



Planning — May 2003

## Planning Safe Routes to School

By Bruce S. Appleyard, AICP

How do my kids get to school? That's one of the most fundamental transportation questions parents face. In 1969, according to the Federal Highway Administration, about half of all children ages five to 18 either walked or biked to school. By 2001, 85 percent of all children between five and 15 were chauffeured to school by either a parent or a bus driver.

This change has had a disastrous effect on the morning commute and on the sense of community around schools. In Marin County, California, for example, it is estimated that 21 percent to 27 percent of peak morning traffic is school-related.

The reasons are obvious: The journey between home and school has become longer and more treacherous because of decades of auto-oriented suburbanization. National school guidelines recommending minimum school lot sizes can often be met only on the fringes of urban areas. Parents are concerned that their children will be exposed to dangerous strangers. Sidewalks, crosswalks, and bike paths are scarce.



Forty percent of parents polled in a 1999 national survey by the Centers for Disease Control cited traffic danger as a major barrier to allowing children to walk to school. And in 9,000 "walkability" audits conducted across the country, the National Safe Kids Campaign found that nearly 60 percent of parents and children encountered at least one serious hazard on their way to school.

The Safe Routes to School initiative (SR2S) is an attempt to overcome the physical and psychological barriers between home and school and give children (and their parents) more freedom and a healthier lifestyle. Clearly, that's needed. According to the Centers for Disease Control, children in the U.S. are experiencing skyrocketing obesity rates, in part because of the lack of infrastructure supporting physical activity.

In transportation planning terms, SR2S can be seen as a kind of transportation demand management strategy. Like other TDM strategies, this one uses marketing and promotion campaigns. But SR2S has an equally strong emphasis on the funding and construction of infrastructure that is necessary to actually allow walking and biking to occur. And in this case, the major support comes from the grassroots: parents, teachers, and children.

### Where it started

In the mid-1970s, Denmark was cited as having Europe's highest child pedestrian accident rate. This prompted the city of Odense to start a pilot program in which all 45 of its schools identified specific road dangers. The city created a network of pedestrian and bicycle paths, narrowed roads, and added traffic islands. In 10 years, child pedestrian and cyclist casualties fell by more than 80 percent. Soon after, Denmark established what is considered to be the first national SR2S program.

In Great Britain, a group called Sustrans initiated 10 Safe Routes to Schools pilot projects in 1995. Bike lanes, traffic calming, and raised crossings cut traffic speed considerably. Two years into the initiative, bike use tripled. In the reduced speed zones that were created, child pedestrian casualties fell a dramatic 77 percent and cycling casualties fell 28 percent.

Two Canadian programs sprang up in the late '90s. Go for the Green in Toronto and Way to Go in British Columbia both have organized events to encourage children to walk and bike to school.

The first formal program in the U.S. was started in the New York borough of the Bronx in 1997. The borough president's office joined with the nonprofit Transportation Alternatives to create the Bronx Safe Routes to School program. Since 1999, the program has worked with parents, principals, teachers, community leaders, and city agencies to create pedestrian improvements around 38 elementary schools.

I got involved with SR2S issues in 1993, when I volunteered to help Parkmead, a suburban community just east of San Francisco, pinpoint some improvements to make the neighborhood more walkable. Like many post-World War II suburban neighborhoods, Parkmead, located in Contra Costa County, halfheartedly followed Clarence Perry's Neighborhood Unit principles. The housing centers on an elementary school — but there were no sidewalks to help children walk to school.

Two colleagues (Vijay Jayachandran and Marcus Diederich) and I used a mapping exercise and parent surveys to document the effects of automobile traffic. When we asked the children to map their neighborhood, we found that exposure to high volumes of speeding traffic had negatively affected their perception of their surroundings.

The mapping exercise helped us to needed improvements and encouraged the community to apply for a \$40,000 California Transit Development Act grant to build a sidewalk along one of its heavily trafficked streets. The sidewalk was built in 1996.

### Good marks



Marin County provides an excellent example of a comprehensive SR2S program. It was started in August 2000 by two members of the Marin County Bicycle Coalition who organized events such as a "walking school bus," a parade on International Walk to School Day, and a bicycle rodeo. That fall, the county, along with Arlington, Massachusetts, won grants from the National Highway Traffic Safety Administration to run SR2S pilot programs.

Wendi Kallins, the program director in Marin, aided by a traffic engineer, David Parisi, helped community residents identify low-cost improvements and create long-term plans. Several Marin County cities and the county itself have already implemented some improvements, including revamping crosswalks, installing high-visibility signage, modifying traffic signal phasing, and encouraging citizens to report speeding.



Two Marin cities have received a combined total of nearly \$1 million in grants from the state Safe Routes to School program and other sources to create new paths, sidewalks, and even a pedestrian bridge. Other teams have laid out plans for additional infrastructure and traffic calming improvements and are working to secure the necessary

funding.

These efforts have resulted in dramatic behavioral changes. In February 2000, a survey of parents in Mill Valley showed that almost 70 percent of students were driven to school. Traffic counts revealed that 26 percent of the community's morning traffic was school-related (countywide, the estimates are 21 percent). By the spring of 2002, a countywide student survey indicated that walking and biking to school had increased by 80 percent in just two years.

### The Bronx is up

Children in the Bronx have always walked to school (85 percent of them still do so, according to one estimate). The issue there is how to keep that figure from dropping as more parents drive and traffic becomes more dangerous. Since 1997, the Bronx Safe Routes to School program has worked with community residents to identify walking routes and plan pedestrian improvements around 38 elementary schools, as noted above.

The Bronx program inspired the New York City Department of Transportation to launch its own, citywide Safe Schools program last spring, starting with a \$2.5 million planning initiative. The city expects to spend some \$50 million on pedestrian improvements around schools over the next two decades. Contractors are now completing computer maps of street conditions in the vicinity of 1,350 neighborhood schools. Pedestrian improvements and traffic-calming devices are slated to be installed around the 135 most dangerous schools by January 2005.

## County and state



Another example of a responsive local government is Arlington County, Virginia, which last spring adopted a comprehensive SR2S program.

It's instructive to see how the county put together the funding for this program. About \$1.75 million over four years is coming from its general fund. Other sources will pay for complementary measures, such as crossing guards, signage, striping, and stamped asphalt. Another budget item, a \$1 million annual traffic-calming program, is being used to install speed humps and extend curbs near schools.



In addition, the county is redesigning its school renovation and expansion projects to incorporate pedestrian safety improvements.

Finally, to raise awareness, it is including information about the SR2S program in utility bills and providing public service announcements to cable television stations.

On the state level, Maryland legislators have approved a pilot Safe Routes to School program at two schools, in northeast Baltimore and Montgomery County, near Washington, D.C. In both cases, parents and community residents worked with the school to identify safety hazards and recommend improvements that would encourage walking and biking. The idea of the program is to develop a participatory planning process that can be used by other jurisdictions.

The program has already had an impact, including physical improvements at both schools. Baltimore's Montebello School has a new drop-off area and Rolling Terrace, the suburban school, has new sidewalks. At both, volunteer parent groups have been formed to encourage students and their families to practice safe walking and driving behavior.

Although the state legislation did not officially designate funding for the infrastructure improvements identified through the planning process, many of the recommended physical improvements rely on a combination of state and local funds. The consultant for the pilot projects, Tammy Sufi of the Toole Design Group in Laurel, Maryland, notes, "Low-cost physical improvements can make a big difference and galvanize parents into action."

## Good advice

Traffic engineer David Parisi and Marin County program director Wendi Kallins have developed a framework for those interested in formulating and carrying out an SR2S program. They recommend the following plan of action:

- Jump start the process with a kickoff event that will create excitement and develop a sense of community ownership. That event could be International Walk to School Day, which is usually in the first part of October. Another strategy is to designate "Walk to School Wednesdays" (or Tuesdays, or ...).
- Create a Safe Routes to School Team, bringing in all the interest groups that have a stake in the outcome. The list should include community residents, police, public works engineers, as well as parents, teachers and, of course, children.
- Hold a community workshop to gather input on needed safety improvements from both the school community and larger neighborhood. This is also a way to disseminate information about the program.

Parisi and Kallins further recommend conducting two surveys early in the process: one of the students to determine how they get to school and another of parents to measure attitudes and identify obstacles and opportunities for changing behavior.

Another recommended task is to observe students and traffic along the corridors leading to the schools at arrival and dismissal times. Parisi and Kallins suggest looking out for such things as whether sidewalks and pathways are clear of obstacles, in good condition, and continuous along the routes; whether crosswalks and pedestrian signals are in place at busy intersections; and whether there are curb ramps.

They would also ask: Do drivers yield to pedestrians at driveways and crosswalks? Is secure and

convenient bicycle parking available at school? Is the route wide enough for bicycles? Is the curb radius excessively wide, thus encouraging drivers to speed? Is visibility good, especially for younger children? Are signs and pavement markings adequate? Is there enough lighting?

Based on his engineering experience, Parisi suggests these inexpensive techniques for creating a safe route to school:

- Trim shrubs that limit sight distance and encroach into walkways.
- Install higher visibility signs and pavement markings.
- Close gaps in discontinuous sidewalks.
- Organize "walking school buses" to allow children to make the journey to school together.
- Designate "bicycle boulevards," traffic-calmed routes to school that provide adequate space for cyclists and the fewest possible conflict points with automobiles.
- Narrow travel lanes and create bicycle lanes.
- Increase the size of designated school zones.
- Institute a safety education campaign.

### **Creative funding**

Obviously, an engineering component is part of any comprehensive SR2S program, and that means money for infrastructure. One way to get this is to convince state legislatures to dedicate part of their transportation funds for SR2S projects.

In 1999, California became the first state to pass such legislation, specifically designating a third of its federal safety set-aside money, \$20 million to \$25 million, for construction projects that would make corridors leading to schools safer. Since then, eight other states have instituted Safe Routes to School programs with varying funding commitments. They are Delaware, Florida, Maryland, Oregon, Pennsylvania, Rhode Island, Texas, and Washington.

Even with these efforts, it's hard to keep up with the demand for SR2S infrastructure. In California, for example, there were \$240 million worth of project requests in the first two years of the pilot SR2S program, but only \$45 million was available. Texas at first allocated only \$3 million a year, but after being overwhelmed with requests this last year, it has upped the allocation to \$4.3 million.

TEA-21, the federal surface transportation act, specifically allows safety funds to be spent for pedestrian, bicycle, and traffic-calming improvements. Few funds go for this purpose, however, partly because of the criteria used by most state transportation departments to set priorities for safety projects.

The agencies rely on crash rates — essentially the number of recorded crashes involving injuries or property damage, divided by either the number of vehicle miles traveled along a stretch of road or the number of vehicles entering an intersection. Yet pedestrians and cyclists generally avoid the most dangerous intersections, potentially skewing the evaluation process away from supporting pedestrian and bicycle infrastructure.

There is a better model, which is the prioritization process that has been adopted by the Washington State transportation department. In addition to vehicle volume, speed, and pedestrian accident history, this process specifically identifies locations that are hazardous for pedestrians and cyclists. It takes into account such things as the concentration of vulnerable groups (children, the elderly, handicapped) and the potential of the surrounding land uses to generate walking trips, and it assesses the walking and cycling facilities.

A recent national survey by the Surface Transportation Policy Project found that three-fourths of Americans favor using highway funds for walkability improvements, including sidewalks and crosswalks to make it safer and easier for children to walk to school.

The Safe Routes to School movement advocates that Congress, now considering the next transportation authorization bill (the successor to TEA-21), will dedicate funds for a national SR2S program that would allow communities to carry out comprehensive safe routes programs. Our parents, teachers, communities, and of course our children, are depending on it. The expense and effort required can seem daunting, but the potential rewards are tremendous.

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### Resources

**Images:** Top — Under construction in 1996, a bicycle and pedestrian path in the Parkway neighborhood in Walnut Creek, California. Photo by Bruce Appleyard, Appleyard Associates. Middle — In just two years, the walk-to-school rate in Mill Valley, California, zoomed by 80%, in part because of pathway improvements like this. The before photo is looking north; after, south. Photos by David Parisi, Parisi Associates. Bottom — A volunteer parent group at Baltimore's Montebello Elementary School encourages students and their families to walk and drive safely. The school is part of a pilot Safe Routes to School program in Maryland. Photos by the Toole Design Group.

**Inspiration:** The SR2S movement is inspired in part by the work of Donald Appleyard in his 1981 book, *Livable Streets*

**Survey:** FHWA's National Household Travel Survey is available online at [www.fhwa.dot.gov/policy/ohpi/nhts/index.htm](http://www.fhwa.dot.gov/policy/ohpi/nhts/index.htm).

**Toolkit:** *The Safe Routes to School Toolkit*, by Wendi Kallins, published by the National Highway Traffic Safety Administration in 2002, is free online at [www.nhtsa.gov](http://www.nhtsa.gov). Transportation Tools to Improve Children's Health and Mobility, by David Parisi, is available at [www.lgc.org](http://www.lgc.org).

**On the web:** See [www.parisi-associates.com](http://www.parisi-associates.com), [www.transact.org](http://www.transact.org), and [www.walkablecommunities.org](http://www.walkablecommunities.org).

**Stop speeding:** The Keep Kids Alive, Drive 25 safety initiative was started in 1998 in Omaha, Nebraska, and has since spread to more than 200 communities in 39 states. KKAD25 campaigns spread the safe driving message through yard signs and other techniques. About half the programs are sponsored by local governments, the rest by police departments.