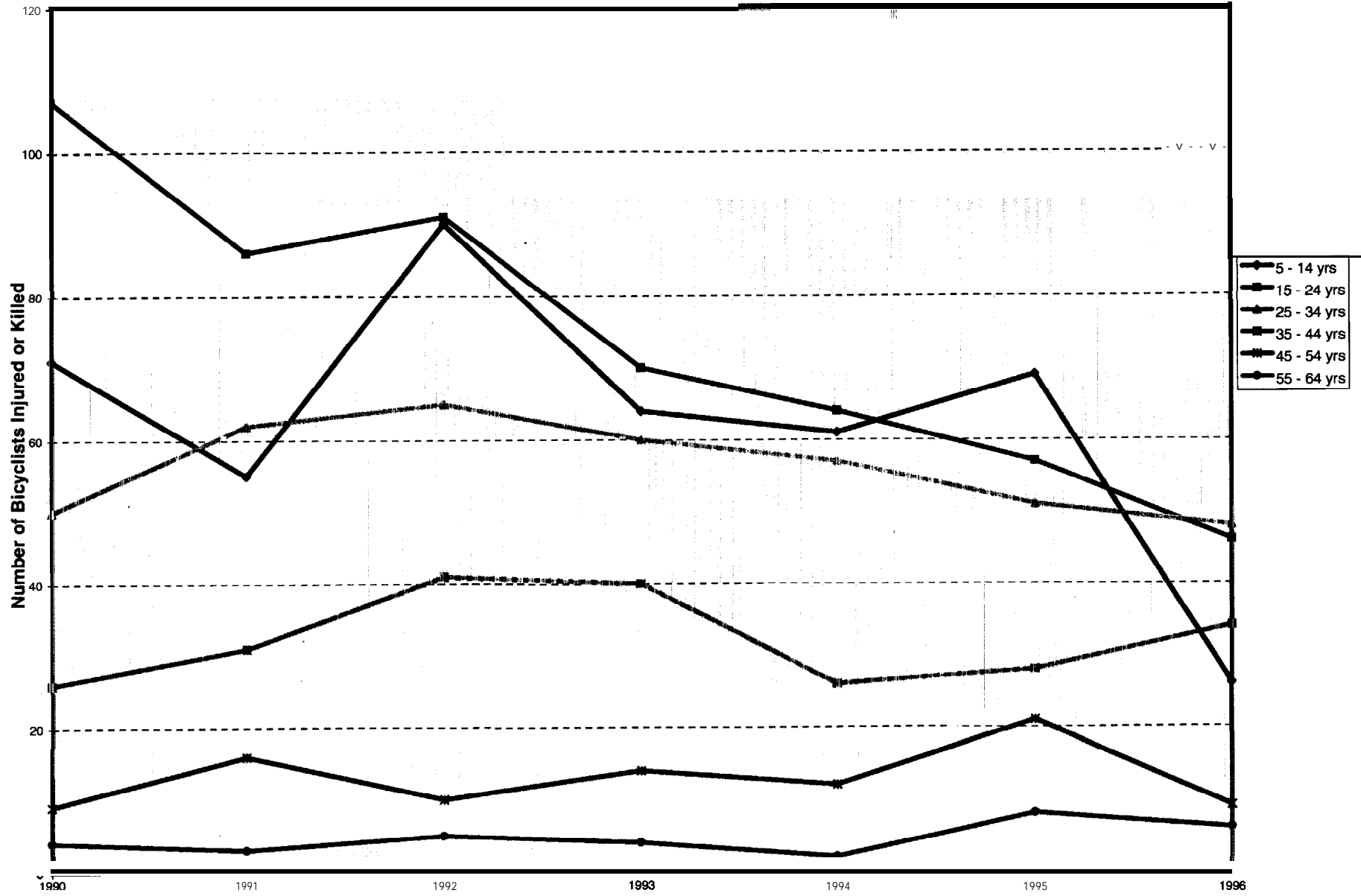
Bicycle helmet use among children and teens in Watsonville increased substantially from 1993 to 1995 when the Youth Bicycle Helmet Law was first enforced, then declined sharply from 1995 to 1998, even though helmet use improved at the Santa Cruz sites during the same time period. The high participation in bicycle helmet sales in the Watsonville area suggest that many children have helmets but do not wear them.

Possible causes include differences in local norms, and declines in enforcement. Bicycling is much more common in north county, including many adults who wear helmets. With fewer role models, the norm is much slower to change in the Watsonville area. HSA staff teaching bicycle safety in Watsonville elementary schools report that children are all aware of the Bicycle Helmet Law, but know that it is not currently enforced. Watsonville Police Department reports that they have stopped writing tickets for lack of bicycle helmets because most of the citations are dismissed in court since officers cannot prove prior warning. (Capitola Police Department reports the same problem.)

Conclusions

Education efforts have been successful at improving riding with traffic and stopping at stop signs and lights among children. Helmet use, however, will require new enforcement and education strategies. The Community Traffic Safety Coalition, in cooperation with the Health Services Agency, will continue to direct resources to address the special needs identified in south county and among youth. One strategy being considered locally to increase compliance with bicycle-related traffic laws is a youth traffic school. Youth violators and their parents would attend a class on bicycle and pedestrian safety as an alternative to paying fines. This strategy has been implemented in other areas of California including Huntington Beach and Fairfield. Another possibility is to reorganize the Coalition's bicycle safety reward program. Special messages to counter the risk-taking behavior of males and youth continue to be needed. The Health Services Agency will continue education in Watsonville schools, and renew efforts to reach parents.

Santa Cruz County Bicyclist Injuries by Age and Year



Data Source: Statewide Integrated Traffic Reporting System