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16. Abstract Fewer children are walking to school than ever before. Many researchers contribute this to parents' fears that the walking environment is unsafe for children. As a result, federal and state programs were created to provide safe routes to school for children. This research will examine the Texas Department of Transportation's 2002 Safe Routes to Schools Program (SR2S) in and will look at the differences between this program and the new program being implemented under SAFETEA-LU.					
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**An Analysis of the Texas 2002 Safe Routes
to Schools Program in Selected Cities**

by

Gwen Goodwin

and

Yasmina Soria

Research Report SWUTC/08/167362-1
(continuation of SWUTC Study #167960)

Sponsored by
Southwest Region University Transportation Center

Center for Transportation Training and Research
Texas Southern University
3100 Cleburne Avenue
Houston, TX 77004

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ABSTRACT

Over the past decade, studies have shown that fewer children walk to school. Many researchers contribute this to parents' fears that the walking environment is unsafe for children. As a result, federal and state programs were created to provide safe routes to school for all school aged children. This research will document the Texas Department of Transportation's 2002 Safe Routes to Schools Program (SR2S) and will look at the differences between this program and the new program being implemented under SAFETEA-LU.

EXECUTIVE SUMMARY

Since 1970, the number of school aged children walking to school dropped dramatically while childhood obesity increased rapidly. Researchers have found that many factors are influencing why children do not walk to school: schools are too far from homes, neighborhoods are unsafe, and parents are driving kids; however, more and more, parents have indicated that unsafe walking conditions is a major reason why their children do not walk to school. For example, surveys from parents in the Northside Independent School District in San Antonio, Texas indicated that their major concerns involved unsafe or hazardous walking conditions. As a result, parents chose to drive their students to school (Northside Safe Routes to Schools Application, 2002).

Over the years, parent groups, bicyclists, transportation professionals, urban planners, and health care professions joined forces and developed ways to combat unsafe walking/biking conditions to school and promote good health. This effort manifested itself into the Safe Routes to Schools Program. In 2002, the Texas Department of Transportation (TxDOT) implemented the 2002 Safe Routes to Schools (SR2S) program. While 27 applications were awarded, fewer than 10 projects were actually constructed.

Initially, this study was to examine the impacts of the SR2S in San Antonio; however, limited data, availability of information, changes in the proposed projects, delays in project construction, staff changes, and other issues, resulted in a restructuring of the study. Nonetheless, this study examined funded projects from the City of Mesquite, City of Pflugerville, City of San Marcos, and City of San Antonio. After reviewing the 2002 SR2S program, the following findings emerged.

Hazardous conditions

- Students frequently were forced to walk in steep ditches/drainways, in the right-of-way, and along traffic moving at speeds up to 50 mph because no sidewalk was available. In addition, these “routes/paths” were accessible according to the Americans with Disabilities Act (ADA).
- The Texas Education Code requires that districts adopt policy to transport children, who live within two miles of the school, when hazardous/unsafe conditions prevented them from safely reaching school. Most districts, like San Marcos Consolidated School district, also used their district funds to pay for this transport.
- Numerous school districts face safety problems that continue to go unaddressed because TxDOT’s SR2S funding was limited to 4.2 million dollars; in addition, these funds were only reserved for infrastructure projects. Educational materials and other awareness activities promoting good health were not allowed.

Designation of school zones

- Parents, school officials and administrators recognized safety and hazardous conditions around schools, yet the local government’s policy did not designate

school zones near high schools. This is the case in San Antonio, where city officials will only make said designations on a case by case basis.

- Safety issues for high school aged children remained a concern as accidents happened with regularity. Collisions involve student drivers and pedestrians, bus and pedestrian accidents, and teacher and pedestrian accidents. City officials may need to reevaluate this policy and consider funding safety improvements around high schools.

New SR2S guidelines

- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) provides \$612 million for the federal SR2S 2005-2009 program. TxDOT's SR2S program will receive \$40 million dollars over the next five years.
- Matching funds requirements were eliminated, which were difficult for smaller cities/counties to meet. This change may encourage more schools, non profits, and smaller cities to participate in the program.
- Non-infrastructure and educational activities are eligible for funding; this allows for creative opportunities to improve the overall health of school aged children.
- New guidelines now allow school districts and non profit organizations to apply directly to TxDOT for funding, instead of being a third party recipient via a city government. While positive, this could result in few city/school district collaboratives.
- New guidelines limit eligible projects and activities to schools with grades K-8; thus leaving older students vulnerable.

The intent of TxDOT's 2002 SR2S program was to improve conditions for school aged children traveling to school. Although the program provided funds to construct safety improvement projects for 27 governmental entities, countless other area schools are still in need. TxDOT officials anticipate that the new federally funded program will build on the efforts of the 2002 program by enhancing infrastructure and also promoting activities to improve the overall health of children. Ultimately, this combination will result in a safer route to school.

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LITERATURE REVIEW

Safe Routes to School (SR2S) is a national and international movement to enable and encourage children, including those with disabilities, to bicycle and walk to school. The purpose of this program is to provide a variety of important benefits to kids and their communities, including improved health and well-being, reduced traffic congestion, better air quality, and enhanced neighborhood safety. Safe Routes to School is also one of the possible solutions for the alarming nationwide trend toward child obesity and inactivity.

SR2S programs examine conditions around schools and facilitate the planning, development, and implementation of projects and activities that will provide an appealing environment for walking and biking, improve safety, and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. Communities construct new bike lanes, pathways, and sidewalks, as well as launch SR2S education and promotion campaigns in elementary and middle schools. SR2S programs are sustained efforts by parents, other community members, community leaders and local, state, and federal government.

Relevance of the Program

Safe Routes to Schools is a comprehensive program designed to do the following:

- improve the bicycle and pedestrian safety of school-age children;
- encourage a healthy and active lifestyle from an early age;
- enable and encourage children, including those with disabilities, to walk and bicycle to school; and
- facilitate projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

“In the United States, childhood levels of obesity have tripled in the past 20 years, leading to many health problems. This is related to the fact that children are not getting enough exercise and are being chauffeured everywhere in their parents’ cars” (Hubsmith Interview, retrieved 2007). SR2S is important because the program provides a way to integrate physical activity into daily lifestyles. SR2S reverses this trend by integrating health, fitness, traffic relief, environmental awareness, and safety under one program.

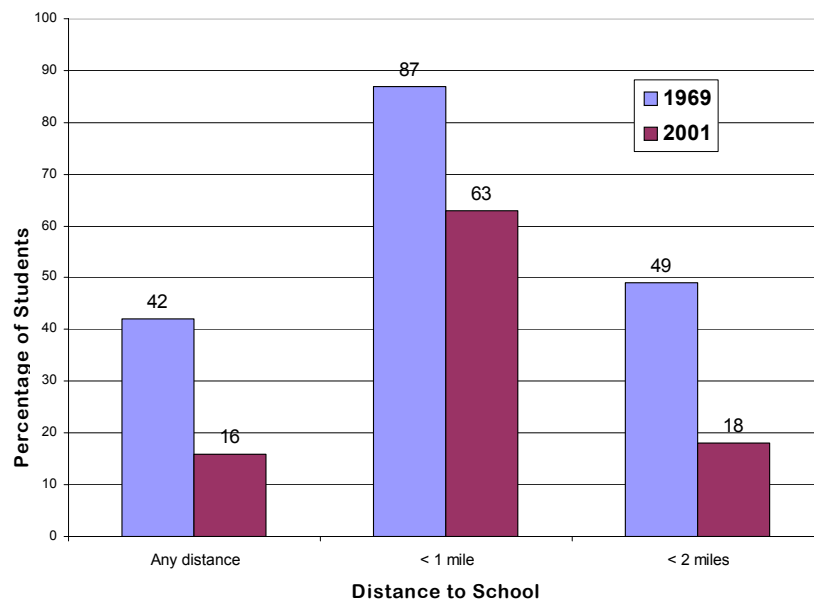
History of SR2S

Not long ago, children routinely moved around their neighborhoods by foot or by bicycle, and that was often how they traveled to and from school. That is no longer the case. Whether looking at the total proportion of children walking and bicycling to school, or just those children that live within a mile of the school, the decline is apparent. According to the Federal Highway Administration (FHWA), in 1969, more than 42 percent of children ages 5 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. In 1969, 87 percent of children 5 to 18 years of age who lived within one mile of school walked or bicycled to school. In 2001, 63 percent of children 5 to 18 years of age who

lived within one mile of school walked or bicycled to school. (See Figure 1: Walk and Bike to School.)

The circumstances that have led to a decline in walking and bicycling to school have created a self-perpetuating cycle. As motor vehicle traffic increases, parents became more convinced that it is unsafe for their children to walk or bicycle to school. Parents decided to drive their children to school, therefore adding more traffic to the road (SRTS Guide, 2007). “This change has had a disastrous effect on the morning commute and on the sense of community around schools” (Appleyard, 2003).

Figure 1: Walk and Bike to School for Ages 5 to 18



Source: 1969 Nationwide Personal Transportation Survey (USDOT, 1972) and 2001 National Household Travel Survey

Many factors contribute to the reduction in children walking and bicycling to school. The U.S. Centers for Disease Control and Prevention published the findings from two nationwide surveys of parents that identify barriers that prevent them from allowing their children to walk to school. In the 2004 survey, 1,588 adults with children aged 5 to 18 years answered questions about barriers to walking to school. Most parents cited five barriers: distance to school, traffic, weather, crime, and opposing school policies.

- Distance to School: Most schools built after the 1970's were on the edges of communities where the land costs were lower. This required many students to travel farther making it difficult, if not impossible, for children to walk or bicycle to school.
- Traffic-Related Danger: In 2004, 493 pedestrians and bicyclists ages 14 and under were killed and approximately 29,000 children were injured while

walking or bicycling in the United States. An increasingly common response by many parents was to drive their child to school. However, being inside a motor vehicle does not ensure safety. In fact, motor vehicle crashes are the leading cause of death for school-age children.

- Weather Conditions: While the weather has not changed much since a generation ago when so many children walked or biked, adverse weather is frequently cited as a reason for not allowing children to walk to school.
- Crime Danger: Parents may fear that crimes will be committed against their children. Crime concerns may be based on both real and perceived crime. In any case, these fears affect how many children are allowed to walk or bicycle to school.
- Opposing School Policies: Some schools or communities enforce school policies that prohibit children from walking and bicycling to school. Although the restriction may have stemmed from safety concerns for students, its implications could work against a SRTS program. The solution may be to address the safety issues rather than permanently prohibit walking and bicycling to school. Identifying and understanding the reasons underlying the policy can help programs address important issues and reverse the policy, if appropriate.

Table 1: Barriers to Children Walking and Biking to School

Barrier	Percent of Parents Identifying w/ barrier*
Distance to School	61.5
Traffic Related Dangers	30.4
Weather	18.6
Crime Danger	11.7
Opposing School Policy	6
Other (not identified)	15

*Exceeds 100% due to multiple responses

Source: SRTS Guide, 2007

Parents cited one or more of the six reasons as shown below in Table 1. Throughout the world, government officials are concerned about child pedestrian safety. “In the mid-1970s, Denmark was cited as having Europe's highest child pedestrian accident rate” (Appleyard, 2003). This prompted the City of Odense to start a pilot program in which all 45 of its schools identified specific road dangers. Odense 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 (Appleyard, 2003). “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, child pedestrian casualties fell 77 percent and cycling casualties fell 28 percent” (Appleyard, 2003). 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.

Research on the safety of children walking and bicycling to school began in the U.S. in the early 1970s and was highlighted by the Federal Highway Administration’s (FHWA’s) 1975 publication: *School Trip Safety and Urban Play Areas*. “The goal of the document

was to develop guidelines for the protection of young pedestrians (5 to 14 years) walking to and from school, entering and leaving school buses, and at neighborhood play” (FHWA, 1975). The research included surveying students regarding knowledge of traffic control devices, student behavior, driver knowledge, and accident data. Significant findings concluded that younger students (ages 5 to 8 years) were more likely to be involved in accidents; younger students could not distinguish the various traffic control devices. Study recommendations included developing state and local safety programs for drivers and students; city officials installing the appropriate traffic devices and eliminating hazards; and school officials developing safe walking route maps (FHWA, 1975).

While research continued on the subject, Contra Costa County started the initial “safe routes to schools program”. In the early 1990’s, Contra Costa County, California, contained a post-World War II suburban neighborhood without sidewalks. Three researchers administered a neighborhood map exercise and parent surveys to document the effects of automobile traffic. When the children were asked to map their neighborhood, they found that “exposure to high volumes of speeding traffic had negatively affected their perceptions of their surroundings” (Appleyard, 2003). Next, the research group applied for a \$40,000 California Transit Development Act grant to build a sidewalk along one of its heavily traveled streets. The sidewalk was built in 1996 (Appleyard, 2003).

The first modern Safe Routes to School program in the U.S. began in 1997 in the Bronx, NY. “The borough president's office joined with the non profit 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” (Appleyard, 2003).

In 1998, Congress funded two pilot SR2S programs through the National Highway Traffic Safety Administration. NHTSA issued \$50,000 to each Safe Routes to School pilot programs in Marin County, California and Arlington, Massachusetts. Within a year after the launch of the pilot programs, many other grassroots Safe Routes to School efforts were started throughout the United States.

As the success of the NHTSA pilot programs spread, interest in a broader program grew. In 2002, lobbying efforts began for a larger SR2S program supported by federal legislation. By 2003, the League of American Bicyclists organized the first meeting of leaders in pedestrian and bicycle issues to talk about SR2S issues and how a national program might work. At the same time, a number of states were developing their own SR2S programs, thus building momentum for the movement.

Legislation and Funding

Most Safe Routes to School projects rely on a mixture of local, state, and federal funding. In general, infrastructure funds (also called capital funds) are used to assess and make improvements to the walking and bicycling physical environment around schools. These include many activities such as installing sidewalks or crosswalks, fixing hazardous

facilities, or slowing traffic near schools. Infrastructure funds almost always come from governmental sources, including many federal programs, but the decisions about how to use them are frequently made at the local level.

In 1999, California became the first state to pass such legislation, specifically designating a third of its federal (TEA-21) safety set-aside money, \$20-\$25 million per year, for construction projects that would make corridors leading to schools safer (Active Living Resource Center, Retrieved October 1, 2007). Since then, eight other states have instituted SR2S 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 (Appleyard, 2003). Texas at first allocated only \$3 million a year, but after being overwhelmed with requests, it increased the allocation to \$4.3 million.

The Transportation Equity Act for the 21st Century of 1998 (TEA-21) specifically allowed safety funds to be spent for pedestrian, bicycle, and traffic-calming improvements. However, few funds were used for this purpose, partly because of the criteria used by most state transportation departments to set priorities for safety projects (Appleyard, 2003). In most cases, these 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.

In August 2005, President Bush signed Public Law (P.L.) 109 - The Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) which was to improve safety, reduce traffic congestion, improve efficiency in freight movement, increase intermodal connectivity, and protect the environment. This federal transportation bill provided \$286.4 billion, including \$612 million for SR2S, through Fiscal Year (FY) 2009 (American Public Transportation Association, 2005). These SR2S funds are administered by the Federal Highway Administration (FHWA). Program and procedural changes passed are highlighted in the following section.

Conclusion

While the SR2S program has a relatively short history, it is nonetheless an important issue that affects our future: children. This study will examine Texas' 2002 Safe Routes to Schools program and discuss relevant program changes planned SR2S funding years 2005-2009.

2002 TEXAS SAFE ROUTES TO SCHOOLS PROGRAM (SR2S)

Introduction

The 2001 National Household Travel Survey (NHTS) indicated that more than 14 percent of trips were work related, while another 44 percent were family/personal business related. A growing number of trips are listed as school/church; data for this category indicated that school/church trips claimed almost 10 percent of personal trips.

Table 2: Distribution of Trips by Purpose (Percent)

	Percent	SE
Work	14.8	0.12
Work-related	2.9	0.08
Family/personal business	44.6	0.22
School/church	9.8	0.11
Social/recreational	27.1	0.21
Other	0.8	0.03
Total	100.0	

NOTE: SE = standard error.

SOURCE: Table A-11 from the 2001 National Household Travel Survey, daily trip file, U.S. Department of Transportation.

Over the past few decades, researchers have noted that fewer children are walking to school than ever before. Many researchers contributed this to working parents, multi-car households, limited time for walking or bicycling, parental perceptions regarding physical safety, and unsafe environments for children.

Despite the potential benefits of walking or bicycling to school every day, many parents drive their children because they are concerned about safety. According to the National Highway Traffic Safety Administration, from 1992 to 2001 there

were 6,679 pedestrian fatalities among children under the age of 15 (National Highway Traffic Safety Administration, 2003). This number represents 12.6 percent of all pedestrian fatalities for that 10-year time period. In 2002, nearly 288,900 children under the age of 14 were treated in hospital emergency rooms for bicycle-related injuries. “Nearly half (47 percent) of children ages 14 and under who are hospitalized for bicycle-related injuries are diagnosed with a traumatic brain injury” (National SAFE KIDS Campaign, 2004).

While not all children biking and walking to school are injured, the State of Texas acknowledged that even children living within two miles of school were not walking to school because they faced unsafe conditions. As a result, the Texas Education Code Section 42.155(d) provides funding to combat this issue. The code states the following:

A district or county may apply for and on approval of the commissioner receive an additional amount of up to 10 percent of its regular transportation allotment to be used for the transportation of children living within two miles of the school they attend who would be subject to hazardous traffic conditions if they walked to school. Each board of trustees shall provide to the commissioner the definition of hazardous conditions applicable to that district and shall identify the specific hazardous areas for which the allocation is requested. A hazardous

condition exists where no walkway is provided and children must walk along or cross a freeway or expressway, an underpass, and overpass or a bridge, an uncontrolled major traffic artery, an industrial or commercial area, or another comparable condition.

The Center of Disease Control (CDC) indicates that as more children are driven, instead of walking, doctors are noting increased instances of obesity. The CDC warns that increased numbers of childhood obesity coupled with inactivity is leading to more cases of diabetes and cardiovascular disease in young children.

Driving children to school also leads to congestion around the school which can also contribute to poor air quality. This is especially true in cities and counties that have problems achieving and sustaining appropriate air quality measures (CDC, May 2007).

As concerns regarding health and safety continued to grow nationally, federal and state programs were created to provide safer routes to school for school age children. Below is an examination of Texas' Safe Routes to Schools (SR2S) program.

Overview of Texas SR2S Program

The United States Code allows 10 percent of federal funds allocated to states to be used for transportation enhancement activities. In Texas, House Bill 2204 allowed these funds to be used by the Texas Department of Transportation Commission. Using these funds, the Commission authorized the creation of the 2002 Safe Routes to Schools Program (SR2S). With the Commission's approval, Texas Department of Transportation (TxDOT) used \$3,842,362 in federal funds, contributed \$341,401 in matching state funds, and expected \$905, 511 in matching local funds to implement the SR2S program. City and county governments, through their traffic departments, engineering departments and/or safety departments submitted applications for these funds (Texas Department of Transportation, August 2006).

Through TxDOT, the Commission issued a call for projects from August 2002 to December 2002. Projects were considered for funding based on the following criteria:

- Project and evaluation provided by the department's Bicycle Advisory Committee (BAC) and the department's project evaluation panel based on selection criteria contained in Title 43, Texas Administrative Code (TAC), 25.504(c)
- Safety of the traveling public
- Safety in and around school areas
- Funding availability

During the 2002 inaugural SR2S program allocation, TxDOT only funded infrastructure projects. Projects that involved childhood obesity awareness and the benefits of walking were not eligible. Nonetheless, more than 300 applications were received by TxDOT. The Commission approved 27 projects for construction. As of Spring 2007, eight were

canceled, two are pending cancellation, seven are completed, and twelve are still in progress. See Table 3 – Texas Department of Transportation’s 2002 Safe Routes to Schools Awards.

Initially, this study was to examine the impacts of the SR2S in San Antonio; however, limited data, availability of information, changes in the proposed projects, delays in project construction, staff changes, and other issues, resulted in a restructuring of the study. While in various stages of completion, this study examined projects from the City of Mesquite, City of Pflugerville, City of San Marcos, and City of San Antonio. Below are brief synopses of each.

Table 3: Texas Department of Transportation's 2002 Safe Routes to School Awards

Project Number	District	County	Applicant	Total Cost	Local Match	State Match	Federal Amount	Project Type	Project Status
214017	AUS	Hays	City of San Marcos	\$18,300	\$3,660		\$14,640	Sidewalks	In progress
216022	CRP	Bee	County of Bee	\$112,692		\$22,538	\$90,154	Sidewalks, Crosswalk	In progress
224001	ELP	El Paso	County of El Paso	\$201,160	\$40,232		\$160,928	Pedestrian/Bicycle Path, Sidewalks	In progress
224004	ELP	El Paso	County of El Paso	\$103,632	\$20,726		\$82,906	Sidewalks, Bicycle Lane	In progress
202011	FTW	Parker	City of Weatherford	\$252,850	\$50,570		\$202,280	Sidewalks, Crosswalks	In progress
205002	LBB	Lubbock	City of Lubbock	\$312,410	\$62,482		\$249,928	Sidewalks	In progress
222001	LRD	Val Verde	City of Del Rio	\$383,500	\$76,700		\$306,800	Sidewalks	In progress
221013	PHR	Hidalgo	County of Hidalgo	\$25,410		\$5,082	\$20,328	Sidewalks, Crosswalk	In progress
221014	PHR	Hidalgo	County of Hidalgo	\$14,415	\$2,883		\$11,532	Sidewalks	In progress
209001	WAC	McLennan	City of Waco	\$250,000	\$50,000		\$200,000	Sidewalks, Bicycle Lane, Crosswalks	In progress
213001	YKM	Matagorda	City of Bay City	\$291,953	\$58,391		\$233,562	Multi-use Trail, Pedestrian/Bicycle Path	In progress
214014	AUS	Travis	City of Pflugerville	\$151,158		\$30,231	\$120,927	Sidewalks	Completed
218024	DAL	Dallas	City of Mesquite	\$85,000	\$17,000		\$68,000	Sidewalks, Crosswalk, School Zone Flashers	Completed
212025	HOU	Harris	City of La Porte	\$568,746		\$113,749	\$454,997	Sidewalks	Completed
211003	LFK	Angelina	City of Lufkin	\$455,000		\$91,000	\$364,000	Sidewalks, Crosswalks	Completed
222002	LRD	Maverick	City of Eagle Pass	\$41,999	\$10,500		\$31,499	Sidewalks	Completed
206003	ODA	Ector	City of Odessa	\$59,663		\$11,932	\$47,731	Pedestrian Signals, Crosswalks	Completed
206004	ODA	Upton	City of Rankin	\$74,330		\$14,866	\$59,464	Crosswalk, School Zone Flashers, Beacons	Completed
215004	SAT	Bexar	City of San Antonio	\$551,488	\$116,400		\$435,088	Crosswalks, School Zone Flashers & Signs	Completed
225001	CHS	Knox	City of Munday	\$32,375		\$6,475	\$25,900	Improve Crosswalks (in-pavement lighting)	Canceled
218020	DAL	Dallas	City of DeSoto	\$134,395	\$26,879		\$107,516	Sidewalks, Crosswalk	Canceled
212013	HOU	Galveston	City of La Marque	\$46,205	\$9,241		\$36,964	Pedestrian/Bicycle Path	Canceled
212024	HOU	Harris	City of Pasadena	\$189,200	\$37,840		\$151,360	Sidewalks, Pedestrian Bridges	Canceled
221004	PHR	Cameron	City of Brownsville	\$375,231	\$225,231		\$150,000	Sidewalks, Crosswalk	Canceled
221006	PHR	Willacy	County of Willacy	\$50,000	\$10,000		\$40,000	Sidewalks	Canceled
221019	PHR	Hidalgo	City of McAllen	\$227,640	\$70,672	\$45,528	\$111,440	Sidewalks, Bicycle Lanes, Pedestrian Heads, Overhead School Zone Flashers	Canceled
207002	SJT	Tom Green	City of San Angelo	\$80,522	\$16,104		\$64,418	Sidewalks	Canceled
Total				\$5,089,274	\$905,511	\$341,401	\$3,842,272		

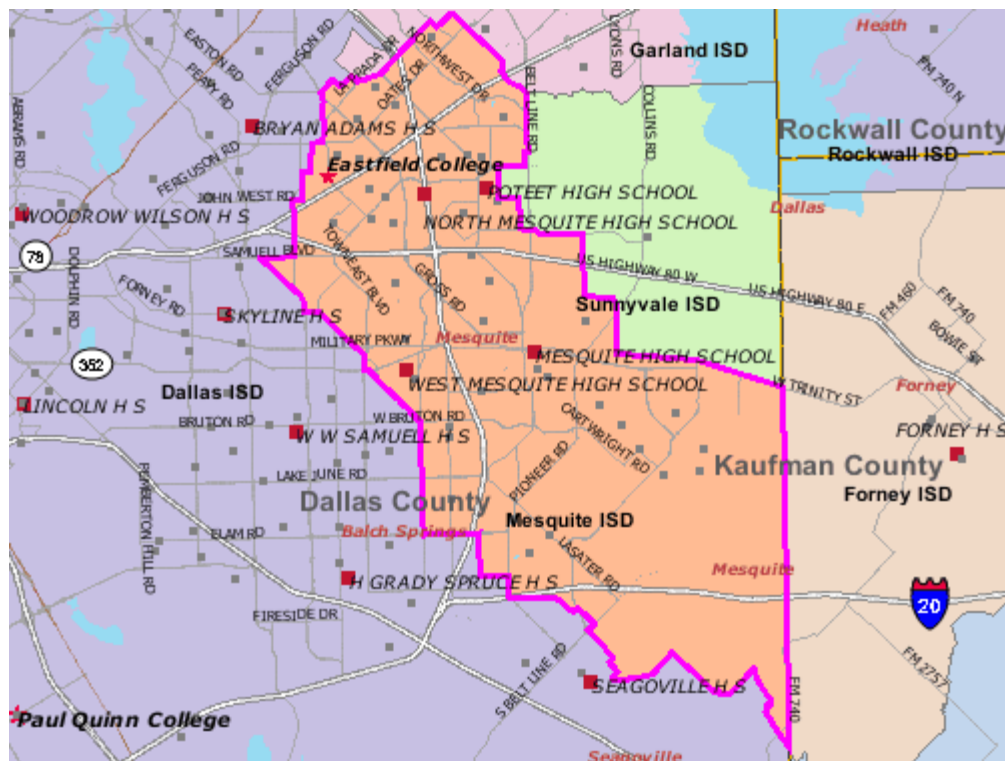
Source: Texas Department of Transportation

City of Mesquite

Mesquite's history begins with its establishment in 1873 and eventual incorporation in 1887. Mesquite, a Dallas suburb, grew in earnest over the last 40 years showing a 1960's population of 27,526 that climbed to over 124,523 in the 2000 Census.

Mesquite residents' educational needs are primarily met by the Mesquite Independent School District (MISD); however, Dallas Independent School District (DISD) and Forney Independent School District (Forney ISD) also service a small portion of the population. See Figure 2. MISD reported that 35,488 students attended one of their twenty-nine elementary, eight middle, and six high schools during 2006-2007.

Figure 2: Mesquite Independent School District Map



Source: Texas Education Agency, 2007.

The City of Mesquite and MISD filed an application for a Safe Routes to Schools (SR2S) project that involved constructing sidewalks, ADA ramps, retaining wall, hand railing and protective barrier and solar-powered pager controlled school zone flashers. The project impacted three schools: Mesquite High, Agnew Middle, and Black Elementary schools. See Figure 3. The project was valued at \$85,000; the required local match of \$17,000 was paid by the City of Mesquite and MISD.

City of Mesquite and MISD officials stated that safety problems stemmed from the Casa Terrace subdivision whose school aged children attend Mesquite High, Agnew Middle, and Black Elementary schools. Sierra Drive, a two-lane collector without shoulders or sidewalk on the south side, is the path that students take to get to school. Piecemeal residential development resulted in scattered sidewalks constructed along the north side of Sierra; in some places, the sidewalks do not connect. In these instances, children are forced to walk in the right-of-way or along the drainage ways. Figures 4 and 5 illustrate these issues.

Figure 3: Mesquite Schools



Source: Texas Education Agency, 2007

Figure 4: Students Walking from School



Source: City of Mesquite, 2007

In their SR2S application, the City of Mesquite stated that the area of greatest concern was at the unnamed creek that crosses Sierra Drive. Here, pedestrians must walk along the right-of-way and at the creek's edge. In a survey conducted November 2002, City officials noted that 49 children walking and seven children on bicycles crossed this area. Officials also noted that no vehicle/pedestrian incidents had occurred in the last three years (City of Mesquite, 2000).

Figure 5: Students Walking to School



Source: City of Mesquite, 2007

The City and MISD officials felt the improvements would create a safe, continuous, and barrier-free pedestrian path for students to get to Mesquite High, Agnew Middle, and Black Elementary schools. These officials also believed removing the pedestrians from the right-of-way would reduce the potential of vehicle-pedestrian serious/life threatening accidents.

Figure 6: Sidewalk and Curb Improvements at Sierra and Rancho



Source: City of Mesquite, 2007

Figure 7: Retention Wall and Handrails Installed at Regent and Rancho



Source: City of Mesquite, 2007

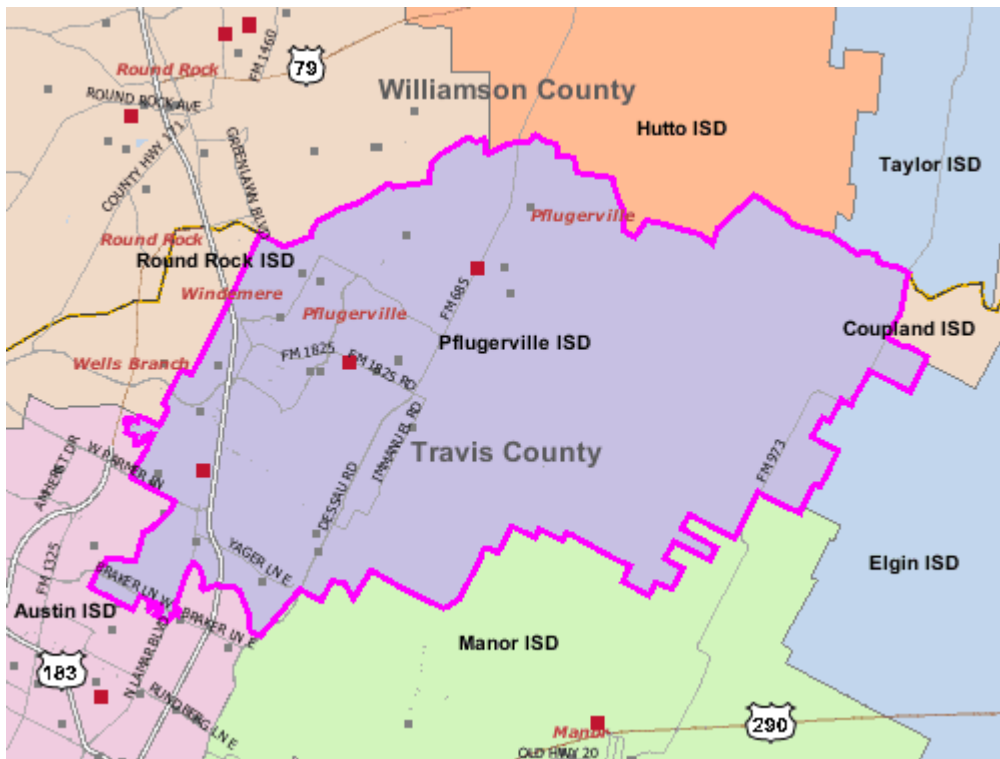
Figures 6 and 7 show ADA ramps added along Sierra Drive at Rancho Road and the retaining wall and handrails installed along the creek between Regent and Rancho Drive after Mesquite received the SR2S award. These improvements were all completed in 2003.

City of Pflugerville

Pflugerville is located just north of Austin adjacent to Round Rock, Texas. Although Pflugerville’s history began with the Henry Pfluger family around 1853, it took more than 100 years before the city was incorporated in 1965. Prior to 1980, the town’s population consistently remained below 700. However, past decades recorded marked growth. According to the 2000 Census, the city reached more than 16,335 people. The 2005 Census Bureau population estimates placed the town’s population at 27,531.

According to the City of Pflugerville’s history, residents established their first school in 1872. Figure 8 shows the children served by the Pflugerville Independent School District. Texas Education Agency reported that 19,734 students attended one of Pflugerville’s seventeen elementary, five middle, and four high/alternative schools during school year 2006-2007.

Figure 8: Pflugerville Independent School District Map



Source: Texas Education Agency, 2007

Partnering with the Pflugerville ISD, the City of Pflugerville submitted a Safe Routes to Schools (SR2S) project to construct sidewalks with ADA ramps along FM 1825/Pecan Street from Timmerman Elementary to Pflugerville High ending at Heatherwilde Boulevard. See Figure 9. This area is more accurately described as the 700 block to the

1600 block of West Pecan/FM 1825. The project was valued at \$151,158 with a state match of \$30,231.

Traveling east from IH-35, FM 1825 becomes Pecan Street. Along this path, the street narrows from a four lane arterial to a two lane arterial. With cars slowing to merge and the absence of sidewalks, students were frequently observed walking in the right-of-way. In fact, the City of Pflugerville’s SR2S application indicated that on “wet and cold days, children may be found

walking down the dryer and shorter route in the center turn lane” of FM 1825. Because FM 1825/Pecan Street slopes and has curves, it is difficult to see students traveling along the road. In addition the speed limit is 35 mph in designated school zones, but once outside of the school zone, the speed increases to 50 mph.

Timmerman Elementary is located on Pecan Street in what residents consider “Old Town Pflugerville”. This campus of approximately 500 students is described by Pflugerville Transportation officials as “active”. All students (100 percent) attending Timmerman lived within two miles of the school. Nonetheless, the City and school officials noted that in the absence of sidewalks, 342 students arrived by car and 142 arrived by bus to school. Only 11 students walked and six students biked to school. School officials also noted ingress and egress problems around the school.

According to the City’s SR2S application, Pflugerville High school’s student population reached 2,475. The high school is also located on Pecan Street (FM 1825) and shared similar problems as those found at Timmerman. City officials stated that it was common to see high school students walking their younger siblings to nearby Springhill Elementary School, which has sidewalks; however, when these students reached FM 1825, they were forced to walk in the right-of-way or in open sloped ditches.

Figure 9: Pflugerville Schools Map



Source: Texas Education Agency, 2007

Pflugerville Fact:

More than **66** percent of all students live within two miles of Pflugerville High and **100** percent of all students live within two miles of Timmerman and Pflugerville Middle Schools.

Source: Pflugerville SR2S application 2002.

Further evidence of the dangers along the ten blocks of Pecan Street included accident data. From 1999 to 2002, city and school officials reported 47 of the 102 collisions happened during school hours.

Figures 10 & 11: Views of Sidewalk from Timmerman to Pflugerville High



Photos are courtesy of Pflugerville Independent School District

Figures 12 & 13: Views of Sidewalk toward Pflugerville High



Photos are courtesy of Pflugerville Independent School District

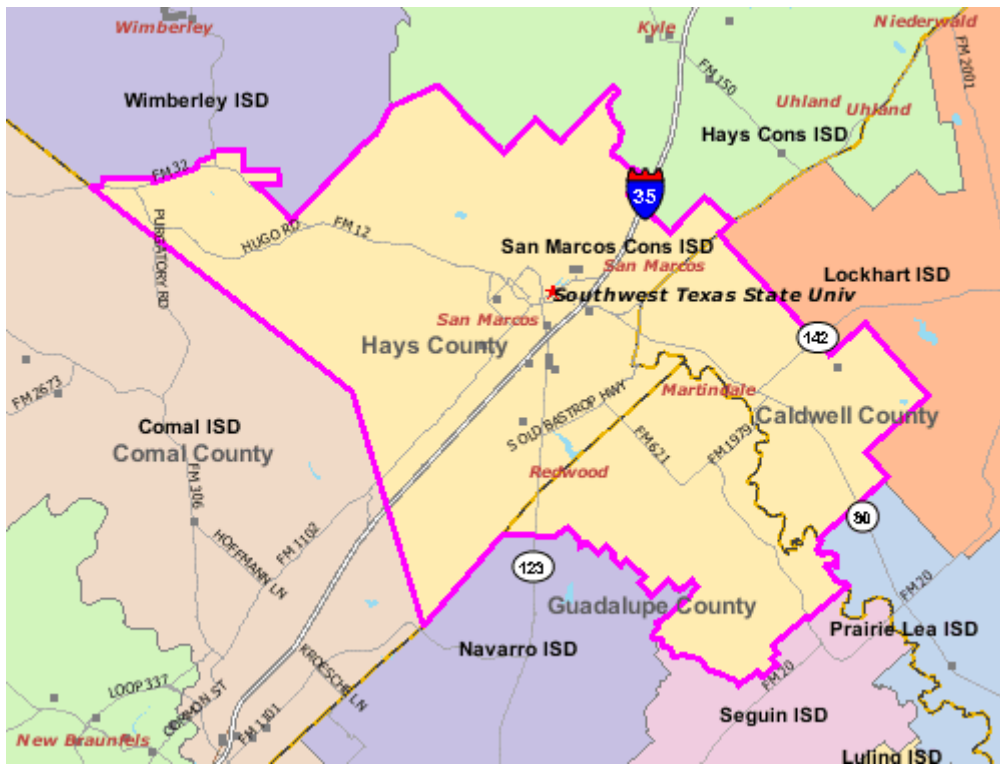
Figures 10-13 show the newly constructed sidewalk traveling west from Timmerman to Pflugerville High. School officials believe that by participating in the SR2S program and building the sidewalks, children will have a safer walk to school. City officials believe the improvements make Pflugerville a more “walkable” city. Finally, school officials will not spend funds transporting students who live within walking distance to school.

City of San Marcos

San Marcos, incorporated as a city in 1877, is located in Hays County between Austin and San Antonio along the I-35 corridor. In 2000, the Census recorded 34,733 residents; according to the 2005 Census Bureau Population Estimates, this number grew to 46,111.

The San Marcos Consolidated Independent School District (SMCISD) records indicated that their five elementary schools, two middle schools, and one high school educate 7,150 students inside and outside of the city limits. Figure 14 shows the school district's boundaries.

Figure 14: San Marcos Consolidated Independent School District Map

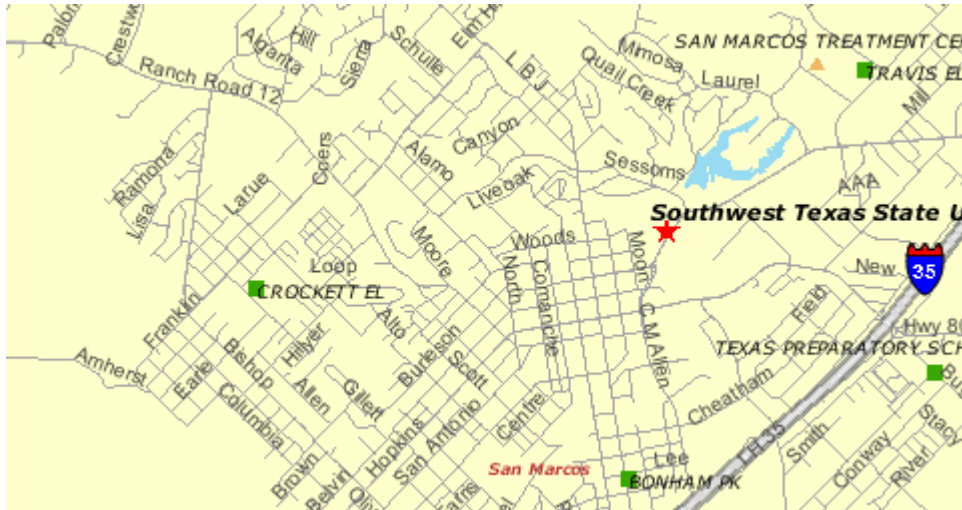


Source: Texas Education Agency, 2007

For the Safe Routes to Schools program, the City of San Marcos and the SMCISD submitted Crockett Elementary school which has an enrollment of 687 students. Forty five percent of the students live within two miles of the school. Mode to school data showed that approximately 20 students walk, one student bikes, 378 students take the bus, and 288 students' parents drive them to school. SMCISD noted several problems around Crockett Elementary school.

First, traffic congestion occurred around the school because of the number of parents driving their children to school. Next, two of the streets that border the school, Perkins and Clyde streets, have sidewalks that end in the middle of the block. Perkins Street

Figure 15: San Marcos schools



Source: Texas Education Agency, 2007

presents a further problem as children walk and bike in the right-of-way which also contains a blind hill. Figure 16 shows the street pattern proximate to Crockett. Finally, the district spends additional funds transporting children to school who live within two-miles of the school because their current route to school is hazardous.

Figure 16: Streets around Crockett Elementary



Source: Texas Education Agency, 2007

SMCISD and the City of San Marcos proposed constructing 1,000' of sidewalks which would extend the Perkins and Clyde street sidewalks and add ADA ramps at the southeast corner of Clyde and the southwest corner of Perkins. These improvements totaled \$18,300 which required the City to provide \$3,660 in local matching funds. The proposed Crockett Elementary project would save money as the engineered plans were previously designed.

Figure 17: Aerial View of Old Crockett



Source: San Marcos Consolidated Independent School District

Figure 18: Aerial View of Crockett Site



Source: San Marcos Consolidated Independent School District

Figure 19: Aerial View of New Crockett Site



Photo taken by Andre Gibson

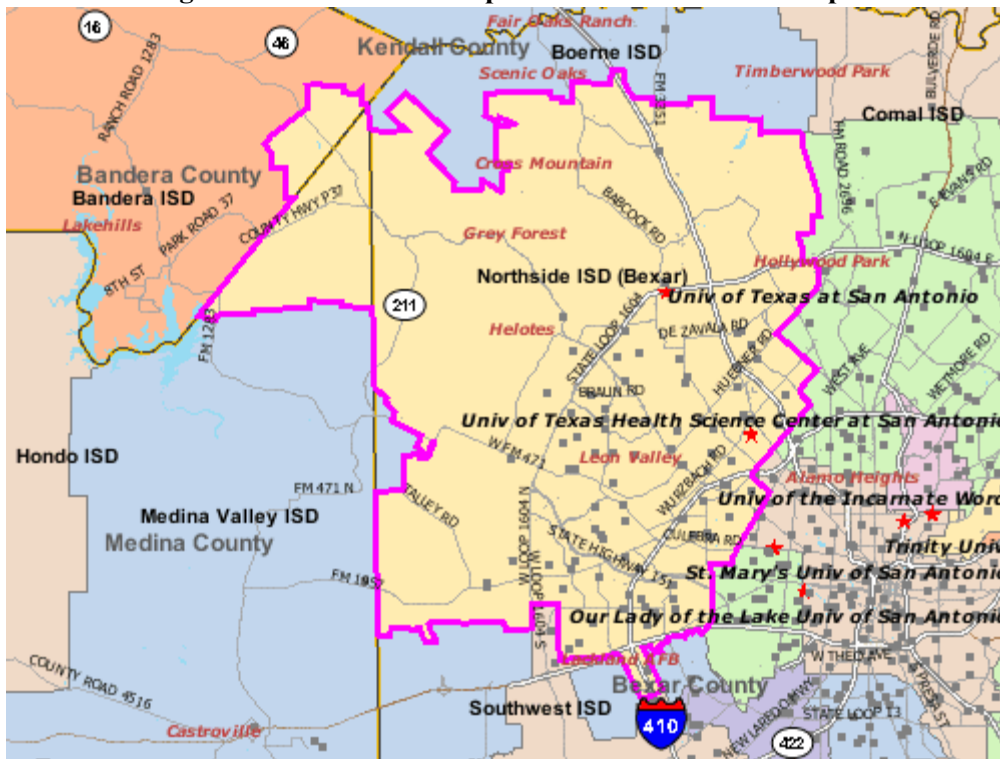
Once the sidewalk and ADA ramp improvements are made, SMCISD estimates that more students will walk to school, thereby promoting a safer and healthier environment. Furthermore, the district should save funds because they would no longer transport children living within the two-mile zone to school. Figures 17-19 show aerial views of Crockett Elementary before, during, and after construction. At the time of this publication, the sidewalks were not constructed. The district anticipates that sidewalk construction will occur in 2008.

City of San Antonio

San Antonio is one of the oldest cities in Texas. The Census Bureau ranks San Antonio as the seventh largest city in the United States. The 2005 Census Bureau Population Estimates placed the city's population at 1,256,509; this represented a 10 percent change from the 2000 population of 1,144,646.

San Antonio and Bexar County school aged children are served by 15 public school districts. Northside Independent School District (Northside ISD), located in northwest Bexar County, is one of the districts. According to TEA, Northside ISD enrolled 81,861 students in 2006-07 academic year.

Figure 20: Northside Independent School District Map

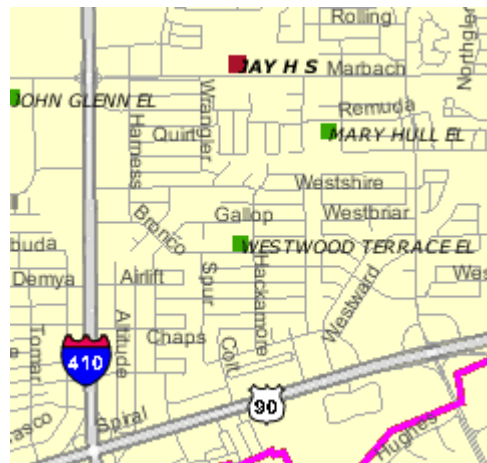
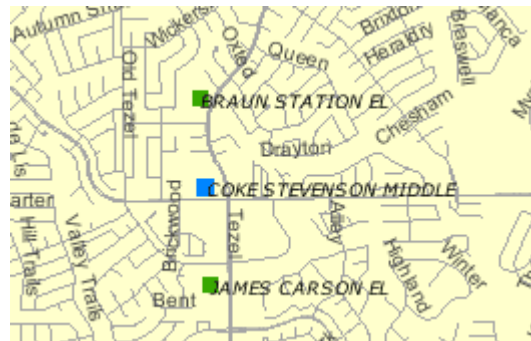


Source: Texas Education Agency, 2007

Northside ISD and the City of San Antonio submitted a \$551,488 project for funding, with a local match of \$116,400. This project would improve pedestrian and bicycle crossings around twenty schools: twelve elementary, five middle, and three high schools. (See Figures 21-23.) Initially, Northside ISD proposed the installation of crosswalks, flashing beacons, and signage. Ultimately, only flashing beacons were installed.

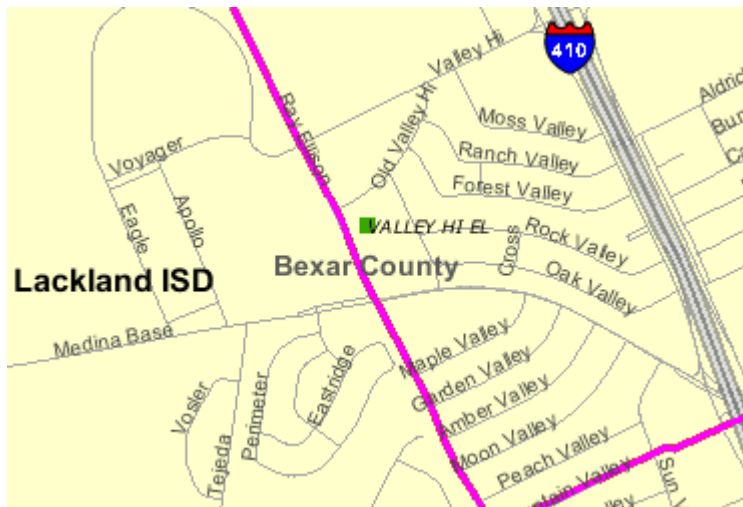
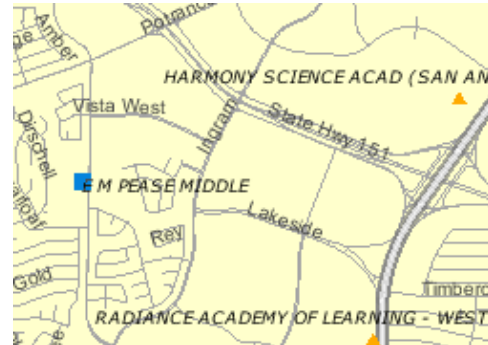
The district noted several impediments. First, children walked or rode their bicycles in the right-of-way and crossed at unmarked areas that had a high traffic. Next, near some schools, mainly high schools, there was heavy traffic traveling at high speeds. These schools did not have delineated school zones which slow the traffic. Finally, parents were driving students to school which increased congestion around the school.

Figure 21: Braun Station, Colonies North, Coon, Hull, Myers Elementary Schools; Hobby and Stevenson Middle Schools; and John Jay High School



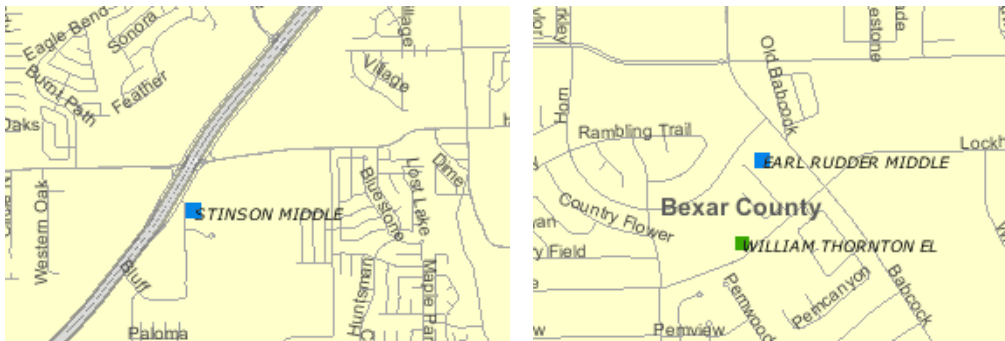
Source: Texas Education Agency, 2007

Figure 22: Colby, Locke Hill, Powell, Valley High, and Villarreal Elementary Schools; Pease Middle School; and Holmes High School



Source: Texas Education Agency, 2007

Figure 23: Thornton Elementary School; Stinson and Rudder Middle Schools



Source: Texas Education Agency, 2007

Annually, Northside ISD Transportation Department of Hazardous Transportation Committee conducted a Hazardous Conditions Evaluation to examine the safety of the routes children take to school and the need for crosswalks. The Hazardous Condition Evaluations were given to parents and citizens to gage their perception of safety. The Committee then looked at the following factors to determine if a crosswalk should be installed: volume of vehicular and pedestrian traffic, average vehicular speed, types of vehicles, geometric characteristics of the intersection, types of traffic controls present, proximity to school and safe school route and location of adjacent crosswalks (San Antonio, 2002). To determine if and where a traffic calming flashing beacon was needed, the Committee examined areas along arterial or collector streets having high traffic volumes, higher traffic speeds, unfavorable terrain or if it was a school immediately adjacent to a street (San Antonio, 2002).

As a part of their grant application, Northside ISD initiated a Safe Routes to Schools Survey and administered it to parents with children in grades three to five at 14 elementary schools. In total, 1,948 surveys were distributed and 921 surveys were returned to Northside ISD. See Table 4. Most students were driven or arrived by bus to school.

While only 12 percent of respondents walked to school, 56 percent of these students walked every day and 22 percent walked two to three days to school. Only three percent of respondents biked, 52 percent of these students biked every day, and 22 percent biked two to three days per week to school.

Parents did select non-traffic related reasons for not allowing their children to walk or bike to school. Non-

Table 4: Mode to School

Mode	Percent*
Walk	12
Bike	3
Driven	59
Carpool	3
Bus	44

Source: Parent Survey included in Northside ISD Safe Routes to School Application 2002.
*Multiple choices selected; therefore, total exceeds 100%.

traffic reasons included unfriendly people, unsightly trash, and unfriendly dogs; however, more parents identified traffic safety issues as their reason (San Antonio, 2002).

While the survey only polled parents of elementary school children, parents at the high schools were also concerned about safety. This was especially true after several high schools experienced major accidents and a fatality at John Jay and Holmes High Schools. Newspaper articles reported parents asking City Council to reconsider their school zone safety policy. In 2002, the Northside ISD also asked the City of San Antonio to consider amending its school zone standards (Torres, 2002).

Figure 24: Beacon on Tezel Road near Braun Station Elementary



Photo by George McEwen

Table 5: Northside Schools in SR2S Program

Type	Schools		
Elementary	Braun Station	Colby Glass	Powell
	Colonies North	Mary Hull	Thornton
	Coon	Locke Hill	Valley Hi
	Galm	Myers	Villarreal
Middle	Hobby	Rudder	Stinson
	Pease	Stevenson	
High	Clark	Holmes	John Jay

The City policy only requires school zone designations for elementary and middle schools. This designation means that a school zone sign is in place requiring the driver to reduce his speed. When warranted, flashing beacons are added to further remind the driver of the school zone.

Currently, the City of San Antonio and the San Antonio Metropolitan Planning Organization are examining school crossing zones to determine where flashing beacons could supplement the 20 mph reduced speed limits. City officials noted that several locations exhibited a special need for flashing beacons to supplement the existing speed limit signs. Nonetheless, the official policy remains without school zones near high schools. Schools residing on high speed roads are examined on a case by case basis.

Despite the differences between parents, school officials and the City of San Antonio, the final project produced flashing beacons, like the one shown in Figure 24. Table 5 lists the twenty schools that received beacons. Although it is not the City’s policy, special circumstances (i.e. number of accidents, road speed, etc.) determined that Clark, Holmes, and John Jay High Schools also received beacons.

NEW SR2S PROGRAM FUNDED BY SAFETEA-LU

On July 29, 2005, Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) was signed into law by President George W. Bush. SAFETEA-LU was created to improve safety, reduce traffic congestion, improve efficiency in freight movement, increase intermodal connectivity, and protect the environment. As explained by Federal Highway Administration (FHWA), SAFETEA-LU provides the following goals for the SR2S program:

- to enable and encourage children, including those with disabilities, to walk and bicycle to school;
- to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
- to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools

With the new federal Safe Routes to School (SR2S) program, there will be a significant increase in funds and institutional support to implement SR2S programs in states and communities across the country. As a result, a new chapter in the history of Safe Routes to School programs might soon be written as the benefits of communities and states establishing and advancing Safe Routes programs and issues are learned.

For this newly funded program, FHWA put forth the five “E’s” that are key components of a SR2S program that are direct or indirect outcomes.

- Engineering – Creating operational and physical improvements to the infrastructure surrounding schools that reduce speeds and potential conflicts with motor vehicle traffic, and establish safer and fully accessible crossings, walkways, trails, and bikeways.
- Education – Teaching children about the broad range of transportation choices, instructing them in important lifelong bicycling and walking safety skills, and launching driver safety campaigns in the vicinity of schools.
- Enforcement – Partnering with local law enforcement to ensure traffic laws are obeyed in the vicinity of schools (this includes enforcement of speeds, yielding to pedestrians in crossings, and proper walking and bicycling behaviors), and initiating community enforcement such as crossing guard programs.
- Encouragement – Using events and activities to promote walking and bicycling.
- Evaluation – Monitoring and documenting outcomes and trends through the collection of data, including the collection of data before and after the intervention(s).

While SAFTEA-LU provided \$286.4 billion for federal transportation, roughly \$612 million for SR2S was designated. These monies are for Fiscal Year (FY) 2005 to 2009 (SAFETEA-LU: A Guide to Transit-related Provisions, Retrieved January 31, 2007). The following table explains how the SR2S money will be distributed.

Table 6: SR2S Funding

Year	2005	2006	2007	2008	2009
Authorization	\$54 M	\$100 M	\$125 M	\$150 M	\$183 M

The Federal Highway Administration (FHWA) developed regulations and guidelines for SR2S program. FHWA distributes funds to states based on the number of primary and secondary school students in the state, with no state receiving less than \$1 million per year. SR2S funds can be used for both infrastructure projects and non-infrastructure activities.

Successful SR2S programs include policy development, planning, and implementation of strategies among other things. Some of the strategies may be improvements to streets and sidewalks, education and encouragement of children and parents, and increased enforcement of traffic laws. Programs can include the following:

- improve the ability to walk and bike in regards to the safety of the streets around schools.
- create local programs to improve sidewalk conditions near schools.
- use of traffic calming devices to slow traffic and give pedestrians priority.
- develop programs that educate children on walking and biking safely, and challenge them to walk or bike often.
- start a “walking school buses” in which one or two parents or volunteers escort a group of children on the walk to school.
- increase traffic enforcement around schools.
- design school construction that includes renovation and improvement of existing schools, and locating new schools to reduce walking hazards and avoid major traffic threats.
- facilitate cooperation between school officials, law enforcement officials, and transportation planners.

According to SAFETEA-LU Sections 1101(a)(17) and 1404, each state must hire a full time SR2S Coordinator to serve as a central point of contact for the state and establish a process for receiving applications and determining which projects will receive funding. Although some states already have SR2S programs, the process of merging these existing state programs with federal guidance and requirements may delay their activities.

Nonetheless, the Texas Department of Transportation (TxDOT) worked diligently, over the past two years, to implement Texas’ SR2S program and the state’s \$40 million 2005-

2009 SR2S allocation. While this new SR2S program provides more funds, there are also some notable program changes. They are listed below:

- Approved projects will be federally funded at 100 percent; however, the applicants must expend the money and then seek reimbursement from TxDOT.
- Eligible applicants include state, local and regional agencies, non profits and public schools.
- Primary beneficiaries must be K-8 grade students.
- From 10 percent to 30 percent of the state's allocation is available for non-infrastructure-related activities such as education, encouragement, and enforcement.
- Infrastructure projects must be within two miles of a school and on public property or private land with legal public-access easements.

On September 27, 2007, the Texas Transportation Commission approved approximately \$24.7 million in projects for the Safe Routes to Schools program. Statewide, 244 projects in more than 66 communities were approved (Texas Department of Transportation, retrieved October 31, 2007). Safe Routes projects include sidewalks, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, bicycling parking facilities, and more. Non-infrastructure projects, such as education and awareness programs, will also be funded as part of the program. A total of \$22,187,392 will be spent towards 57 infrastructure projects while only \$2,481,561 will be spent on 187 non-infrastructure projects (Texas Department of Transportation, retrieved October 31, 2007).

School districts like the San Angelo ISD in Tom Green County are benefiting from a \$749,999 infrastructure improvement project, which includes sidewalk and crosswalk improvements as well as electronic school zone signs. Other high-dollar recipients include Stanton ISD in Martin County (\$749,897); Austin Elementary and Crockett Middle Schools in Reeves County (\$747,084); and Starkey Elementary, BT Wilson and Peterson Middle, and Tally Elementary Schools in Kerr Counties (each at \$700,000).

Most non-infrastructure projects were assigned \$10,000 to develop and plan a SR2S program or to improve public information and education. Only three projects received more than \$10,000: The City of Austin Health and Human Services in Travis County received \$567,132 to spend on public information and education and enforcement, Carrizo Spring CISD in Dimmit County received \$76,401 and Abernathy ISD in Hale/Lubbock County received \$10,800 to improve public information and education. However, in El Paso County, 116 elementary schools were awarded \$10,000 each (a combined total of \$116,000) for non infrastructure projects. On the other hand, two projects were given less than \$10,000: Marion ISD, (including Krueger Elementary, Marion Middle School, and Marion High School) was awarded \$7,400 and Donna ISD, (including Guzman Elementary, Salazar Elementary, Veterans Middle, Caceres Elementary, Rivas Elementary, Price Elementary, Le Noir Elementary, and Solis Middle), was awarded \$9,828 (Texas Department of Transportation, retrieved October 31, 2007).

RESEARCH SUMMARY

Over the past three decades, the number of children that walk to school has steady declined; however, instances of childhood obesity has steady increased. Researchers found that many factors influenced why children did not walk to school. In fact, surveys from parents in the Northside School District indicated that their major concerns involved unsafe or hazardous walking conditions and chose to drive their students to school.

The above profiles demonstrated that when children walked to school, they were frequently forced to walk in the right-of-way of traffic because a sidewalk was not available. After reviewing Texas Department of Transportation's (TxDOT's) Safe Routes to Schools (SR2S) program, the following findings emerged.

Hazardous Conditions

The first finding involves the designation of hazardous conditions near schools. The Texas Education Code required all districts to transport children who live within two miles of the school if hazardous conditions exist. Each school district's board was responsible for determining what they define as a hazardous condition. The four school districts adopted policies but also absorbed additional costs. For example, the San Marcos Consolidated Independent School District (SMCISD), in accordance with the State, transported children to school that lived within two miles of Crockett Elementary school. While the State provides that with permission, districts could receive an additional amount of up to 10 percent of its regular transportation allotment, information from SMCISD's SR2S application indicated that district also used school district funds to safely get children to school. If hazards are eliminated, SMCISD could use those funds on education related instead of transportation related expenses.

Another related obstacle involved limited TxDOT resources and "allowable" projects. The four observed districts addressed their safety issues, worked with their local governmental public works departments and applied for TxDOT's SR2S program to alleviate their hazardous conditions. Nonetheless, countless school districts faced unaddressed safety problems because TxDOT's SR2S funding was limited to 4.2 million dollars for infrastructure projects. Health related projects were not eligible. While the physical improvements are important, educational pieces and programs promoting good health and the benefits of walking are equally valuable tools.

Designation of School Zones

The second finding highlights problems with the designation of school zones. While parents, school officials and administrators recognized safety and hazardous conditions around schools, the local government's policy would not allow for a correction.

The City of San Antonio, like the other major cities, only designated school zones near elementary and middle schools, because younger and smaller children lacked the cognitive skills to negotiate traffic. However, as noted, this decision led to major accidents and even fatalities for high school children. Although it would be costly to

change the current policy, closer consideration should be given to the designation of school zones and the installation of flashing beacons or protective devices to safeguard high school aged children from traffic. TxDOT's 2002 SR2S program was able to bridge the gap and provide the protection for these children. However, new program guidelines will only address issues at schools K-8. Nonetheless, accidents continue to occur near high schools. Federal SR2S and TxDOT officials may want to reevaluate this policy and consider funding safety improvements around high schools.

SR2S 2005-2009 Program

The final finding involves program guideline changes for TxDOT's SR2S program. The federal SR2S program officially began with a \$612 million allocation from Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Under the auspices of the Federal Highway Administration (FHWA), each state was provided a portion of funds to administer according to federal guidelines. In turn, these federal guidelines were adopted and implemented to improve TxDOT's SR2S program.

The first notable improvement eliminates the matching funds requirements. At times, identifying matching funds may be difficult for smaller cities/counties to do. This change may encourage more schools, non profits, and smaller cities to participate in the program. Another change makes non-infrastructure and educational activities eligible for funding; this allows for creative opportunities to improve the overall health of school aged children.

While most changes were beneficial, some program guideline changes may be problematic. Previously, city or county governments submitted the SR2S application on behalf of the school district. The new procedure allows school districts to apply directly to TxDOT for funding, instead of being a third party recipient. This may curtail city/school district partnership opportunities. Finally, new program guidelines leave older students vulnerable. Current SR2S program participation is limited to grades K-8.

Conclusion

After considering the aforementioned study findings and program guideline changes, this study concludes that the new SR2S program will allow TxDOT officials to determine how successful these changes will be in increasing the types of activities and participants involved in the SR2S program. Ultimately, TxDOT's SR2S program strives to improve the overall health of children while providing a safer route to school.

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