

Research Report
Agreement T4118, Task 25
CTR Strategies

**TRANSPORTATION DEMAND STRATEGIES
FOR SCHOOLS
PHASE 1**

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Prepared for
Washington State Transportation Commission
Department of Transportation
and in cooperation with
U.S. Department of Transportation
Federal Highway Administration

November 2007

1. REPORT NO. WA-RD 685.1	2. GOVERNMENT ACCESSION NO.	3. RECIPIENT'S CATALOG NO.	
4. TITLE AND SUBTITLE TRANSPORTATION DEMAND STRATEGIES FOR SCHOOLS, PHASE I		5. REPORT DATE November 2007	
		6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S) Daniel Carlson, Malia Langworthy, Jana Wright, Deric Gruen		8. PERFORMING ORGANIZATION REPORT NO.	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Washington State Transportation Center (TRAC) University of Washington, Box 354802 University District Building; 1107 NE 45th Street, Suite 535 Seattle, Washington 98105-4631		10. WORK UNIT NO.	
		11. CONTRACT OR GRANT NO. Agreement T4118, Task 25	
12. SPONSORING AGENCY NAME AND ADDRESS Research Office Washington State Department of Transportation Transportation Building, MS 47372 Olympia, Washington 98504-7372 Kathy Lindquist, Project Manager, 360-705-7976		13. TYPE OF REPORT AND PERIOD COVERED Research Report	
		14. SPONSORING AGENCY CODE	
15. SUPPLEMENTARY NOTES This study was conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration.			
16. ABSTRACT Considerable portions (as much as 25% by some estimates) of commute time auto trips are taking students to school. This study seeks to learn what strategies can reduce and are reducing auto congestion around schools. Phase 1 of the study includes a literature review summarizing the state of knowledge about the subject and helping to identify models and strategies. These include ride sharing clearing houses, supervised walking to school programs, carpooling, safe routes to schools programs, bicycling and mobility education, school siting policies and requirements, and the use of yellow school buses and public transit. These models guided the search for potential programs of interest in Washington state to examine and learn from in Phase 2 of the study. These programs of interest include safe routes to schools programs in urban and small city elementary schools, the use of fare-free transit, introduction of mobility education curriculum in high schools, a mandatory universal pass program at a university, a ride sharing website, and inclusion of a school in a growth and transportation efficiency center under the state's Commute Trip Reduction law.			
17. KEY WORDS Commute Trip Reduction, CTR, Safe Routes to Schools, Transportation Demand Management, TDM		18. DISTRIBUTION STATEMENT No restrictions. This document is available to the public through the National Technical Information Service, Springfield, VA 22616	
19. SECURITY CLASSIF. (of this report) None	20. SECURITY CLASSIF. (of this page) None	21. NO. OF PAGES	22. PRICE

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Executive Summary

Background and Purpose

ESHB 1094, the 2007-2009 transportation budget adopted by the Washington State Legislature, includes a proviso directing the Washington State Department of Transportation to study and develop pilot programs on commute trip reduction (CTR) strategies for K-12 and college and university students. The purpose of this report is to define CTR/transportation demand management (TDM) strategies, summarize the body of knowledge in the field, identify policies and programs that have been effective at reducing and removing traffic congestion in front of schools, and identify programs of interest for further study in Washington State. These programs of interest represent a variety of approaches to reducing auto congestion around schools in urban, suburban, and rural areas that serve students at the elementary, secondary, and post-secondary levels.

Phase 1 Study Approach and Findings

Phase 1 of the study pursued a three-step approach: reviewing the literature, extracting transportation demand strategy models from the body of knowledge, and identifying existing or planned programs in Washington State that implement these proven models.

Fewer school age children walk or bike to school today than in the past. In 1969 approximately 50 percent of students walked or biked to school. By 2001 less than 16 percent of students walked or biked. There are fewer but larger and more consolidated schools today, making for longer trips to school. The built environment and road networks favor auto travel, and school siting requirements often lead to locations far from transit service. Parents are influenced to drive their children by many factors, including distance from school, unsafe traffic/travel environment, fear of crime, poor weather conditions, and even the weight of student backpacks.

At the elementary school level, Safe Routes to Schools programs provide proven alternatives to and incentives for single occupancy vehicle (SOV) commuting. Safe

Routes to Schools are comprehensive programs to create physical infrastructure for walking and biking, as well as educational and involvement programs, including walking school buses, traditional yellow school buses, ride-matching and car pooling services, and changes to school siting requirements. At the secondary school level, increasing student education about mobility options, providing free transit passes, and charging for parking and promoting carpooling offer options. At the post-secondary level, college student fees, universal pass transit systems, guaranteed ride home, variable parking rates, and contracting with public and nonprofit service providers have proved effective at reducing auto-dependency.

Programs of Interest

Findings from the literature review and consultation with the study advisory group guided the search for programs of interest in Washington State. Phase 2 of the study will examine these programs in more detail to learn about their effectiveness and replicability. The programs identified include schools in urban, rural, and suburban areas and at all school levels. They incorporate the assortment of models and institutional structures uncovered in the literature review, specifically, Safe Routes to Schools programs, the use of fare-free transit, mobility education curriculum, a mandatory universal pass program with a student coordinator, a ride sharing website, and inclusion of a school in a growth and transportation efficiency center under the state's Commute Trip Reduction law. Programs of interest include the following:

Elementary Schools

- GO! Project, Safe Routes to Schools, Seattle
- Mt. Vernon Safe Routes to Schools/Walking School Bus
- Trips to School, Bellevue
- Growth and Transportation Efficiency Center (GTEC) Inclusion, Thurston County
- School Share, Web-based car pool matching, statewide

High School and Middle Schools

- Mobility Education, Puget Sound region

- Way To Go, comprehensive incentive and transit package, Seattle

Colleges and Universities

- Central Transit: Non-profit transit service, Ellensburg
- Eastern Washington University's CTR program, Cheney
- Viking Xpress: Western Washington University's new universal pass program

All School Levels

- Fare Free Transit, Island County
- State level policy issues addressing school siting, yellow school bus utilization, and school parking

Background and Study Purpose

ESHB 1094, the 2007-2009 transportation budget adopted by the Washington State Legislature, contains the following proviso as part of the appropriation for the Washington State Department of Transportation's (WSDOT) Public Transportation Division:

“\$200,000 of the multimodal transportation account—state appropriation is provided solely for the department to study and then develop pilot programs aimed at addressing commute trip reduction strategies for K-12 students and for college and university students. The department shall submit to the legislature by January 1, 2009, a summary of the program results and recommendations for future student commute trip reduction strategies. The pilot programs are described as follows:

- (a) The department shall consider approaches, including mobility education, to reducing and removing traffic congestion in front of schools by changing travel behavior for elementary, middle, and high school students and their parents; and
- b) The department shall design a program that includes student employment options as part of the pilot program applicable to college and university students.”

This study is exploring ways to “reduce and remove traffic congestion in front of schools,” as directed in the above budget proviso.

A variety of transportation demand management (TDM) strategies, including walking, biking, carpooling, using public transit, vanpooling, working from home, and compressed work hours may be used to reduce the number of people in single occupancy vehicles (SOV) on the road. Additional TDM strategies include infrastructure improvements or traffic enforcement enhancements that promote walking and biking, parking pricing structures that discourage driving, and programs that educate and encourage people to use alternative modes of transport.

The Commute Trip Reduction (CTR) program is the result of a Washington state law, passed in 1991, that requires employers with over 100 employees to implement a variety of TDM strategies to reach SOV usage reduction. The policy intent of the CTR program is to reduce traffic congestion, air pollution, and petroleum consumption through

programs that decrease the number of commute trips made by people driving alone. Targets for employers may vary on the basis of local and regional goals. The only requirement is that they at least meet the state minimum target, which is a 10 percent reduction from the jurisdiction's base year measurement in the proportion of single occupancy vehicle (SOV) trips by CTR commuters by 2011, and a 13 percent reduction from the jurisdiction's base year measurement in commute trip vehicle miles traveled per CTR commuter by 2011. Under current law, schools and other institutions are exempted from these requirements. WSDOT administers another program, Safe Routes to Schools, that funds road improvements, sidewalks, and bikeways around schools, thereby providing alternatives to SOV usage and encouraging Kindergarten through 8th-grade students to walk and bike to school..

What is the relationship between CTR and TDM? The CTR program is the administrative framework through which the state requires employers to implement a suite of TDM strategies to achieve a mandated goal. TDM is the general term for strategies that result in more efficient use of transportation resources and reduced SOV usage¹.

This study examines a broad range of TDM strategies that have been or could be implemented in and around schools, with particular attention to those that have shown success in reducing SOV usage at K-12 schools and post-secondary institutions. The intent is to identify several approaches that could be piloted and monitored during 2008. The results of these piloted programs will be contained in a report to the legislature that suggests the promise of various TDM approaches. The report will also address options for implementing and administering commute trip reduction strategies through the existing CTR law or other policy and administrative frameworks that appropriately address the school sector.²

¹ Victoria Transport Policy Institute website, www.vtpi.org; Federal Highway Administration, <http://ops.fhwa.dot.gov/tdm/index.htm>; North Carolina Department of Transportation, www.ncdot.org/Transit/transitnet/OperationsAndPlanning/TDM.html

² In its 2005 Report The CTR Task Force found that the administrative framework of the current CTR program is *not* likely to work for schools because of the unique funding situation and limited staff resources at schools. Schools do not have the resources to set up, implement, and maintain the TDM strategies necessary to reach the CTR program targets as do other employers.

Transportation Demand Strategies for Schools Literature Review

Methodology

In preparing for this literature review the research team initially searched the University of Washington (UW) academic databases and Google Scholar, as well as the resources sections of the Safe Routes to School website and Active Living Network website. For the searches, we used the following combinations of keywords most frequently:

“TDM and schools”

“Safe Routes to School”

“walking school bus”

“Donald Shoup parking tdm”

“u pass”

“k-12 u pass”

“reducing traffic schools”

“reducing traffic congestion schools”

“HB 2011” “SHB 1588”

“fear of crime walking to school”

“governor sanford school acreage”

“vanpool school”

The researchers scanned the abstracts of articles that came up in the search process and elected to read those that were relevant and provided new information. After finding a number of useful articles through the various search engines described above, we reviewed bibliographies for salient articles and case studies. To gain a broad understanding of the topic, we tried to find a number of articles in each distinct category of research. After reading the initial selection of articles, we determined the areas in which we needed additional information and continued to search for more specific literature. In total, the researchers read 47 articles, policy papers, or case studies.

To understand the Washington state laws relevant to this project, the research team first went to the administering agency's website (WSDOT for the CTR program; Office of Superintendent of Public Instruction (OSPI) for school facility regulations), which usually directed users to the relevant Revised Code of Washington (RCW) or Washington Administrative Code (WAC) numbers. We then read the salient portions of the laws. If we were unable to find the specific details of the legislation that we were looking for, we called the agency, using phone numbers provided on the agency website. These people generally provided us with great background, which would have been difficult and time consuming to uncover on our own. They also referred us to other people, agencies, and websites to further the research.

Although there is currently a lot of activity around the topic of alternative forms of transportation to school with the recent passage of the federal Safe Routes to Schools legislation, not much empirical research has been done on commute reduction around schools. Because the topic of TDM at K-12 schools encompasses so many disciplines, we could not cite all the related sources in all the disciplines. We tried to focus on studies that approached TDM at schools from a multidisciplinary perspective and hope to have included almost all of the current research on the topic. The literature cited in this review addresses the five questions that guided our research:

- How is the current CTR legislation structured and how does it apply to schools?
- What are school siting requirements in Washington, including acreage, square footage, and parking, that might have an effect on transportation mode choice to and from schools?
- What are the laws regarding teen drivers and carpooling that could reduce carpooling options?
- What are the factors that affect transportation choices to and from schools?
- What are some examples that reduce SOV usage to and from school?

How Is the Current CTR Legislation Structured and How Does It Apply to Schools?

The Washington State Legislature passed the Commute Trip Reduction (CTR) law in 1991. The CTR program uses partnerships among employers, local jurisdictions,

planning organizations, transit systems, and the state to encourage employees to ride the bus, vanpool, carpool, walk, bike, work from home, or compress their work week. Major goals for the CTR program are to

- improve transportation system efficiency
- conserve energy
- improve air quality.

In 2006, the Legislature adopted ESSB 6566, which includes changes to the CTR law to make the program more effective, efficient, and targeted. The CTR law described in this literature review is the modified program, and the sources used include WAC 468-63, the WSDOT CTR website (www.wsdot.wa.gov/tdm/ctr) and a November 2006 WSDOT brochure titled, “Commuter Trip Reduction Program: Implementing the CTR Efficiency Act.”

The CTR program requires employers with 100 or more full-time employees who begin their workday between 6:00 AM and 9:00 AM on weekdays for 12 continuous months to offer incentives to reduce SOV driving. Commuter programs may offer benefits such as subsidies for transit fares, flexible work schedules, telework opportunities, vanpools and more.

The CTR program applies to urban growth areas with the most congested state highways. This is defined in WAC 468-63-020 as an area “whose boundaries contain a state highway segment exceeding the one hundred person hours of delay threshold calculated by the department of transportation, and any contiguous urban growth areas.” An urban growth area with a population over 70,000 that adopted a CTR ordinance before 2000 is also eligible. See Figure 1 for a map of affected jurisdictions. Local and regional governments in affected urban growth areas must develop a CTR plan that is appropriate for their jurisdiction, adopt a CTR ordinance, and support employers in implementing CTR. The local CTR plan must establish goals that meet or exceed the minimum program targets established by the state, which include 1) a 10 percent reduction from the jurisdiction’s base year measurement in the proportion of SOV trips by CTR commuters by 2011; and 2) a 13 percent reduction from the jurisdiction’s base year measurement in commute trip vehicle miles traveled per CTR commuter by 2011.

The CTR plan must be approved by the state to receive funding, and WSDOT provides technical assistance to jurisdictions and employers to help implement the program. However, employers must finance their own CTR program offerings. For FY 2005-2007 the state had a budget of \$5.5 million for the CTR program. Approved counties and local jurisdictions will receive \$3.98 million to support their CTR programs. The remaining funds cover tracking, technical assistance, public awareness and policy support. The state CTR budget is leveraged by local government and employer contributions. Every two years, the state will measure the progress of each jurisdiction and region toward its established targets. A 16-member board reviews and approves local and regional plans, develops the program funding allocations and the state plan, and provides general policy guidance for the program.

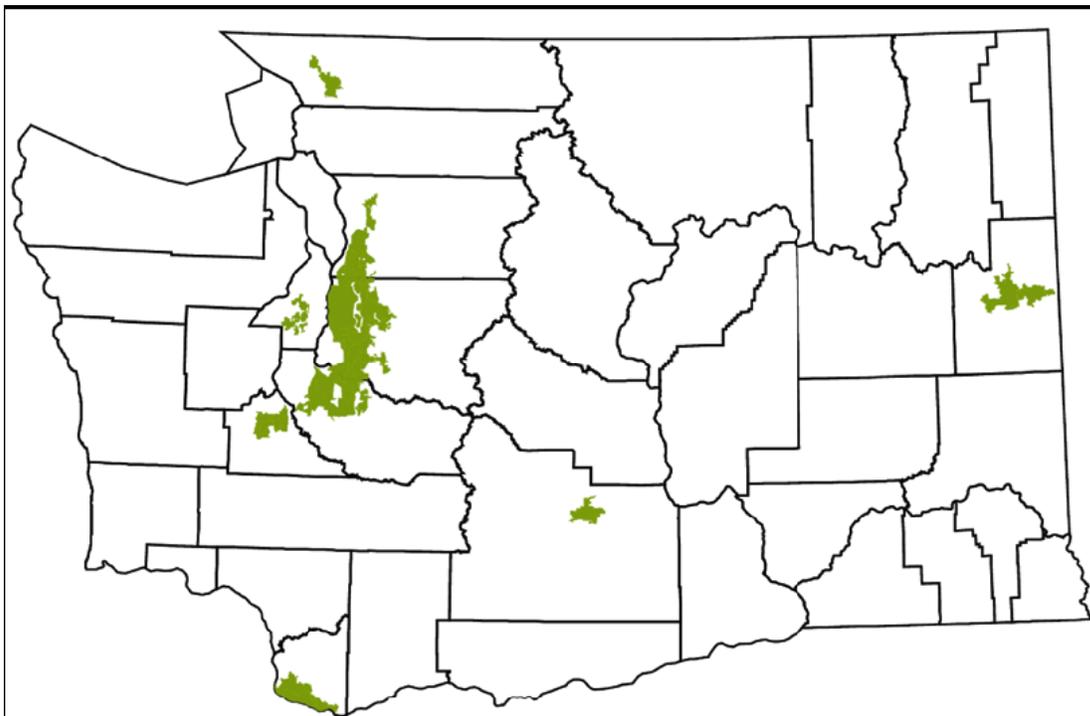


Figure 1: Urban Growth Areas in the CTR Program (preliminary designation)

Source: WSDOT Commute Trip Reduction Program: Implementing the CTR Efficiency Act Brochure, November 2006.

The updated CTR law gives jurisdictions the option to establish Growth and Transportation Efficiency Centers (GTEC), where they may implement customized trip

reduction programs and transportation-efficient land-use policies. This pilot program requires participating local governments to establish goals for reducing drive-alone trips and vehicle miles traveled that are more aggressive than those of the base CTR program. Local governments must provide a plan containing the goals, strategies, financial partnerships, and implementation structure. The state will provide funding and technical support to a certified GTEC on the basis of available funding. Because the program is flexible and can be customized to the needs of the local community, every GTEC will look different. The GTEC program is district-based, rather than employer-based. Most of the GTECs will focus on smaller employers in high-density areas that are not affected by the base CTR program.

Table 1 lists the key elements of the CTR law.

Table 1. Key Elements of the CTR Law

Where	Urban growth areas
Participation	Congested highway corridors
Who Participates	Major employers (over 100 employees) in urban growth areas required to participate; in voluntary centers, more employees and residents may participate
Who Oversees Program	16-member CTR Board establishes policy, provides guidance, and allocates funding
Performance Goals	Employer goals may vary based on local and regional goals beyond the state minimum target, which is as follows: <ul style="list-style-type: none"> • 10% reduction from the jurisdiction’s base year measurement in the proportion of SOV trips by CTR commuters by 2011 • 13% reduction from the jurisdiction’s base year measurement in commute trip vehicle miles traveled per CTR commuter by 2011 If employers don’t meet goals but can show a good faith effort, they are granted an extension.
Planning Requirements	Coordination with transportation and growth planning required

Source: WSDOT Brochure. “Commute Trip Reduction Program: Implementing the CTR Efficiency Act.” November 2006.

As it stands, the CTR law does not apply to schools because most schools do not meet the threshold for 100 employees who work 12 continuous months. However, several community colleges and universities are participating in the program because of their relatively larger number of year-round faculty and staff. The recent inclusion of GTEC

into the law gives jurisdictions more flexibility in creating a CTR program, and schools that do not meet the employee threshold could possibly be included if they fall within a GTEC. The 2005 CTR Task Force Report addressed the issue of schools and suggested that it would be difficult to export the current CTR model to schools, given their current funding and staff resources. The Task Force recommended that TDM strategies for schools be studied, a recommendation incorporated into ESHB 1094, which funds a study of which this literature review is a part.

HB 2011, proposed, but not passed, in the 2007 legislative session, would have required every public higher education institution in the state with more than 100 students to retain one full-time employee to administer a CTR program that would extend to its students. The law would have allocated \$35,000 in state funds to each institution.

What Are School Siting Requirements in Washington That Might Have an Effect on Transportation Mode Choice to and from Schools?

Square Footage Guidelines

The State of Washington has guidelines, rather than requirements, for square footage of schools, and there is no minimum square footage requirement. The square footage guidelines are tied to state funding for new school construction or renovation. The state provides matching funds to the school district for new construction or renovation per square foot up to the levels, listed in Table 2, specified in WAC 392-343-035:

Table 2. Square Footage Guidelines for Washington State Schools

Grade or Area	Maximum matchable area per student prior to June 30, 2006	Maximum matchable area per student from July 1, 2006
K-6	80 sq. ft.	90 sq. ft.
7-8	110 sq. ft.	117 sq. ft.
9-12	120 sq. ft.	130 sq. ft.
Classrooms for students with disabilities	140 sq. ft.	144 sq. ft.

According to WAC 392-343-040, the square footage analysis must be calculated in accordance with the American Institute of Architects, Document D101, *The Architectural Area and Volume of Buildings*, latest edition.

According to Gary Miller, the Office of Public Instruction’s School Facilities and Organization Eastern Washington Regional Coordinator, the legislature may increase the maximum requirement again in a few years. The reason for this increase would be to accommodate large schools in Eastern Washington with declining student populations. Many of these schools have more than 90 square feet per student but are only eligible to receive state funding to renovate 90 square feet per student. This leaves the school district to fund the remodeling of the remaining square footage or to leave it unfinished.

Acreage Guidelines

Washington state guidelines for school acreage are listed in Table 3.

Table 3. Acreage Guidelines for Washington State Schools

Grades	Acreage Guidelines
K-6	Five acres plus one acre for every 100 students
7-12	Ten acres plus one acre for every 100 students

For example, if an elementary school has 500 hundred students, the recommended acreage is 10. According to the a 2002 Washington Trust for Historic Preservation paper by Mary Jane Honegger, many school districts do not realize that these are only recommendations and, instead, treat them as requirements. According to a 2007 policy brief developed by the National Governor’s Association, many states adopted the Council of Educational Facility Planners International (CEFPI) guidelines for school construction, which required specific acreage for schools. The Washington state guidelines were originally based on CEFPI recommendations but are now actually much smaller than those guidelines, which were 10 acres for elementary schools, 20 acres for middle schools and 30 acres for high schools plus 1 acre for every hundred students across all grade levels. According to the National Governor’s Association policy brief, to find large enough parcels of land to accommodate the acreage requirements, school districts often resort to building new schools on farmland or green space on the outskirts of the

community. Being situated farther from student residences has had the consequence of reducing the opportunity for students to walk or bike to school.

The current trend in school facilities acreage requirements is moving away from stringent acreage requirements toward more flexibility for districts to size schools appropriately for each situation. The most recent CEFPI guidelines have eliminated the specific acreage requirements. According to Miller, the Washington law regarding acreage has recently been amended to be less binding. Several years ago, Washington school districts were required to apply for a waiver if they did not meet the acreage requirement, but the amended law now just charges school districts to demonstrate due diligence in ensuring that the size of the school is appropriate for the expected enrollment, use and, environment (WAC 392-342-020).

Enrollment Requirements

There are no state or federal minimum enrollment requirements for schools. Enrollment is determined by the school districts, and various educational theories are used to plan for school size.

Parking Requirements

According to Miller, there is no statewide requirement for parking. Local government planning departments have their own school parking standards. Every school faces the dilemma of how to handle special event parking, which significantly raises the need for parking on a few days during the year.

State Funding for New Construction vs. Remodeling

Current state law does not appear to favor new construction over renovation of existing schools. The state will provide funding assistance for “modernization” projects that cost up to 100 percent of new construction costs (WAC 392-347-040). In other words, if a school renovation is estimated to cost more than building a new school entirely, the state will not fund anything over than 100 percent of the estimated new construction costs. The local district must cover the remainder. This law was amended recently, changing it from 60 percent of the costs to 100 percent. In 2002 the state granted an Emergency School Repair and Renovation (ESRR) program. The grants focus on

schools improving health, fire codes, asbestos removal, and access. Importantly, only existing schools are eligible for the some \$13.8 million available. Furthermore, schools must have a poverty rate of 40 percent or higher in order to be eligible to apply.

High Performance Public Building Requirement

The High Performance Public Building Act was signed into law in 2005 (RCW 39.35D.040). It requires that all major facility projects of public school districts receiving any funding in a state capital budget be designed and constructed to at least the Leadership in Energy and Environmental Design (LEED) green building silver standard or the Washington Sustainable School Design Protocol (WSSDP). This goes into effect for Class 1 (>2000 students) school districts in July 2007 and for Class II (<2000 students) school districts in July 2008. The WSSDP and LEED certification both require schools to achieve a minimum point threshold. Points are given in several different categories, including energy efficiency, water efficiency, site planning, materials, and indoor air quality. *Under site planning, points can be earned for locating a school near public transit, providing bicycle paths and parking, minimized parking stalls, and preferred parking for carpool or alternative fuel vehicles.* While both certification systems give school districts the flexibility to choose which sustainable design features to implement, the new law presents an opportunity to reduce SOV usage.

Growth Management Act Regulations

Currently, schools are excluded from Growth Management Act requirements (RCW 36.70A).

Awareness in Washington Around School Siting

There is awareness in Washington of the problems caused by current school siting policy. In an attempt to begin addressing these problems, OSPI held a School Siting Summit in December 2006 and brought together all the players involved in school siting (OSPI, 2007).

What Are the Laws Regarding Teen Drivers and Carpooling That Could Reduce Carpooling Options?

A teenager is not allowed, for the first six months of driving, to have any passengers under age 20 except family members. According to RCW 46.20.070, teenagers between 16 and 18 will be issued an intermediate driver license and must follow these special rules:

- For the first 6 months, the driver cannot drive with passengers under the age of 20 unless they are members of their immediate family (such as a spouse, child, stepchild, or siblings, either by birth or marriage).
- For the next 6 months the driver may not carry more than three passengers who are under 20 years old who are not members of their immediate family.
- For the first 12 months, the driver cannot drive between 1 AM. and 5 AM. unless he or she is with a licensed driver age 25 or older. The only exception to this rule is if one drives for agricultural purposes.

After one year of following these rules and driving without a collision or traffic citation, a teenager can drive without limitations on the time of day or the age and number of passengers. After turning 18, these special rules no longer apply, and an intermediate driver license automatically becomes a regular license.

The teen driver restrictions were passed by the legislature in 2001 for safety reasons. The average, annual number of collisions reported on state highways since 2001 support the policy:

Age 16: down 45 percent

Age 17: down 16 percent

Age 18: down 7 percent

Age 19: up 3 percent (George, 2005)

In her study utilizing data from the 2005 Nationwide Personal Transportation Survey, Kelly Clifton provides descriptive information about teenagers and independent mobility. The results demonstrate that as teenagers age, they gain independence in their daily travels. However, this independence comes with increased reliance upon the automobile. Younger teens are using alternative modes at a much higher rate than older teens, if only for the trip home from school but they appear to abandon walking and

transit use as soon as the automobile becomes an option.

According to Clifton's research, the proportion of teens aged 16 and over who possess a drivers license varies by geographic location. Youth that live in rural or suburban areas are much more likely to have a driver's license than those living in urban areas. Clifton found that around one-third (33.4 percent) of age-eligible teenagers living in urban areas have a license in comparison to approximately three fourths of teenagers living elsewhere. This may be due to the increased transportation options available and accessibility in urban areas. Fears of crime and accidents in the more congested areas and the increased costs of owning a car may also deter many urban teens from obtaining a license.

There may also be a relationship between teen employment and automobile use. Clifton found that about one-half (50.8 percent) of teenagers age 16 and over are employed; however, over three-fourths (79.6 percent) of those who are work have a license. This reinforces the notion that the automobile is an important mode as teens gain responsibilities and suggests that having a driver's license may be necessary for employment. But the direction of that relationship cannot be discerned from Clifton's data. It is likely that teenagers seek employment to finance car ownership, as reported in the literature.

What Factors Affect Transportation Choices to and from Schools?

Active modes of transportation to and from school have been declining for the past 30 years. According to the U.S. Department of Transportation 1969 National Personal Transportation Survey, approximately half of all schoolchildren walked or bicycled to or from school in 1969 (EPA, 2003). In 2001, less than 16 percent of students between the ages of five and 15 walked or biked to school, according to the 2001 National Household Travel Survey (EPA, 2003). This trend is alarming because of its implications for public health, traffic congestion, and air pollution. Academic studies on the topic of factors that affect transportation to and from schools have only recently begun to be conducted with more regularity.

A 2004 Center for Disease Control (CDC) study conducted by Martin and Carlson surveyed 1,588 adults with children ages 5 to 18 in order to find what parents thought

were barriers to their children walking to or from school. Distance was the most commonly reported barrier (61.5 percent), followed by traffic-related danger (30.4 percent), then weather (18.6 percent), then other (15 percent), then crime (11.7 percent), and finally school policy (6 percent) (p. 950). A similar study by Dellinger and Staunton for the CDC in 1999 also found distance to be the most commonly reported barrier (55 percent), followed by traffic-related danger (40 percent), then other (26 percent), then weather (24 percent), then crime (18 percent). The Martin and Carlson study suggests that distance being the largest barrier might be attributable, in part, to an increase of 2 million students from 1969 to 2001, with a corresponding decrease in the number of schools by 1,182 during the same period (p.951). However, the Dellinger and Staunton study showed that even for those who live within a mile of school, only 31 percent of children walked or biked.

A follow-up article by the CDC titled “Then and Now Barriers and Solutions” looked more closely at the barriers identified in the previous two studies. It compared the distance students traveled to school in 1969 and 2001 to reveal that a smaller percentage of children lived within 1 mile (34 percent vs. 21 percent) and 2 miles (52 percent vs. 35 percent) in 2001, which may account for some of the decline in active transportation to and from school. The article points out that the national total hours of traffic delay rose from 0.7 billion in 1982 to 3.6 billion in 2002; this increased traffic volume around schools, which could also account for the decline in active transport. However, the study found that the rate of youth killed or injured in pedestrian-traffic related incidents had declined over time. Although weather and fear of crime were as cited as barriers, adverse weather conditions and violent crime rates for older children (age 12 to 19) had not increased over the time period (trend data for crimes against younger children could not be found). The article suggested that it is important to address the barriers that have changed over time, while not forgetting that although the other barriers have not changed for many children, they are real concerns for some families.

In a 1994 study titled, “Parents’ Conceptions of Social Dangers to Children in the Urban Environment,” Kim Blakely offered support for the idea that fear of crime prevents many parents from allowing their children to be outside unattended. In interviews with 42 parents from a racially diverse neighborhood in New York City, three

quarters of the parents said that fear of crime led them to restrict their child's outdoor play. Walking to school was among the activities considered to be the most dangerous. Hispanic parents appeared to be more concerned than non-Hispanic parents, and girls were thought to be more vulnerable than boys and accordingly afforded less freedom. For most parents the fear of random physical assault by a stranger superseded all other fears of violation or harm. The prospect of injury inflicted on their children in both an unpredictable and violent manner by an unknown assailant appeared to undermine the belief that they could control their child's interactions with the socio-physical environment and, ultimately, protect them from harm.

In a 1996 Australian study representing 6,725 children, De Vaus and Wise found 38 percent of parents to be concerned about attack in the street on the way to school and 41 percent concerned about kidnapping. The level of concern was higher for younger children, but these worries tended to be replaced by safety concerns for teenagers as they traveled to and from entertainment on public transit. Parents in rural areas were less concerned than parents in urban or suburban areas; parents in urban areas were slightly less concerned than parents in suburban areas; and parents of non-English-speaking backgrounds expressed the highest level of worry. According to the authors, Australian crime statistics against youth do not seem to justify such a high level of anxiety, and greater education of the actual level of threat is in order.

In a 2001 British study of eight focus groups titled "Danger Ahead? The impact of fear of crime on people's recreational use of nonmotorised shared-used routes," Neil Ravenscroft, et al. found that adults experience uncertainty and fear in everyday activities outside the home and that this mentality is deeply embedded in modern consciousness, which supported by the literature. Thus, despite low crime rates on shared-use routes and efforts to mitigate fear in public spaces through increased lighting and surveillance and reduced vegetation, Ravenscroft found that people are likely to continue being fearful because they construct these shared-use trails as risky environments. Furthermore, he argued that there is little empirical evidence to support the effectiveness of the mitigation measures.

A 2003 EPA study titled "Travel and Environmental Implications of School Siting" used an empirical model that considered the effect of characteristics of trips,

travelers, schools, and built environments at each end of the trip to assess the factors that affect school transit mode choice. This study's findings show that school location and the quality of the built environment between home and school affect how children get to school. As was found in the CDC studies, this study found that students are particularly sensitive to travel time (distance), with walking and biking rapidly decreasing as trip time increases. Of the many built environment variables, the proportion of arterial and collector streets with sidewalks proved to be the most significant influence on walking. This indicates that sidewalks are one way to address the traffic-related danger concerns of parents cited in the CDC studies. The built environment did not have a significant effect on biking. Regional accessibility for home-based other trips influenced school bus use. In other words, the more accessible the location, the less attractive the school bus relative to other travel modes, suggesting that school buses may serve as a mode of last resort to parents. Students from households with higher incomes and more vehicles per capita were less likely to walk than take another mode. School enrollment did not prove significant after controlling for travel time between home and school. Schools built close to students in walkable neighborhoods, in comparison to existing schools would reduce traffic, produce a 13 percent increase in walking and biking, and reduce emissions of concern by at least 15 percent (p. 26). Because the study was based on data from two general transportation surveys in Florida, the author suggests that a special-purpose survey could allow for much more detailed analysis.

A previous study by Christopher Kouri supported the notion that distance is a major barrier to walking to school. Kouri found that the percentage of students walking to school was four times higher for schools built before 1983 than those built after because those built earlier were placed in neighborhoods or centralized locations. Peer reviewers have suggested that age of school is a questionable proxy for the range of factors that distinguish schools in walkable neighborhoods from others, so the results should be considered suggestive.

In a 2004 descriptive study titled "Child Pedestrians: the Role of Parental Beliefs and Practices in Promoting Safe Walking in Urban Neighborhoods," that compares the perceptions of parents in a neighborhood with high child pedestrian injury rates with those of parents in a neighborhood with low child pedestrian injury rates, Andrea Gielen,

et al. found that parents in both groups recognized the risks associated with the increased exposure to traffic that their children faced and were taking steps to deal with it through supervision, teaching pedestrian safety, and restricting play areas. These findings reinforce the literature, which suggests the need to look to changes in the physical environment to protect child pedestrians.

In further support of a relationship between the built environment and a child's trip to school, Marlon Baornet, et al. argued, in a 2005 study titled "Evaluation of the California Safe Routes to School Legislation: Urban Form Changes and Children's Active Transportation to School," that children who passed by completed national Safe Routes to School program infrastructure projects were more likely to walk or travel by bicycle than were children who did not pass such projects (15 percent versus 4 percent). Sidewalk improvements and traffic control projects were correlated with statistically significant changes, while crossing improvements were not. This suggests that the built environment does have an effect on transportation mode choice of students. Baornet's findings are bolstered by the 2007 Orenstein, et al.. study of many California Safe Routes to Schools projects, which found that infrastructure improvements such as sidewalk installation and upgrading, traffic calming and installation of traffic signals, crossing improvements, and the construction of bike paths resulted in increased walking and biking to school in the range of 20 to 200 percent and decreased pedestrian accidents.

Given that so much of the literature points to the built environment as a significant factor in affecting travel mode to school and that much of the Safe Routes to Schools programs focus on infrastructure improvements, Kelly Clifton and Kandice Kreamer-Fults looked at the environmental attributes associated with pedestrian-vehicular crashes near public schools. Results showed that the presence of a driveway or turning bay at the school entrance decreased both crash occurrence and injury severity. Conversely, the presence of recreational facilities on the school site was positively associated with crash occurrence and injury severity of crashes. Findings related to neighborhood characteristics were mixed, but the significant variables—transit access, commercial access, and population density—were generally associated with increased pedestrian demand.

In a comprehensive 2005 literature review titled “Urban Form and a Child’s Trip to School: The Current Literature and a Framework for Future Research,” Tracy McMillan argued that the current literature does not yet conclusively answer the question of how urban form, defined as a composite of characteristics related to land-use patterns, transportation systems, and urban design, affects a child’s trip to school. She wrote that programs emphasizing infrastructure improvements, such as Safe Routes to School, are based on the unproven assumption that that urban form—such as block length, street width, and sidewalks—is a major barrier to walking. She argued that most research models used to date do not address the complex relationship between urban form and mediating factors such as neighborhood safety, traffic safety, and household transportation options, as well as moderating factors such as social/cultural norms, parental attitudes, and socio-demographics that affect parents’ decisions regarding their child’s travel to school. Furthermore, much of the literature is based on adults, rather than children specifically. She explained that while the growing literature indicates that urban form does have some affect on transportation decisions (and she cited many studies that support the hypothesis), it is not clear how urban form actually relates to travel behavior and the relative importance of urban form in comparison to other factors of influence. To demonstrate the wide variety of other factors that have been shown to affect travel choice, McMillan cited studies that found that fear of criminal danger, real and perceived concerns about traffic safety, distance, and number of cars per household have also been found to significantly affect student travel choice.

A 2006 study by Tya Shannon titled “Active Commuting in a University Setting: Assessing Commuting Habits and Potential for Modal Change,” which surveyed 1,040 college students and 1,170 staff, supports the aforementioned research in stating that actual or perceived travel time is the largest barrier to using active transit modes. The barrier item ‘public transport between my home and UWA is too infrequent’ was rated as reasonably important by staff and students, suggesting that increased public transport services would assist in reducing barriers to active commuting (p. 251). The study also looked at motivators to switch to active transit. Students rated the potential to save money and avoid the need to find parking higher than other motivating factors, while staff rated ‘improvement to health/fitness’ as the most important motivator. However, motivators

were generally considered less important than the barriers. The survey suggested that the introduction of a U-Pass would be the most likely intervention to influence travel behavior.

According to the “Marin County Safe Routes to Schools: Evaluation and Recommendations 2005 – 2006,” produced by the Transportation Authority of Marin, a parent survey representing 228 parents from 31 schools participating in the Safe Routes to Schools program showed that, of the 30 percent of parents who drove their children to school, the primary reasons for not using alternative modes of transportation included “school is on the way to work” (14 percent), distance (12 percent), traffic danger (10 percent), and fear of crime (9 percent). The second most frequently cited barrier for parents of students in 6th – 8th grade was “child’s backpack too heavy” (7 percent) (p. 35). For those considering a carpool, familiarity with the driver was the most important factor, followed by organization. When asked what would affect their willingness to allow their child to walk or bike to school, parents most frequently selected “accompanied by an adult.” The parent survey also demonstrated considerable variability in response, depending on the age of the child and geographic location, indicating that individual schools need to have the flexibility to tailor Safe Routes to Schools programs.

In 1996 the Seattle public school district adopted the “Open Choice Plan” that allows parents to send their child to any school in the district. If students do not like their local school, they can go to a school within their cluster, and the city will provide free bus transportation. Students can also go to schools outside the cluster, but free bus transportation is not provided to those students. This plan is currently being reviewed in light of the recent Supreme Court decision and an increase in busing costs. (The researchers could not find an evaluation of the effect of this policy on traffic, but most likely it results in more students living farther from their school, which is the primary barrier to active transit to school.)

What Are Some Examples of Factors That Reduce SOV Usage to and from School?

Yellow School Buses in Washington

Pupil transportation is provided for students in all but two of the state's school districts (Stehekin and Shaw Island). In 2004-05, pupil transportation programs used 7,500 buses to transport over 480,000 students approximately 90 million miles (JLARC, 2006).

Beginning in the 1980-81 school year, the legislature established a statutory commitment to fund the transportation of eligible students to and from school at 100 percent or as close thereto as reasonably possible, as is described in RCW 28A.160.150:

“Operating costs as determined under RCW 28A.160.150 through 28A.160.180 shall be funded at one hundred percent or as close thereto as reasonably possible for transportation of an eligible student to and from school as defined in RCW 28A.160.160(3). In addition, funding shall be provided for transportation services for students living within one radius mile from school as determined under RCW 28A.160.180(2). (RCW 28A.160.150.)”

The statute (RCW 28A.160.160 (1)) defines “eligible student” as follows:

“Any student served by the transportation program of a school district or compensated for individual transportation arrangements authorized [by statute] whose route stop is more than one radius mile from the student's school, except if the student to be transported is disabled under RCW 28A.155.020 and is either not ambulatory or not capable of protecting his or her own welfare while traveling to or from the school or agency where special education services are provided, in which case no mileage distance restriction applies.”

The statute (RCW 28A.160.160 (3)) also defines “to and from school” as follows:

- “Transportation of students for the following purposes:
- (a) Transportation to and from route stops and schools;
 - (b) Transportation to and from schools pursuant to an interdistrict agreement pursuant to RCW 28A.335.160;
 - (c) Transportation of students between schools and learning centers for instruction specifically required by statute; and
 - (d) Transportation of students with disabilities to and from schools and agencies for special education services.

According to OSPI Regional Transportation Coordinator Randy Millhollen, only 42 percent of eligible students in Washington ride the yellow school bus.

Most of the 296 school districts in Washington own their own buses and operate them at a district level; however, some districts form cooperatives to provide pupil transportation. Each cooperative arrangement is different. At one end of the spectrum are arrangements between two districts that share only the cost of administration and maintenance while each district owns and operates its own buses with its own employees. At the other end of the spectrum is the KWRL cooperative, which is a separate entity under Woodland School District that provides pupil transportation for Kalama, Woodland, Ridgefield, and La Center school districts. KWRL has its own employees that provide services for all the cooperative districts, and Woodland receives state funding directly for the services KWRL provides to all four districts.

Fifteen districts contract with private carriers for some or all of their pupil transportation. Most of these contracts specify a base rate for routes between home and school and a separate set of rates for shuttles during the day, field trips, and extra curricular activities. Some contracts include fuel and aides; others either do not include these expenses or they cap fuel charges included in the contract.

Four of Washington's nine Educational Service Districts (ESDs) provide limited pupil transportation for school districts. Of these programs, only ESD 112, in southwest Washington, transports a large number of students on an ongoing basis. ESD 112 operates a 23-district transportation program to provide transportation for students with specialized transportation needs, mostly special education students and students needing inter-district homeless transportation.

Total state funding for pupil transportation operations in the 2005-07 budget was \$500 million, with \$77 million earmarked for bus purchase and replacement and the remaining \$423 million for operations. The average one-way school bus trip per student is \$.67 (Carlson, 2006). Five major factors drive funding (JLARC, 2006):

- *Student Count* (also known as the Ridership Count) — Students are counted as they get on the bus in the morning for five consecutive days at the beginning of each school year. Statistical modes are then used to calculate a student count for every bus stop on every bus route in each district.

- *Number of Trips per Day* — Most routes have two trips per day (morning and afternoon). However, some trip types have one trip per day, or run less than four days per week and are prorated accordingly. These trips include shuttles between schools and/or learning centers that may only run once or twice a week.
- *Distance Between Bus Stops and School* — This distance is determined by measuring the straight line distance between a bus stop and the school it serves, also known as the radius mile. Districts are funded up to a maximum of 17 radius miles for each student counted.
- *Distance Weighting Factor per Radius Mile* — OSPI established regular and special transportation distance weighting factors in the WAC for each radius mile between bus stops and schools, learning centers, or special education agencies. The distance weighting factors are used to “weight” the student count, resulting in more funding for longer distances.
- *Allocation Rate* — A per weighted student allocation rate is set by the legislature and adjusted each year in the Appropriations Act. In 2004-05, the allocation rate was \$40.66. This rate is multiplied by the student count, number of trips per day and distance weighting factor to determine funding amounts.

Recommendations for More Efficient School Bus Funding

According to a 2006 Joint Legislative Audit Review Committee (JLARC) report, actual school bus costs exceeded the state allocation by about \$100 million. However, JLARC does not recommend simply increasing the allocation rate used in the current funding method to make up for the gap. JLARC found significant structural and implementation problems with the current funding method that prevent the method from generating funding that reflects districts’ actual costs. The report recommends the following:

1. The Legislature should require districts to report to/from bus transportation costs separately from other transportation costs so that the state can determine the extent to which funding reflects eligible transportation costs.
2. The Superintendent of Public Instruction, in consultation with the State Auditor, should adopt rules and clarify instructions for tracking and reporting

transportation costs.

3. The legislature should review statutory language to ensure that there is clarity around what transportation costs the state intends to fund.
4. The OSPI should change its WACs to conform to statute to ensure that all qualifying trips can generate funding by the state.
5. The legislature should establish a method for providing funds to operate to/from pupil transportation programs that reflects costs and the state's priorities in funding. If the state's highest priorities are local control and reflecting to/from costs, then the legislature should establish an Approved Cost Method. If the state's highest priority is the efficient use of state and local resources, then the legislature should establish a Predictive or Efficiency-Driven Formula that reflects to/from costs. In both cases, the legislature will need to develop a method customized to Washington's needs.

A 2002 study by the Committee on School Transportation Safety at the National Research Council that compared the relative risk of different modes of school transportation found yellow school buses to be the safest. Every year about 800 school-aged children are killed in motor vehicle accidents during normal school travel hours. Of the 800 deaths, only about 2 percent are school-bus related, while 74 percent occur in private passenger vehicles and 22 percent are the result of pedestrian or bicycle accidents. More than half of all deaths of children between age 5 and 18 occur during normal school travel hours when a teenager is driving.

School Bus/Public Transit Coordination In Rural Areas

The dearth of public transportation options in rural areas has led to transportation coordination between school districts and public transportation agencies in many rural communities. According to an extensive 1999 Federal Transit Administration (FTA) report on the subject, in some communities school districts are transporting students – particularly in high school – via public transit. In other areas, the general public is being transported on school buses when the buses are not in use for student transportation. And, in a few communities, students and the general public are riding on school buses at the same time.

Efforts employed by schools and public transit agencies to coordinate their respective transportation services are not limited to operations; some school districts, public transportation agencies, and even Head Start transportation programs have coordinated support services such as maintenance and fueling. In addition, the consolidation of administrative staffs – if not the entire programs – has been achieved in a few areas and is being considered in others.

A survey conducted as part of the FTA report found that of the 80 sites coordinating service, the most popular type of coordination involved placing regular education students, Head Start, and/or agency clients on public transit vehicles. Only 30 communities used school buses to coordinate service. Of these, 10 did and 20 did not co-mingle the public with students. The majority of sites that coordinated service mentioned that the financial savings were notable, particularly for those entities involved in formal agreements.

Because every community is different and there is no one-size-fits-all method of coordination, the FTA report establishes a framework for assessing the key factors that affect the coordination/integration of student transportation service and public transportation services in non-urban areas. These key factors include the following:

- *Lack of public transportation services* – Approximately 38 percent of the nation does not have access to public transit, and one in four rural households does not have an automobile.
- *Existence of human service agency transportation* – In many rural areas, human service transportation is the only transportation available besides school buses. Many opportunities exist for coordination between the two systems – some communities have successfully shared vehicles and routes, while others share maintenance facilities and administrative responsibilities.
- *Funding issues* – Transporting students on public transit vehicles is most effective when "unused capacity" on existing routes is used, resulting in a long-run incremental cost to the taxpayer that is virtually zero. Similarly, transporting the public on school buses is most effective when there is available capacity. Financing is a complex issue, and agencies that consider coordination of student transportation and other passenger transportation services must find similar

- frameworks for evaluating the cost impacts of coordinated activities.
- *Operational issues* – By understanding how student and public transportation services are delivered, including differences and similarities in management and operational processes such as service standards, vehicle standards and design criteria, governance, legislative and regulatory requirements, and costs, we can better identify opportunities for enhanced coordination of these services.
 - *Legal and regulatory issues* –A number of regulatory barriers inhibit the coordination of services. While most of these regulatory constraints pertain to the physical design of buses used to transport school children, state laws around school bus riders, federal law that prohibits funding to specific types of school transportation, and Americans with Disabilities Act (ADA) public transportation standards also pose challenges to coordination.
 - *Safety issues* – Prospective changes in policies and procedures that may stem from coordination planning are often perceived as a potential compromise to the safety of the community's school-age children.

Safe Routes to Schools National Program

Through the 2005 passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Congress allocated \$612 million toward developing the National Safe Routes to Schools program (www.saferoutesinfo.org). The program provides funds to the states to substantially improve the ability of elementary and middle school students to walk and bicycle to school safely (it does not fund carpooling). Each state administers its own program and develops its own procedures to solicit and select projects for funding. The program establishes distinct types of funding opportunities: engineering improvements, and education, enforcement, and encouragement programs. Although many states or school districts had already implemented Safe Routes to Schools programs independently, the federal program provided an infusion of money, promotional materials, program models, and support. Each state is responsible for hiring a full-time Safe Routes to Schools coordinator to implement a Safe Routes to Schools program. Charlotte Claybrooke, a WSDOT employee, is the Washington coordinator.

Safe Routes to Schools Program in Washington

The Washington Safe Route to Schools program has offered grants since 2004 and free technical assistance to schools (www.wsdot.wa.gov/bike/Safe_Routes_Projects.htm). All grants have funded projects that have had an engineering, education, and enforcement element. In the 2005-06 cycle, over \$2.95 million was allocated.

Marin County Safe Routes to Schools Program

The Marin County Safe Routes to Schools program offers an example of the type of activities that can be implemented and the organizational structure of a program at the county or school district level. The Marin program, originated in 2000, uses a number of transportation demand management strategies to decrease SOV trips to schools. Although coordinated centrally, the program relies heavily on parents, teachers, and community volunteers to carry out its range of activities, which fall into the following five elements coined by the national program:

- Education – Classroom lessons teach children pedestrian safety skills using Safe Routes to Schools curriculum, generally taught during P.E.
- Engineering – The program’s licensed traffic engineer assists schools in developing a plan to improve infrastructure around the school for walking and biking.
- Encouragement – Events such as Walk/Bike to School Days, contests including “frequent rider miles,” and promotional materials are incentives that encourage children and parents to try walking and biking. The program also coordinates and supports volunteer organizers in attempting to establish walking school buses, bike trains or carpools.
- Enforcement – Police officers and crossing guards participate throughout the Safe Routes process to encourage safe travel through the community.
- Evaluation – Program participation is monitored through an annual mode shift analysis and regular parent surveys.

The Marin program has grown tremendously since its inception in 2000, expanding from 3,500 students in nine schools to 18,470 students in 45 schools in 2005. Schools participate at different levels, based on the availability of staff and volunteers, as

well as on the school's willingness to incorporate Safe Routes lessons into their curricula. According to the "Marin County Safe Routes to Schools: Evaluation and Recommendations 2005 – 2006" report, produced by the Transportation Authority of Marin, Safe Routes to Schools became a program of Marin County's Public Works Department, funded by the Bay Area Air Quality Management District (BAAQMD), in 2004. This countywide program became a project of the Transportation Authority of Marin in 2005, with ongoing funding available through the recently passed Measure A sales tax, which provides dedicated funding to the Safe Routes to Schools program, as well as to complementary transportation projects. The project has also received federal Safe Routes to Schools dollars for infrastructure improvements.

According to a 2003 evaluation of the program by Catherine Staunton, et al. titled "Promoting Safe Walking and Biking to School: The Marin County Success Story," the program resulted in a decrease in SOV trips by 39 percent during its first two years. At the time of the article, the program had four paid staff, including a program director, a person who supervises and promotes the program, an educator who develops curriculum and oversees classroom education, and a traffic engineer who assists in identifying and creating safe routes for students. A private consulting firm oversaw and evaluated the program. The program requires each school to identify a volunteer team leader prior to enrolling.

As described in "Marin County Safe Routes to Schools: Evaluation and Recommendations 2005- 2006," a mode shift analysis, consisting of a "before" and "after" in-class student survey conducted by teachers at participating schools, showed that the program continued to make significant progress in reducing the number of automobile trips that drop off and pick up students from school during the 2004-05 school year:

- a reduction of 13 percent in single student vehicle trips (42 percent in fall 2004 in comparison to 55 percent in spring 2005)
- increases of 6 percent in walking, 2 percent in biking and 7 percent in carpooling in spring 2005, as compared to fall 2004 (p. 6).

The report also included a parent survey representing 228 parents from 31 participating schools and 53 parents from 20 non-participating schools. The parent survey

showed a substantially higher rate of bicycle and walk commuting, and a lower rate of drive-alone commuting, at participating versus non-participating schools. Fourteen percent of respondents credited Safe Routes to Schools as the reason they switched to an alternative mode, which is roughly consistent with previous data. The survey revealed that adults found the program's influence in decreasing congestion around schools to be the greatest value of the program.

Walking School Bus

A walking school bus is a particular program advanced by the Safe Routes to Schools program and described in detail in the Safe Routes to Schools how-to guide, "The Walking School Bus: Combining Safety, Fun and the Walk to School." A walking school bus is a group of children walking to school accompanied by one or more adults. It can be as informal as two families taking turns walking their children to school or as structured as a planned route with meeting points, a timetable, and a schedule of trained volunteers. Many schools have set up walking school buses to varying levels of formality. The essential elements are a set route, set meeting places, a timetable, a volunteer schedule, and a means to publicize information.

In an effort to examine the perceived benefits of walking school buses, Simon Kingham and Shannon Ussher conducted a study in 2006 titled, "An Assessment of the Benefits of the Walking School Bus in Christchurch, New Zealand." The researchers interviewed 33 people involved in running the walking school bus and principals at the 11 participating schools. The most commonly reported benefit related to the social connections the adults and children built through their involvement. The second most common benefit acknowledged by parents was the enhancement of children's health. Parents also enjoyed the time savings of not having to take their child to school every day, getting children into the habit of walking, and increasing children's independent mobility.

City Safe Routes to Schools Pilot Programs

Sharon Roerty, at the national Active Living Resource Center (ALRC), stated that Safe Routes to Schools programs are happening primarily in middle and upper class suburban neighborhoods. Poorer urban schools do not have the same number of parent

volunteers, number of staff to write grants, or Internet access as other communities, making it difficult for them to initiate Safe Routes to Schools programs. In response to this unmet need, the ALRC launched five pilot City Safe Routes to Schools programs in urban neighborhoods in Birmingham, Alabama, Chicago, Illinois, and St. Paul, Minnesota. The ALRC publication “City-Safe Routes to Schools: Pilot Programs 2006” discusses the unique elements necessary to start up Safe Routes to Schools programs in low-income urban neighborhoods. ALRC jump started the pilot Safe Routes to Schools programs by holding 3-hour workshops for a wide variety of community members where the barriers to active transport to school were discussed and distinct action steps were agreed to. This approach differed from that of more suburban schools where online toolkits and case studies were emphasized. Food was served at the workshops and a lot of legwork was done to assure that key participants attended including reputable community leaders who could carry the action items forward. Education and encouragement were less emphasized, while enforcement was more emphasized. It also became clear that knowledge of the political backdrop was important. The article does not discuss the action steps agreed to or evaluation of the pilot programs’ effect on transportation choices.

City of Bellevue Trips to School, Safe Routes to Schools Program

The City of Bellevue was one of the first cities to undertake a comprehensive alternative transit program for schools. In 2005 the city launched a two-year pilot program in cooperation with the Bellevue School District and participating elementary schools. City staff developed a toolbox of program elements and then worked with each participating school to develop and implement a customized program that met the school’s unique needs and interests for reducing traffic congestion. School programs were kicked off during an October walk to school and included one or more of the following program elements: information material for parents, educational activities and events for students, walking school bus coordination, incentive programs that required students to complete a certain number of trips for a prize, and assistance applying for grants to enhance pedestrian safety at the schools. Each school had to provide a volunteer to help lead the program at that school, but city staff created the resources, conducted the

assemblies, and set up occasional promotional booths at the schools. Nine of the 15 schools in the district participated.

The city tried to encourage carpooling by coordinating sign-up sheets at PTA meetings and events, but very few parents were interested. The city also attempted to have school directories sorted by neighborhoods to heighten awareness of students living close to one another. However, this effort was never completed because of concerns that the city's use of these directories would result in their being considered public records. One other barrier that was identified with regards to implementing elementary school-level carpools was the coordination of car seats for each child.

The first year resulted in a 1 to 2 percent increase in students walking and biking to school according to Francine Johnson, Bellevue Transportation Outreach Coordinator. The second year resulted in an average of 4 percent of the total student population reporting a reduction in "drive alone" trips to school. The original goal for the pilot program was to have city staff initially lead the program but then, over the two-year pilot, transition to school staff or volunteers leading their individual programs. However, at the end of the pilot program it was evident that continuing the program would require a large amount of dedicated city staff resources. The city decided not to continue the program because staff resources were needed on other projects.

The City of Bellevue found that the schools had so much on their plates that they were reluctant to take on new programs. It was also difficult to find volunteers who could complete the whole year, and with so much turnover at schools, progress was often lost from one year to the next. Johnson felt that to be successful, the program really needed to have someone overseeing it from year to year and encouraging the schools to take on the program. The City of Bellevue program was not able to offer engineering improvements as an incentive for schools to participate in other program elements such as education, enforcement, and encouragement, with the exception of two Safe Routes to Schools grants that included the program as the educational component.

The information above is based on a phone interview with Francine Johnson, Bellevue Transportation Outreach Coordinator.

Teen Pass Program—Denver Regional Transit Department

The Teen Pass Program is offered as part of Denver's Regional Transit Department's (RTD) Deep Discount Transit Pass program. Students at participating elementary, middle, and high schools may purchase a monthly pass for the local bus and light rail systems for \$25, which is discounted from the \$29 regular price. The passes also provide students a 75¢ discount on higher-fare trips, such as Express and Regional Routes.

Teen Passes are sold only through schools. RTD delivers the passes to schools each month from September through May. Schools purchase Teen Passes on consignment, and the school is later invoiced for the number of passes sold (<http://www.rtd-denver.com/FaresAndPasses/Passes/TeenPass/>).

Teen Pass Program—Roosevelt High School “Way to Go” Demonstration Project

In 1999 the City of Seattle began investigating ways to raise awareness about automobile trip reduction among high school-age students. By the end of 1999, Roosevelt High School was targeted as the site for a pilot project to be carried out by the City of Seattle (the former Strategic Planning Office and Seattle Department of Transportation) in cooperation with the Seattle School District (Resource Conservation/Logistics Office).

The project was designed to accomplish the following:

- test an array of products and services along with educational materials and promotional activities
- determine which of these would successfully raise awareness of transportation choices and create incentives for student/staff actions to reduce automobile trips
- determine whether these changes might reduce parking impacts on surrounding neighborhoods
- allow the most successful elements to be transferable (fully or partially) to other high schools.

The trip reduction demonstration project was kicked off during the final six weeks of the 1999-2000 school year and continued throughout the following year, concluding with activities on Campus Day 2001.

Principal funding for the demonstration program was provided through the City of Seattle's Trip Reduction Initiative, with significant in-kind assistance from both Seattle School District (SSD) and Metro, as well as other public and retail partners. Taylor Consulting implemented the program. Table 4 describes the “Way to Go” program elements and the different function that each of those elements performed.

One program element that rated high on the student transportation survey but was not implemented was priority carpool parking. This was important to students because parking at Roosevelt is very limited. However, because of liability concerns at the school district and the City regarding youth drivers, no permitting mechanism was agreed upon, and this element was discontinued.

The pilot program produced fairly strong results according to the “Roosevelt Trip Reduction Demonstration Project Final Report” by Lynn Taylor. Metro bus use increased, and passes were popular. The program resulted in a nearly 200 percent increase in monthly sales of bus passes—from 25 per month to an average of 71 per month. Bus trial students reported using the Metro bus regularly. Seventy-seven percent used it five days a week to get to and from school; 50 percent of parents said their child used Metro frequently for work or recreation; and 85 percent said that the Metro trial was successful. Student awareness and behavior was affected, as 39 percent said the Way to Go program made them more aware of the transportation choices available to them. Furthermore, of those who previously drove alone to school, 28 percent said they drove alone less often, and 15 percent said they stopped driving alone. More than 7 percent said they biked or walked more often, 15 percent took Metro more often, and 13 percent took the yellow bus more often. A high percentage of students found the free bus pass more appealing than the yellow bus. Another benefit of the program was that teacher participation in trip reduction was modest.

Despite the positive results, the program has been discontinued because of funding shortages and a management decision at the city to spend scarce resources on other priorities. Dave Allen from the City of Seattle Department of Transportation mentioned that it is essential to have a champion at the school; otherwise, the program will go nowhere, despite any effort put forth by the city. Most schools already have a lot going on and are unwilling to take on a new program.

Table 4. “Way to Go” Program Elements and Functions

Program Element	Function
A reduced price monthly student Metro pass, which was heavily marketed	Products
Yellow bus service was replaced with free Metro passes for approximately 175 students.	Products
Three new bike racks	Physical Improvements
A free-standing kiosk, created for the lobby, included transportation information. Five articles appeared in issues of the Rider Record (information was distributed to PTSA newsletter), Roosevelt and Ravenna/Bryant neighborhoods, and several articles appeared in the University Herald.	Educational Materials
Spring kick-off - included classroom sessions with introductory materials about trip reduction, including a group transportation quiz. "Factoids" about the activity impacts of automobile use were incorporated at many stages during the year—on the lobby display, in morning PA announcements, and on posters around the school.	Educational Materials
Building on SSD's new requirement for high school students to perform community service, a packet of projects and ideas for qualifying Way to Go activities was developed, and several students participated to help create educational materials.	Educational Materials
A number of retailers donated products and participated in events.	Marketing and Promotion
Government and non-profit contributed to program events, providing staff, handout items, and free tickets.	Marketing and Promotion
A transportation fair was held in the school cafeteria to kick off the program. Students who signed pledges to travel by bus, bike, walking, or ridesharing at least three days each week received free Metro tickets or product vouchers, and one piece of Papa John's pizza. During the six-week period following the Transportation Fair, random rewards were handed out to students arriving by bus or bike, walking, or sharing rides to further strengthen pledge compliance.	Marketing and Promotion
The fall kick-off included introduction of the informational kiosk in the lobby, information over the PA system about free and reduced price bus passes, plus an information table and a student skit at the Freshman assembly. Later in the fall a "Rider Rewards" promotion randomly rewarded bicyclists and those picking up their bus passes with Old Navy and Amazon gift cards and movie passes.	Marketing and Promotion
In February students were asked to participate in a "Factoid Challenge" with the theme "You'll Love the Way to Go in February." Winners were announced on the PA in an attempt to encourage more entries for future weeks.	Marketing and Promotion
The final promotional event focused on bicycling—students were encouraged to bike to school—and the class with the most bicyclists received rewards, presented by City Councilmember Heidi Wills (who arrived by bicycle herself).	Marketing and Promotion

Student-Led Transportation Club, Vancouver, B.C.

In 1999, Vancouver's Better Environmentally Sound Transportation (BEST) began a student-led TDM program called Off Ramp with 15 secondary schools. Off Ramp is a high school program that trains and supports a small club of about a half-dozen student leaders to reduce the number of car trips made to their school. BEST guides student leaders through some preparatory work to determine the barriers and incentives to sustainable transportation in their school. Together they select from a growing list of activities that raise awareness, reward "good" behavior, and generate opportunities for their peers to get to school by using alternatives to SOV. Additionally, each student is asked to take the lead on a longer-term initiative, such as fund raising for a bicycle rack. Student leaders are supported with site visits from a local Off Ramp program coordinator.

The program was expanded to other transportation planners outside of BEST's jurisdiction through an implementation guidebook, two training workshops, accompaniment to a school in their community to lead a start-up workshop, and telephone and e-mail support from BEST. Part of what is being accomplished is getting high school students to discuss alternative transportation among themselves and to think about it independently from their parents.

U-Pass/Deep Discount Transit Pass Programs

Deep Discount Transit Pass Programs, as described by Cornelius Nuworsoo, provide a defined group of people with unlimited ride transit passes in exchange for some contractual payment for or on behalf of pass users by an employer, other governing body, or other organizing body. The programs fall into four categories: the *employment-based ECO Pass*, the *Neighborhood ECO Pass*, the campus-based *College Pass*, and the *TeenPass* that is sold through middle and high schools. Deep discount group pass programs exhibit the following general features:

- *Universal coverage* of members of an identified group – Most often all members of a participating body are included. In some cases, as at the University of Washington, members can opt out of the program. In all cases, there are criteria for qualifying a distinct body.
- *Unlimited ride* – In most programs, participants use validated picture identification cards as passes to board the transit vehicles. Participants are

- permitted rides on the various types of transit modes offered by the transit provider typically for a whole calendar year.
- *Pricing* – All programs offer deep discount pricing that covers a relatively large number of people as a form of *innovative financing*. Deep discount prices are as low as 6 percent and as high as 60 percent of the price of the regular monthly pass. Not all passes are priced equally because the pricing is designed to cover costs of providing service that include operational, maintenance, and administrative expenses of the transit agency, program marketing, and administrative assistance to participating employers.
 - Some employment-based and neighborhood-based programs offer *guaranteed rides home* either through the transit operator (as by Denver RTD and Santa Clara VTA) or through the employer (as by the City of Berkeley in collaboration with the local congestion management agency).

U-Pass programs have been implemented at many universities across the country, including the University of Washington. A U-Pass program is a partnership between the university and the local transit agency in which the university pays the transit agency, and all eligible members of the university community ride for free or at a reduced rate. With the UCLA program, students, faculty, and staff swipe their university ID card through an electronic reader when they board the bus, and the university pays the fare of 45 cents per ride. The U-Pass program is funded entirely from parking revenue. As a context for this program, parking at UCLA was very limited, and a wait list of 3,969 existed for parking permits before the U-Pass program began.

A 2003 study by Jeffrey Brown, Daniel Baldwin Hess and Donald Shoup evaluated the results of the U-Pass program at UCLA. Bus ridership for commuting to campus increased by 56 percent during the program's first year, and solo driving fell by 20 percent. The report mentioned that these results are similar to those of several other universities that have implemented the U-Pass. The survey also found that many people, even those who drove to campus, used the bus for noncommute trips during the day. The number of people on the parking wait list dropped by over 1,000. The study found that three factors associated with the U-Pass helped to explain the long-term ridership increases:

- With more bus ridership, the transit service received more money and was thus able to provide better service to campus.
- More people became familiar with the bus system.
- Students began to adjust their housing choices to take advantage of the bus service.

In support of Brown, Hess and Shoup's findings, Cornelius Nuworsoo, in his 2004 dissertation, found that all three deep discount bus pass programs he studied, including the UC Berkeley ClassPass, the City of Berkeley ECO Pass and the Denver ECO Pass (employment-based, neighborhood-based, and student-based) yielded more revenue per boarder to the transit service than the system-wide average. Furthermore, he found that transit consistently gained shares of between 5 and 15 percentage points. He also found that the gain was typically more pronounced among students than other employees.

Mandatory Student Bus Pass Program at University of Colorado (CU)

The Student Bus Pass Program at CU Boulder provides all students with a free regional bus pass in exchange for a mandatory transportation fee charged every semester. The information presented below regarding the Student Bus Pass Program is from an article on the CU website by Poinsette and Toor and a dissertation by Cornelius Kofi Nuworsoo.

The Student Bus Pass program was initiated in response to student demand, local community concerns about traffic, parking and pollution problems, and budget pressures associated with the high cost of parking structures. In 1990 the Transportation Advisory Committee undertook the student bus pass program as its first major initiative with active support of the student government, the vice-chancellor's office, and the city. When the issue was placed on referendum in 1991, students voted to pass the measure by a 4 to 1 margin. The initiative created a student fee of \$10 a semester that provided the necessary \$550,000 to fund the program along with the initial funding assistance provided by the city. By arguing that students travel at off-peak hours and would not necessitate extra buses, the school was able to negotiate a lower contract with the Regional Transportation District (RTD). A travel diary of mode splits, released in January 1999, indicated that

student bus ridership to campus rose by about 550 percent from 1990 to 1998.

The tremendous student ridership increase encouraged the implementation of two new transit services, which have proved to be great assets to the city of Boulder and the goals of its Transportation Master Plan.

- The HOP is a smaller, shuttle-type bus that runs with high frequency to connect the downtown, the university, and the major commercial shopping areas in a circular route. It was initially funded by federal grant money but has more recently been funded with support from the student bus pass fee.
- The SKIP is an express bus that travels the north/south span of the city, running by the university with high frequency. Student demand and financial support from the bus pass program brought the SKIP to fruition. The RTD, which runs the SKIP, was receptive to the city and the university request for expanded service in part because of the powerful constituency created by student riders.

In 1997 CU students demonstrated their overwhelming support of the bus pass program by approving a referendum by a 16 to 1 margin that raised fees by \$5 a semester to \$19.42 in order to extend transit benefits and services as follows:

- In addition to free local bus service, students consequently gained free access on regional trips that cost \$3.25 for metro area cities and up to \$8 for the Denver International Airport.
- They also enjoy heavily discounted weekend bus service to major Colorado ski areas.
- Finally, the extra fee helps pay for the HOP and the SKIP bus routes.

In 1998 the faculty and staff joined the city's ECO Pass program, which provides deeply discounted bus passes to employees. This added to the number of people utilizing the buses to and from the University.

While the incentive program had a lot to do with the decline in CU students driving alone, disincentives have also played a role. It currently costs students \$30+ per month to purchase a parking permit for lots on the university campus, which is significantly more than the semester transportation fee.

Cash-Out for Parking Law in California

In a 1997 study titled “Evaluating the Effects of Cashing-Out Employer Paid Parking: Eight Case Studies,” Daniel Shoup compared seven employers in the greater Los Angeles area who complied with the 1992 California Parking Cash-Out law (administered by the Air Resources Board) and one employer who did not comply with the law. The California law requires employers of 50 or more persons in regions that do not meet the state’s clean air standards to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space. However, it only applies to parking spaces that employers rent from a third party. The law allows for quite a bit of flexibility, enabling employers to offer commuters any of the following:

- no parking subsidy
- a parking subsidy only for carpools
- the choice between a parking subsidy or its cash value
- the choice between a parking subsidy or more than its cash value
- a commuting allowance that can be spent on any form of commuting.

All firms offered an equal level of subsidy to all employees. For the 1,694 employees of the eight firms, the number of solo drivers to work fell by 17 percent after cashing out. The number of carpools increased by 64 percent; the number of transit riders increased by 50 percent; and the number who walked or biked to work increased by 39 percent. Vehicle-miles traveled for commuting to the eight firms fell by 12 percent. Carbon dioxide emissions from commuting fell by 367 kilograms per employee per year. The eight firms’ spending for commuting subsidies rose by \$2 per employee per month because payments in lieu of parking increased slightly more than spending for parking declined. Federal and state income tax revenues increased by \$65 per employee per year because many commuters voluntarily traded tax-exempt parking subsidies for taxable cash. Employers praised the cash option for its simplicity and fairness, and said that it helped to recruit and retain employees.

A 2002 report by the California Legislative Analyst Office (LAO) found that the law is rarely enforced because it does not require the Air Resources Board to do any outreach and monitoring. Even if it were enforced, the law is so narrowly written that the

LAO concluded it would only apply to 3 percent of parking spaces in the state because employer-owned spots are exempt (it only applies to leased parking spots). The LAO estimated that between 10 and 20 percent of employees would participate in the program if it were offered to them. The report cited literature that found that free parking significantly increases the rate of solo driving. The LAO report concluded that the Cash-Out program is worthwhile because it is easy to implement, has good participation rates, and is a much less costly way to cut emissions and congestion than light rail and other capital-intensive projects. However, the report suggested that more outreach and periodic monitoring should be done to increase the law's impact and effectiveness.

SchoolPool Ridematching Program in Contra Costa County, California

In 2002 the Contra Costa County School Pool pilot program was implemented with the goals of providing parents with information on neighboring students who were interested in carpooling to and from school and encouraging those parents to establish a carpool. Carpooling was voluntary, and no financial incentive was offered to the parents. Carpool ridematch lists were provided to parents with students attending the same school to encourage carpooling. The program was promoted among residents who had children in all public and private schools throughout the county (kindergarten through college). The SchoolPool program was administered by staff at the Contra Costa Commute Alternative Network (CC CAN).

For the 2002 school year, carpool ridematch forms were sent directly to 150 participating schools and in turn were distributed in fall registration packets to over 157,000 school children. Additional program outreach efforts included presentations to Parent Teacher Associations (PTAs) and school administration.

As ridematch applications were received, rideshare matches within the same district were found and sent within three days to the applicant. For the 2002 school year, approximately four ridematch lists were sent to each parent during the course of the first three months of the school year. Additional ridematch lists were sent throughout the year as new parents moved into the school area, or as parents' commute patterns changed.

Parents who were unable to find a carpool partner were encouraged to have their children try transit instead of driving. To encourage participation, a \$20 bus pass was provided for the student's use. CC CAN Staff worked with county bus operators to

develop bus schedule brochures for each school district. In turn, the brochures were distributed with free tickets so that parents could see and experience which routes and schedules serviced their schools.

SchoolPool required a full-time employee for six months or a half-time employee on an annual basis. The most intense time was between April and October, when registration forms were generated and distributed and most of the outreach occurred. The total program cost for SchoolPool during the 2002 school year was \$95,000, and the total number of unique rideshare requests was 536.

According to an interview with Corinne Dutra-Roberts, a Transportation Analyst with 511 Contra Costa, the ridematching portion of the SchoolPool program was discontinued, as the implementing agency felt it was not as effective as anticipated and wanted to focus on other priorities. One of the problems described by Dutra-Roberts was that more people wanted rides than could give rides. Furthermore, people seemed to be more motivated to participate for the sake of convenience than to relieve congestion or protect the environment. Because of differences in parental work schedules, parents would often need to drop their child off early or pick them up late from the carpooler's house. This was a significant barrier because parents who were willing to carpool often were not willing to also babysit before and after the ride.

Dutra-Roberts felt that carpooling worked best in wealthier communities where one parent did not work and would be able to have a flexible schedule. It also worked better with private schools to which children came from long distances. Dutra-Roberts was also of the opinion that parents were more resistant to getting involved in something that was agency-driven than to a program that was school- or parent-driven. Carpooling was quite successful at three high schools that provided priority parking to carpoolers. All of these schools had very constrained parking. The key to making this work was ongoing regulation of the carpool parking lot so that student drivers couldn't cheat. Carpoolers had to get a parking permit and list the names of their fellow carpoolers, and a school staff person monitored the parking lot every morning.

This SchoolPool program was featured in the 2004 Federal Highway Administration article, "Mitigating Traffic Congestion – The Role of Demand-Side Strategies."

Bikeability Training—National Program in England

In spring 2007, a new national program was rolled out across England allowing thousands of children the chance to get a Bikeability Award. Bikeability is the Cycling Proficiency Test designed to give children the skills and confidence to ride their bikes on busy roads. To get their Bikeability award, children (and adults) have to be instructed on how to ride their bikes to the Government-approved National Standard for Cycle Training, which sets out the training and skills essential for making cycling trips in today's road conditions. The standard was developed by over 20 organizations and is maintained by the professional body for cycle training, the Cycle Training Standards Board. There are certified trainers all over England, and children can find them via the Bikeability website, www.bikeability.org.uk. Cycling England is the national government body that gives grants to local authorities that deliver national standard cycle training.

By establishing a National Standard, the British government is setting out a nationwide uniform program of formal training that will reassure parents that young people wanting to cycle have been instructed in the essential skills and procedures wherever they live in England. The aim is to increase the numbers of children who receive quality cycle training by qualified instructors and, by 2008/2009, to ensure that as many as half of year-six pupils be trained through schemes awarding Bikeability. The ultimate vision is that within five years no child should leave primary school (in England) without the opportunity to get his or her Bikeability training.

There are three Bikeability levels:

1. Level 1 is usually covered in a traffic-free environment. By completing Level 1, bikers will be able to demonstrate the skills and understanding to be able to make a trip and undertake activities safely in a motor traffic-free environment and as a prerequisite to a road trip.
2. Level 2 is covered on quiet roads but with real traffic conditions. By completing Level 2 bikers will be able to demonstrate the skills and understanding to make a trip safely to school, work, or leisure on quiet roads.
3. Level 3 is covered on busy roads incorporating real traffic conditions and advanced road features. By completing Level 3 bikers will be able to demonstrate the skills and understanding to make a trip safely to school, work,

or leisure on busy roads and using complex junctions and road features.

Children are encouraged and inspired to achieve all three levels. The Bikeability Award consists of a badge, folder plus booklet, and certificate.

Bikeability is not just about teaching children to ride a bike and equipping them with the necessary skills and knowledge needed to ride safely throughout the rest of their lives. It's also about introducing them to cycling as an everyday activity—an alternative mode of transport, an enjoyable pastime, and a fun form of exercise.

In a phone interview, David Smith, co-founder of the Bicycle Driver Training Institute in Seattle and supporter of the Bikeability Standard, described the program as teaching people biking competency rather than just safety. Participants are taught basic skills, including how and when to use gears, how to look over the shoulder while riding, how to stop quickly, and how to anticipate motorists' reactions to bicyclists. Once these basics have been covered, participants are taken out in traffic to practice.

Smith argues that the Bicycle Rodeos that are commonly done at schools in the U.S. teaches bicycle safety in a parking lot, which is nothing like being in traffic and does not prepare riders to negotiate traffic on the road. He insists that such skills must be practiced on the road before one really becomes comfortable with riding in congested areas. Smith would like to see more comprehensive bikeability proficiency, similar to what is being done in England, taught to students here in the U.S. Smith is implementing a small pilot bikeability program in Seattle that trains adults to ride in traffic.

Keeping Schools Small

In an article titled “Successful School Design for Small Urban Sites,” Dan Gillmore and Andrea McLean described how Seattle Public Schools formed partnerships with the local community to share existing parking facilities. For example, West Seattle High School improved parking at an adjacent church property in exchange for shared parking privileges.

The article “Lowering the Overhead by Raising the Roof and Other Rural Trust Strategies to Reduce the Costs of Your Small School” by Barbara Lawrence argued that larger schools, although considered more cost effective than small schools, incur larger social costs. She provided several strategies for convincing decision makers to build or preserve small schools, including several examples of rural schools that either utilized

community facilities to prevent the need for site expansion or shared their facilities with the community to cut back on costs. The article gives the example of a school in New Hampshire that ran a marketing class in a room in the town general store, and schools that were built in old malls or museums. The article mentioned a school in the Salish Tribe in British Columbia that was used as a community center. It also described a school in Nova Scotia that offered Internet access to the community and a school library in Maine that doubled as a community library.

According to a 2003 article by Barbara Lawrence at the Rural Schools and Community Trust, Oklahoma has policies that encourage the use of other public spaces (such as parks) for school uses.

TDM Efforts at Schools in the Puget Sound Region

In a 2002 report produced by A.V. Moudon at the University of Washington, seven school districts in the Puget Sound region were surveyed regarding TDM programs, including Bellevue, Edmonds, Lake Washington, Monroe, Mukilteo, and Shoreline. Half of the districts had a transportation plan and two-thirds of the districts offered school bus service. Bus service was available to students who lived beyond a mile from school, and many parents thought buses were dangerous. Only one district charged students for parking. Five state colleges were also surveyed, and 80 percent of them offered subsidized transit passes to students. All except one charged for parking, although several of the community colleges charged very low amounts. The report suggested that school districts acknowledge their transportation impacts, develop and promote transportation alternatives, increase coordination among schools and their districts regarding transportation, charge high school students for parking, educate parents about the safety of school buses, limit parent drop-offs and pick-ups around schools, renovate schools rather than build new ones, and share facilities with the community.

Program Challenges

A 2007 report by Green Communities Canada compared federal Safe Routes to Schools programs in the United Kingdom, Australia, New Zealand, and the United States. All programs funded infrastructure improvements as well as education; however, with

different emphases. All programs also allowed for efforts to be tailored at the local level.

Five common challenges identified include the following:

- motivating schools to participate, given competing demands on their time and resources
- consistently measuring key outcomes at a national level (a lot of data are collected regarding number of schools participating, but few are collected on actual outcomes resulting from interventions)
- allowing enough time for a community-based school travel planning approach to develop
- obtaining sufficient funds to cover all program costs
- keeping school travel planning (and program-wide guidelines and materials) simple.

Some common best practices identified in the report include the following:

- the need for ownership by the school community, including the existence of a school champion
- the need for a School Travel Advisor position (although each country has a slightly different name for this role)
- the importance of long-term funding
- the need for a comprehensive approach involving the whole community
- the need for incentives for schools
- the need for a flexible framework that allows links with existing programs
- the need for patience.

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Model Programs

TDM Models Used at Schools

This report provides the Advisory Group with an overview of different types of programs that have been used, or are in use, to reduce SOV usage at schools around the country. They represent a range of potential programs of interest for the next phase of the TDM Strategies for Schools study and, along with the accompanying literature review, provide the basis of discussion for the Advisory Group's first meeting on September 20, 2007.

The programs are organized in the following way:

- Post-Secondary Institutions
- Middle and High School
- Elementary School
- All grades or non-school locations

Programs Implemented at Post-Secondary Schools

Many universities have employed deep discount transit passes and found them to be quite successful in reducing SOV usage. Deep discount transit passes are also commonly referred to as universal access passes or u-passes. Most successful deep discount transit pass programs do not stand alone but are part of a package of TDM offerings. Because so many different implementation models exist, deep discount transit passes are described generally, then the University of Washington's (UW) U-PASS program and the new transit pass program at Western Washington University (WWU) are compared.

Deep Discount Transit Pass Programs provide a defined group of people with unlimited ride transit passes in exchange for some contractual payment to the transit agency for or on behalf of pass users by an employer or other organizing body. Deep discount group pass programs exhibit the following general features:

- *Universal coverage* of members of an identified group – Most often all members of a participating body are included. In some cases, as at the University of Washington, members can opt out of the program. In all cases, there are criteria for qualifying a distinct body.
- *Unlimited ride* – In most programs, participants use validated picture identification cards as passes to board the transit vehicles. Participants are permitted rides on the various types of transit modes offered by the transit provider typically for a whole calendar year.
- *Pricing* – All programs offer deep discount pricing that covers a relatively large number of people as a form of innovative financing. Deep discount prices are as low as 6 percent and as high as 60 percent of the price of the regular monthly pass.
- Many programs offer guaranteed rides home for emergency situations either through the transit operator (as by Denver RTD and Santa Clara VTA) or through the employer (as by the City of Berkeley in collaboration with the local congestion management agency).

University of Washington U-PASS Program

Program Name:	U-PASS
Location:	University of Washington, Seattle, WA
Grade:	Post-secondary
Contact:	David Carr; Assistant Director of Transportation Services; 206-685-1644; dcarr@u.washington.edu Peter Dewey; Former Assistant Director of Transportation Services (interviewee for this memo); 206-616-205; pdewey@u.washington.edu
Implementing Agency:	University of Washington

Description

The U-PASS program has been in existence since 1991 and has proved to be very successful in reducing SOV usage to and from the university. While the key element of the program is a subsidized transit pass for use on all local public transit routes, many other program components provide flexibility and further incentives to stop driving. All elements of the U-PASS program are detailed in Table 5. The U-PASS is optional for

students, but students are automatically charged for the pass and sent it in the mail, so if they do not want it they have to opt out. The U-PASS program was motivated by a desire on behalf of the University to not spend more money building additional parking structures and by an agreement with the City of Seattle as part of the City Comprehensive Plan to maintain traffic levels during peak periods to the 1983 level. The University Administration initiated the program but did get students involved in its development. Because the program has been so successful in increasing ridership, the transit system has increased routes to the university.

A key component of the U-PASS program is its tie-in to parking prices. The UW raised its parking prices dramatically with the introduction of the U-PASS, which spurred people to stop driving alone. Thus, the combination of incentive (subsidized transit passes) and disincentive (expensive parking) pushed people to use alternative modes. Parking fees fund 30 percent of the U-PASS, and student pass holders primarily fund the remainder.

Results

Every year the transportation department at the UW administers a survey to determine how students are getting to school. According to the 2006 U-PASS Annual Report, 33 percent of the campus population drove alone to work before the U-PASS program started, and in 2006, that number dropped to 22 percent. Despite a 22 percent growth in employee and student populations, University-related peak hour traffic remains below 1990 levels. Furthermore, there has been a 41 percent reduction in the number of SOV parking permits issued, and the number of parking spaces used has declined since the program's inception.

Western Washington University Viking Xpress Bus Pass

Program Name:	Viking Xpress Bus Pass
Location:	Western Washington University, Bellingham, WA
Grade:	Post-secondary
Contact:	Carol Berry, WWU Sustainable Transportation Coordinator; 360-650-7960; carol.berry@wwu.edu
Implementing Agency:	Western Washington University

Description

WWU also offers a subsidized transit pass called the Viking Xpress Bus Pass. WWU will shift its pass program from an opt-in to a mandatory structure. WWU students used to have the option to purchase a Viking Xpress Bus Pass for \$30/quarter, but last spring students voted to tax themselves a mandatory \$25 per quarter to provide every student with a free bus pass, plus fund a new late-night shuttle service around town (because the public bus ends at 10:30 PM) and pay for a student position to assist with program management. All students taking over 6 credits will be charged for the pass through their on-line tuition billing and will pick up the pass on campus. Specific details of the full WWU TDM program are provided in Table 5. Other than a few administrative elements, the program is funded entirely by student fees. Parking prices have not been adjusted with the introduction of this program, although parking is quite limited on campus. There are 3,400 parking spaces for 14,400 students and employees, and parking in the adjacent neighborhoods is zoned. Free parking is available at a park-and-ride lot about a mile from campus, and buses run from there every 12 minutes on weekdays during the three primary academic sessions and every 30 minutes on weekends and during the summer. Whatcom Transit is expected to add a few new routes to the school in winter 2007/2008.

The enhanced Viking Xpress Pass was brought about by student initiative.

Students were motivated to expand the program for several reasons:

- to make the pass mandatory to keep the price consistent
- to be able to fund late-night service
- to fund a student transportation coordinator that students could contact
- to improve long-term regional transit connectivity. This program is a way to quantify the number of students using public transit, which could be presented to the state to encourage connections with other transit services

Results

The mandatory Viking Xpress Pass is new, so there is no evaluation of its effectiveness. However, the University of Colorado (CU) in Boulder, which is located in a town similar in size to Bellingham, has had a successful mandatory pass program since 1991. A travel diary of mode splits of the CU program, released in January 1999,

indicated that student bus ridership to campus rose by about 550 percent from 1990 to 1998.³

An evaluation framework has not yet been developed for the new Xpress program, and evaluation has been an ongoing challenge for the TDM programs at WWU, according to Carol Berry, the Sustainable Transportation Coordinator. She says that the methodology used to collect data from year to year has not been consistent and WWU has no way to compare its statistics with other schools. Therefore, they do not have good baseline data to compare with whatever data they collect this year. Berry mentioned that the evaluation tools and assistance in data analysis provided by the state for the CTR program is very helpful to employers. She would like to see some similar evaluation tools and templates available to universities.

³ Poinatte, Francoise; Toor, Will. 2001. "Finding a New Way: Campus Transportation for the 21st Century: CU Boulder Student Bus Pass Program: Joint Planning at Work." University of Colorado Environmental Center. Accessed on July 21, 2007 at:
<http://ecenter.colorado.edu/transportation/buspass_history.html>

Comparison of Deep Discount Transit Passes at Post-Secondary Schools

Table 5: Comparison of UW U-PASS Program with WWU's TDM Program

Program Elements	UW U-PASS Program	WWU TDM Program
Transit Pass Costs	\$44 /qtr for students – opt-out \$61.80/qtr for fac/staff – opt in \$61.80/qtr for temp/hourly employees	\$25/qtr for students – mandatory tax (students pick up pass on campus) \$20/qtr for fac/staff (or \$50/yr)
Parking Costs	SOV permit: \$254/qtr Visitor: \$11 over 4 hrs Reduced cost for carpool and vanpool	Permit \$71-82/qtr Visitor: \$9.24 for over 4 hrs Reduced cost for full-time carpool and vanpool permits
Transit Service	Full fare coverage on Metro, Community Transit, Sound Transit, Sounder	Full fare coverage on WTA with Xpress Pass
Circulation to the School	Metro increased routes to UW	WTA will increase routes this winter
Shuttle Service	Free Night Ride Shuttle; Health Science Shuttle	On-campus shuttle, shuttle to transit center (WTA public service), Late night shuttle for WWU students only (new in Fall 07)
Carpool	Parking discounts for carpoolers; rideshare matching service	Parking discounts for carpoolers; rideshare matching service
Vanpool	Subsidized vanpool fares	No subsidy
Flexcar	Discount rates on Flexcar	None
Ridematch	Regional Ridematch Service	Regional Ridematch Service
Bicycle	Bicycle parking; bike lockers; registration	Bicycle parking; registration; bike lockers
Reimbursed Ride Home	For faculty/staff	For faculty/staff
Commuter Tickets	Limited number of daily use parking cards avail to fac/staff with UPass purchase	Punch cards avail to fac/staff
Merchant Discount	Discounts at businesses	Prizes through regional SmartTrips website
Marketing/Information	Ride in the Rain; website; brochures	Website; brochures; information kiosks
Monitoring/Evaluation	October count; phone and online survey	Have not formulated evaluation strategy for the student program; Biennial CTR survey for the employee program
Student Involvement	Student representation on University Transportation Committee	AS Transportation Advisory Committee; Student representation on Student Transportation Fee Advisory Committee
Student Employment	UPASS hires one grad student to do evaluation; also hire student workers in parking lots	One student employee; temporary student staff for bus pass distribution

Table 6. Success Factors for Deep Discount Transit Passes at Post-Secondary Schools

<i>Deep Discount Transit Passes at Post-Secondary Schools</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Free parking ▪ Not much transit to/from campus ▪ Too many people live too far away ▪ Administration sees free/cheap parking as a recruiting tool ▪ Cost of program 	<ul style="list-style-type: none"> ▪ Control over parking ▪ Expensive parking ▪ Lots of transit to school ▪ Opt-out programs like UW ▪ Ongoing evaluation and reassessment ▪ Combination of TDM strategies offered for flexibility

Programs Implemented at Middle and High Schools

Roosevelt High School “Way to Go” Demonstration Project

Program Name:	Roosevelt High School “Way to Go” Demonstration Project
Location:	Roosevelt High School, Seattle, WA
Grade:	9-12
Contact:	Dave Allen, City of Seattle Department of Transportation, 206-733-9302, david.allen@seattle.gov
Implementing Agency:	City of Seattle

Description

In 1999 the City of Seattle began investigating ways to raise awareness about automobile trip reduction among high school-age students. By the end of 1999, Roosevelt High School was targeted as the site for a pilot project to be carried out by the City of Seattle (the former Strategic Planning Office and Seattle Department of Transportation) in cooperation with the Seattle School District (Resource Conservation/Logistics Office).

The project was designed to accomplish the following:

- test an array of products and services along with educational materials and promotional activities
- determine which of these would successfully raise awareness of transportation choices and create incentives for student/staff actions to reduce automobile trips
- determine whether these changes might reduce parking impacts on surrounding neighborhoods

- allow the most successful elements to be transferable (fully or partially) to other high schools.

The trip reduction demonstration project began during the final six weeks of the 1999-2000 school year and continued throughout the following year, concluding with activities on Campus Day 2001.

Principal funding for the demonstration program was provided through the City of Seattle's Trip Reduction Initiative, with significant in-kind assistance from both the Seattle School District (SSD) and Seattle Metro Transit, as well as other public and retail partners. Taylor Consulting implemented the program. Table 7 describes the “Way to Go” program elements and the different function each of those elements performed.

One program element that rated high on the student transportation survey but was not implemented was priority carpool parking. This was an important incentive for students because parking at Roosevelt is very limited. However, because of liability concerns at the school district and the city regarding youth drivers, no permitting mechanism was agreed upon, and this element was discontinued.

Results

The pilot program produced fairly strong results, according to the Demonstration Project Final Report, provided by the Seattle Department of Transportation. Metro bus use increased and passes were popular. The program resulted in a nearly 200 percent increase in monthly sales of bus passes—from 25 per month to an average of 71 per month. Bus trial students reported using the Metro bus regularly. Seventy-seven percent used it five days a week to get to and from school; 50 percent of parents said their child used Metro frequently for work or recreation; and 85 percent said that the Metro trial was successful. Student awareness and behavior was affected, as 39 percent said the “Way to Go” program made them more aware of the transportation choices available to them. Furthermore, of those who previously drove alone to school, 28 percent said they drove alone less often, and 15 percent said they stopped driving alone. More than 7 percent said they biked or walked more often, 15 percent took Metro more often, and 13 percent took the yellow bus more often. A high percentage of students found the free bus pass more appealing than the yellow bus. Teachers reported that the program did not place an undue burden on their busy teaching schedule.

Table 7: Program Elements of the Roosevelt “Way to Go” Trip Reduction Program

Program Element	Function
A reduced price monthly student Metro pass, which was heavily marketed	Products
Yellow bus service was replaced with free Metro passes for approximately 175 students.	Products
Three new bike racks	Physical Improvements
A free-standing kiosk, created for the lobby, included transportation information. Five articles appeared in issues of the Rider Record (information was distributed to PTSA newsletter), Roosevelt and Ravenna/Bryant neighborhoods, and several articles appeared in the University Herald.	Educational Materials
Spring kick-off - included classroom sessions with introductory materials about trip reduction, including a group transportation quiz. "Factoids" about the activity impacts of automobile use were incorporated at many stages during the year—on the lobby display, in morning PA announcements and on posters around the school.	Educational Materials
Building on SSD's new requirement for high school students to perform community service, a packet of projects and ideas for qualifying Way to Go activities was developed and several students participated to help create educational materials.	Educational Materials
A number of retailers donated products and participated in events.	Marketing and Promotion
Government and non-profit contributed to program events, providing staff, handout items, and free tickets.	Marketing and Promotion
A transportation fair was held in the school cafeteria to kick off the program. Students who signed pledges to travel by bus, bike, walking or ridesharing at least three days each week received free Metro tickets or product vouchers, and one piece of Papa John's pizza. During the six-week period following the Transportation Fair, random rewards were handed out to students arriving by bus or bike, walking, or sharing rides to further strengthen pledge compliance.	Marketing and Promotion
The fall kick-off included introduction of the informational kiosk in the lobby, information over the PA system about free and reduced price bus passes, plus an information table and a student skit at the Freshman assembly. Later in the fall a "Rider Rewards" promotion randomly rewarded bicyclists and those picking up their bus pass with Old Navy and Amazon gift cards and movie passes.	Marketing and Promotion
In February students were asked to participate in a "Factoid Challenge" with the theme "You'll Love the Way to Go in February." Winners were announced on the PA in an attempt to encourage more entries for future weeks.	Marketing and Promotion
The final promotional event focused on bicycling—students were encouraged to bike to school—and the class with the most bicyclists received rewards, presented by City Councilmember Heidi Wills (who arrived by bicycle herself).	Marketing and Promotion

Despite the positive results, the program has been discontinued because of funding shortages and a management decision at the city to spend scarce resources on other priorities. Dave Allen at the City of Seattle mentioned that it is essential to have a champion at the school; otherwise the program will go nowhere, despite any effort put forth by the city. Most schools already have a lot going on and are unwilling to take on a new program.

A similar subsidized bus pass program has been offered to participating schools by Denver’s Regional Transit Department. Students at participating schools may purchase a monthly pass for the local bus and light rail systems for a discounted price on campus. The passes also provide students a 75¢ discount on higher-fare trips, such as Express and Regional Routes.

Table 8. Success Factors for Teen Bus Pass Programs at High Schools

<i>Teen Bus Pass Programs at High Schools</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Schools not on board or willing to take this on ▪ Plenty of free parking ▪ Not much transit to and from schools ▪ Coolness factor of cars ▪ Liability issues around teen carpooling 	<ul style="list-style-type: none"> ▪ Accompanying outreach program ▪ Transit timed and routed to schools ▪ Limited parking ▪ Ability to use bus pass anytime

Off Ramp, Vancouver, B.C.

Program Name:	Off Ramp (Student-led Transportation Club)
Location:	Vancouver, B.C.
Grade:	9-12
Contact:	Deanne LaRoque; Deanne@best.bc.ca
Implementing Agency:	Better Environmentally Sound Transportation (nonprofit)

Description

In 1999, Vancouver’s Better Environmentally Sound Transportation (BEST) began a student-led TDM program called Off Ramp with 15 secondary schools. Off Ramp is a high school program that trains and supports a small club of about a half-dozen

student leaders to reduce the number of car trips made to their school. BEST guides student leaders through some preparatory work to determine the barriers and incentives to sustainable transportation in their school. Together they select from a growing list of activities that raise awareness, reward “good” behavior, and generate opportunities for their peers to get to school by using alternatives to the SOV. Additionally, each student is asked to take the lead on a longer-term initiative, such as fund raising for a bicycle rack. Student leaders are supported with site visits from a local Off Ramp program coordinator.

The program was disseminated to other transportation planners outside of BEST’s jurisdiction through an implementation guidebook, two training workshops, accompaniment to a school in their community to lead a start-up workshop, and telephone and e-mail support from BEST. Part of what is being accomplished is getting high school students to discuss alternative transportation among themselves and to think about it independently from their parents.

Results

BEST does not appear to have any formal evaluation of the program.

Table 9. Success Factors for Off Ramp Program

<i>Off Ramp Program</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Competing demands on student time ▪ Coolness factor of cars ▪ Limited public transit options ▪ Free parking ▪ Students subject to parental decision making 	<ul style="list-style-type: none"> ▪ Prizes - donations from nearby businesses ▪ Emphasis on skill building and leadership for teen leaders ▪ Connection to Student Council important to link with more potential students

Programs Focusing on Elementary and Middle Schools

Washington State Safe Routes to Schools Program

Program Name:	Washington State Safe Routes to Schools Program
Location:	K-8 schools throughout Washington that have received Safe Routes to Schools grants
Grade:	K-8 only
Contact:	Charlotte Claybrooke, WSDOT Safe Routes to Schools Coordinator, 360-705-7302, claybrc@wsdot.wa.gov
Implementing Agency:	WSDOT (administers federal funding); individual schools implement TDM programs

Description

Washington's Safe Routes to Schools program is a framework for implementing TDM strategies that result in more efficient use of transportation resources and reduce SOV usage by increasing the number of children walking and biking to school safely. It is supported by both the Washington State Legislature and the federal government.

In 2005, as part of Engrossed Substitute Senate Bill 6091, the Washington State Legislature made a 16-year funding commitment to support pedestrian and bicycle safety projects, including Safe Routes to Schools. In the same year, the legislature funded ten pilot projects.

Through the 2005 passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Congress allocated \$612 million toward developing the national Safe Routes to Schools program (www.saferoutesinfo.org). The program provides funds to the states to substantially improve the ability of students, primarily from elementary and middle schools, to walk and bicycle to school safely. The program encourages improvements in engineering, education, enforcement, and encouragement.

In 2006, the federal Safe Routes to Schools program was incorporated into the state program. Although Washington State had already implemented a Safe Routes to Schools program independently, the federal program provided an infusion of money, promotional materials, program models, and support.

The state and federal funding is administered through WSDOT, which also provides technical assistance to schools to promote walking and biking. Safe Routes to Schools technical assistance includes help with walk route plans, transportation safety audits, presentations to councils and committees, community organizing, and design guidance. The WSDOT also provides a Transportation Enhancement Grant to fund the Washington Center for Safe Routes to School. The Center provides a website (www.saferoutes-wa.org) that serves as part of the outreach component of Safe Routes to Schools in Washington. The site includes some curriculum and activity ideas, design standards, and useful downloads for different stakeholders.

The Safe Routes to Schools program provided Washington schools with \$1.35 million in grants in 2005, \$2.95 million in 2006, and \$6.99 million for the 2007-09 biennium. The grants are provided to applications that include elements of engineering, education, encouragement, and enforcement for walking and biking. Because of a federal requirement, 70 percent of the funds must go toward engineering improvements. Safe Routes to Schools grants focus on funding projects within 2 miles of K-8 schools. The projects provide children a safe, healthy alternative to riding the bus or being driven to school.

The Safe Routes to Schools projects that have been given priority have had the following components:

- Engineering – already does or will provide substantial improvements to reduce potential pedestrian and bicycle conflicts with motor vehicle traffic, reduce traffic volume around schools, and/or establish safer and fully accessible crossings, walkways, trails, or bikeways.
- Education – already does or will provide substantial educational opportunities to teach children about bicycling and walking safety skills, the health effects of walking and biking, the impact to the environment, and the broad range of transportation choices and provide substantial encouragement activities to help increase the number of children walking and biking to school safely.
- Enforcement – already does or will provide substantial enforcement efforts to address traffic safety and help to increase the number of children walking and

- Implementation – projects that can be implemented quickly will rank higher

Table 10 shows three examples of Safe Routes to Schools projects that were funded in the 2006 grant cycle.

Table 10. Safe Routes to Schools Projects Funded in 2006

<p>Seattle Public Schools Sanislo Elementary Total Grant Amount: \$114,585</p> <p>Engineering improvements include curb repair and signing. Education curriculum includes parent outreach, school events, safety presentations, art contests, bicycle education and pedometer challenge. Enforcement efforts include photo-radar speed enforcement.</p>	
<p>Mt. Vernon School District New and Connecting Sidewalks – Centennial Elementary and LaVenture Middle School Total Grant Amount: \$190,000</p> <p>Engineering improvements include construction of sidewalk, curb, and pedestrian-activated crosswalk warning system. Education curriculum includes walking and biking as a safe and healthy alternative and a pedestrian awareness campaign. Enforcement efforts include installation of solar-powered speed signs.</p>	
<p>Bellevue School District Stevenson Elementary School Total Grant Amount: \$132,000</p> <p>Engineering improvements include crosswalks and signage. Education curriculum includes two programs to raise awareness about pedestrian safety. Enforcement efforts to address school zone speed limits.</p>	

For a complete list of the 2005 and 2006 projects go to http://www.wsdot.wa.gov/bike/Safe_Routes_Projects.htm and http://www.wsdot.wa.gov/bike/2006Safe_Routes_Projects.htm. For a list of 2007 projects approved by the legislature, go to <http://www.wsdot.wa.gov/TA/ProgMgt/Grants/LegislatureReport.pdf>.

Results

Since its inception in 2004, Washington's Safe Routes to Schools program has funded 50 projects, which will reach approximately 15,000 students. Preliminary results from the pilot projects reflect an increase in the number of children walking and biking to school by approximately 40 percent. Evaluation results for projects funded in 2006 and after will be reported in the National Transportation Pooled Research study, entitled Safe Routes to Schools Statewide Mobility Assessment, which will be complete in 2009.

Marin County Safe Routes to Schools Program

Program Name:	Marin County Safe Routes to Schools Program
Location:	K-8 schools throughout Marin County, CA
Grade:	K-8 Only
Contact:	Wendi Kallins, 415-488-4101, wendi@marinbike.org
Implementing Agency:	Transportation Authority of Marin (administers Federal funding)

Description

The Marin County Safe Routes to Schools program offers an example of both the types of activities that can be implemented under the umbrella of the national Safe Routes to Schools program and the organizational structure at the county and school district levels. The Marin program, originated in 2000, uses a number of TDM strategies to decrease SOV trips to schools. Centrally coordinated by the Marin Transportation Authority, the program relies heavily on parents, teachers, and community volunteers to carry out its range of activities, which fall into the following five elements coined by the national program:

- Education – Classroom lessons teach children pedestrian safety skills by using Safe Routes to Schools curriculum, generally taught during P.E.
- Engineering – The program’s licensed traffic engineer assists schools in developing a plan to improve infrastructure for walking and biking.
- Encouragement – Events such as Walk/Bike to School Days, contests including “frequent rider miles,” and promotional materials are incentives that encourage children and parents to try walking and biking. The program also coordinates and supports volunteer organizers in attempting to establish walking school buses,

bike trains, or carpools.

- Enforcement – Police officers and crossing guards participate throughout the Safe Routes process to encourage safe travel through the community.
- Evaluation – Program participation is monitored through an annual mode shift analysis and regular parent surveys.

The Marin program has grown five-fold since its inception in 2000, expanding from 3,500 students in nine schools to 18,470 students in 45 schools in 2005. Schools participate at different levels, based on the availability of staff and volunteers and on the school's willingness to incorporate Safe Routes lessons into their curricula. A 2003 report described the program as having four paid staff, including a program director, a person who supervised and promoted the program, an educator who developed curriculum and oversaw classroom education, and a traffic engineer who assisted in identifying and creating safe routes for students. A private consulting firm oversaw and evaluated the program. The program requires each school to identify a volunteer team leader prior to enrolling. In 2004 Safe Routes to Schools became a program of Marin County's Public Works Department, funded by the Bay Area Air Quality Management District. This countywide program became a project of the Transportation Authority of Marin in 2005, with ongoing funding available through the recently passed Measure A sales tax, which provides dedicated funding to the Safe Routes to Schools program as well as complementary transportation projects. The project has also received federal Safe Routes to Schools dollars for infrastructure improvements.

Results

According to a 2003 evaluation of the program by Catherine Staunton, et al. titled "Promoting Safe Walking and Biking to School: The Marin County Success Story," the program resulted in a decrease in SOV trips by 39 percent during its first two years.⁴

As described in "Marin County Safe Routes to Schools: Evaluation and Recommendations 2005-2006," a mode shift analysis, consisting of a "before" and "after" in-class student survey conducted by teachers at participating schools, showed that the program continued to make significant progress in reducing the number of

⁴ Staunton, Catherine; Hubsmith, Deb; Kallins Wendi. 2003. "Promoting Safe Walking and Biking to School: The Marin County Success Story." *American Journal of Public Health*. 93 (9): 1431-1435.

automobile trips that dropped off and picked up students from school during the 2004-05 school year:⁵

- a reduction of 13 percent in single student vehicle trips (42 percent in fall 2004 in comparison to 55 percent in spring 2005)
- increases of 6 percent in walking, 2 percent in biking, and 7 percent in carpooling in spring 2005, as compared to fall 2004

The report also included a parent survey representing 228 parents from 31 participating schools and 53 parents from 20 non-participating schools. The parent survey showed a substantially higher rate of bicycle and walk commuting, and a lower rate of drive-alone commuting, at participating versus non-participating schools. Fourteen percent of respondents credited Safe Routes to Schools as the reason they switched to an alternative mode, which is roughly consistent with previous data. The survey revealed that adults found the program’s influence in decreasing congestion around schools to be the greatest value of the program.

Table 11. Success Factors for National/State Safe Routes to Schools Program

<i>National/State Safe Routes to Schools Program</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Distance ▪ Lack of sidewalks and infrastructure ▪ Parents fear of crime ▪ Limited parent involvement ▪ Limited staff or resources at school ▪ Human Subjects Review requirements block data collection ▪ Fragmented evaluation framework ▪ Heavy backpacks ▪ Interpretation of school acreage guidelines as requirements 	<ul style="list-style-type: none"> ▪ Partnerships ▪ Incentives for schools to get involved ▪ Parental involvement ▪ Lots of safe paths ▪ Schools close to where kids live ▪ Steady funding ▪ Means of communicating with parents (newsletter, listserv) ▪ Flexibility for schools to tailor program ▪ Safe Routes to Schools coordinator at schools ▪ Engineering improvements serve as incentive for school to participate in other elements of the Safe Routes to Schools program

⁵ Transportation Authority of Marin. 2006. “Marin County Safe Routes to School Program Evaluation and Recommendation 2005-2006.” Accessed on July 20, 2007 at <<http://www.tam.ca.gov/view.php?id=34>>.

City of Bellevue Trips to School Program

Program Name:	City of Bellevue Trips to School Program
Location:	Nine elementary schools in Bellevue
Grade:	K-5 Only
Contact:	Francine Johnson, Bellevue Transportation Outreach Coordinator, 425-452-6967
Implementing Agency:	City of Bellevue

Description

The City of Bellevue was one of the first cities to undertake a comprehensive alternative transit program for schools. In 2005 the city launched a two-year pilot program in cooperation with the Bellevue School District and participating elementary schools. City staff developed a toolbox of program elements and then worked with each participating school to develop and implement a customized program that met the schools' unique needs and interests for reducing traffic congestion. School programs were kicked off during an October walk to school and included one or more of the following program elements: information material for parents, educational activities and events for students, walking school bus coordination, incentive programs that required students to complete a certain number of trips for a prize, and assistance applying for grants to enhance pedestrian safety at the schools. Each school had to provide a volunteer to help lead the program at that school, but city staff created the resources, conducted the assemblies, and set up occasional promotional booths at the schools. Nine of the 15 schools in the district participated.

The city tried to encourage carpooling by coordinating sign-up sheets at PTA meetings and events, but very few parents were interested. The city also attempted to have school directories sorted by neighborhoods to heighten awareness of students living close to one another. However, this effort was never completed because of concerns that the city's use of these directories would result in their being considered public records. One other barrier that was identified with regards to implementing elementary school-level carpools was the coordination of car seats for each child.

Results

The first year resulted in a 1 to 2 percent increase in students walking and biking to school, according to Francine Johnson, Bellevue Transportation Outreach Coordinator.

The second year resulted in an average of 4 percent of the total student population reporting a reduction in “drive alone” trips to school. The original goal for the pilot program was to have city staff initially lead the program but, over the two-year pilot, transition to school staff or volunteers leading their individual programs. However, at the end of the pilot program it was evident that continuing the program would require a large amount of dedicated city staff resources. The city decided not to continue the program because staff resources were needed on other projects.

The City of Bellevue found that the schools had so much on their plates that they were reluctant to take on new programs. It was also difficult to find volunteers who could complete the whole year, and with so much turnover at schools, progress was often lost from one year to the next. Johnson felt that to be successful, the program really needed to have someone overseeing it from year to year and encouraging the schools to take on the program. The City of Bellevue program was not able to offer engineering improvements as an incentive for schools to participate in other program elements such as education, enforcement, and encouragement with the exception of two Safe Routes to Schools grants that included the program as the educational component.

Table 12. Success Factors for City of Bellevue Trips to School Program

<i>City of Bellevue Trips to School Program</i>	
Barriers to Success	Factors Success
<ul style="list-style-type: none"> ▪ Limited parent involvement ▪ Limited staff or resources at schools ▪ Lack of a champion at each school ▪ Year to year ownership of program 	<ul style="list-style-type: none"> ▪ A champion at each school ▪ Incentives for schools to get involved ▪ Parental involvement ▪ Schools close to where kids live ▪ Flexibility to tailor program

Programs Implemented for All Grades or at Non-School Locations

School Pool, Contra Costa County, California

Program Name:	School Pool
Location:	Schools throughout Contra Costa County, CA
Grade:	K-12, plus college
Contact:	Corinne Dutra-Roberts, Transportation Analyst, 511 Contra Costa, 925-407-0354, cordutra@comcast.net
Implementing Agency:	Central Office of the 511 Contra Costa program (formerly implemented by the Contra Costa Commute Alternative Network)

Description

In 2002 the Contra Costa County School Pool pilot program was implemented with the goals of providing parents with information on neighboring students who were interested in carpooling to and from school and encouraging parents to establish a carpool. Carpooling was voluntary, and no financial incentive was offered to the parents. Carpool ridematch lists were provided to parents with students attending the same school to encourage carpooling. The program was promoted among residents who had children in all public and private schools throughout the county (kindergarten through college). The SchoolPool program was administered by staff at the Contra Costa Commute Alternative Network (CC CAN).

For the 2002 school year, carpool ridematch forms were sent directly to 150 participating schools and, in turn, were distributed in fall registration packets to over 157,000 school children. Additional program outreach efforts included presentations to Parent Teacher Associations (PTAs) and school administration.

As ridematch applications were received, rideshare matches within the same district were found and sent within three days to the applicant. For the 2002 school year, approximately four ridematch lists were sent to each parent during the course of the first three months of the school year. Additional ridematch lists were sent throughout the year as new parents moved into the school area, or as parents' commute patterns changed.

Parents who were unable to find a carpool partner were encouraged to have their children try transit instead of driving. To encourage participation, a \$20 bus pass was

provided for the student's use. CC CAN Staff worked with county bus operators to develop bus schedule brochures for each school district. In turn the brochures were distributed with free tickets so that parents could see and experience which routes and schedules serviced their schools.

SchoolPool required a full-time employee for 6 months or a half-time employee on an annual basis. The most intense time was between April and October when registration forms were generated and distributed and most of the outreach occurred. The total program cost for SchoolPool during the 2002 school year was \$95,000, and the total number of unique rideshare requests was 536.

Results

According to an interview with Corinne Dutra-Roberts, a Transportation Analyst with 511 Contra Costa, the ridematching portion of the SchoolPool program was discontinued, as the implementing agency felt that it was not as effective as anticipated and wanted to focus on other priorities. One of the problems described by Dutra-Roberts was that more people wanted rides than could give rides. Furthermore, many participants seemed more motivated to participate to obtain additional child care than for shared transportation to relieve congestion or protect the environment. Because of differences in parental work schedules, parents would often need to drop their child off early or pick them up late from the carpooler's house. This was a significant barrier because parents who were willing to carpool often were not willing to also babysit before and after the ride.

Dutra-Roberts felt that carpooling worked best in wealthier communities where one parent did not work and would be able to have a flexible schedule. It also worked better with private schools to which children came from long distances. Dutra-Roberts was also of the opinion that parents were more resistant to getting involved in something that was agency-driven than a program that was school- or parent-driven. Carpooling was quite successful at three high schools *that provided priority parking to carpoolers*. All of these schools had very constrained parking. The key to making this work was ongoing regulation of the carpool parking lot so that student drivers could not cheat. Carpoolers had to get a parking permit and list the names of their fellow carpoolers, and a school staff person monitored the parking lot every morning.

Table 13. Success Factors for School Pool Program, California

<i>School Pool Program</i>	
Barriers to Success	Factors Success
<ul style="list-style-type: none"> ▪ Opt-in rather than opt-out for information sharing ▪ Too dependent on parents to organize ▪ Unfamiliarity with drivers ▪ Busy working parents needed childcare ▪ High school students can drive themselves ▪ High school students can't drive with other students in the car for the first six months ▪ School district reluctant to share directories with other agencies (i.e. City of Bellevue) 	<ul style="list-style-type: none"> ▪ Well organized by the school ▪ Way to get to know parent driver ▪ Priority parking for carpoolers ▪ Closely monitoring priority parking for carpoolers

Bikeability Award, England

Program Name:	Bikeability Award
Location:	England
Grade:	K-12 (but not being taught at schools)
Contact:	Bikeability Inquiry Line: 01234 848451; www.bikeability.org.uk
Implementing Agency:	Local Contact: David Smith, Co-founder of Bicycle Driver Training Institute in Seattle (based on England's Bikeability Standards), 206-325-6551, dlsmith@ix.netcom.com National Government in England

Description

In spring 2007, a new national program was rolled out across England enabling thousands of children the chance to get a Bikeability Award. Bikeability is the Cycling Proficiency Test designed to give children the skills and confidence to ride their bikes on busy roads. To get their Bikeability Award, children (and adults) have to be instructed on how to ride their bikes to the government-approved National Standard for Cycle Training, which sets out the training and skills essential for making cycling trips in today's road conditions. The standard was developed by over 20 organizations and is

maintained by the professional body for cycle training, the Cycle Training Standards Board. There are certified trainers all over England, and families can find them via the Bikeability website, www.bikeability.org.uk. Cycling England is the national government body that gives grants to local authorities that deliver national standard cycle training. The program is not currently implemented through schools.

By establishing a National Standard, the British government is setting out a nationwide uniform program of formal training that will reassure parents that young people wanting to cycle have been instructed in the essential skills and procedures. The aim is to increase the numbers of children who receive quality cycle training by qualified instructors and, by 2008/2009, to ensure that as many as half of year-six pupils be trained through schemes awarding Bikeability. The ultimate vision is that within five years no child should leave primary school (in England) without the opportunity to get his or her Bikeability training.

There are three Bikeability levels:

1. Level 1 is usually covered in a traffic free environment. By completing Level 1, bikers will be able to demonstrate the skills and understanding to make a trip and undertake activities safely in a motor traffic-free environment and as a prerequisite to a road trip.
2. Level 2 is covered on quiet roads but with real traffic conditions. By completing Level 2 bikers will be able to demonstrate the skills and understanding to make a trip safely to school, work, or leisure on quiet roads.
3. Level 3 is covered on busy roads incorporating real traffic conditions and advanced road features. By completing Level 3 bikers will be able demonstrate the skills and understanding to make a trip safely to school, work, or leisure on busy roads and using complex junctions and road features.

Children are encouraged and inspired to achieve all three levels. The Bikeability Award consists of a badge, folder plus booklet, and certificate.

Bikeability is not just about teaching children to ride a bike and equipping them with the necessary skills and knowledge needed to ride safely throughout the rest of their lives. It's also about introducing them to cycling as an everyday activity—an alternative mode of transport, an enjoyable pastime, and a fun form of exercise.

In a phone interview, David Smith, co-founder of the Bicycle Driver Training Institute in Seattle and supporter of the Bikeability Standard, described the Bikeability program as teaching people biking competency rather than just safety. Participants are taught basic skills including how and when to use gears, how to look over the shoulder while riding, how to stop quickly, and how to anticipate motorists' reactions to bicyclists. Once these basics have been covered, participants are taken out in traffic to practice.

Smith argues that the Bicycle Rodeos that are commonly done at schools in the U.S. teaches bicycle safety in a parking lot, which is nothing like being in traffic and does not prepare riders to negotiate traffic on the road. He insists that such skills must be practiced on the road before one really becomes comfortable with riding in congested areas. Smith would like to see more comprehensive bikeability proficiency, similar to what is being done in England, taught to students here in the U.S. Smith is implementing a small pilot bikeability program in Seattle that trains adults to ride in traffic.

Results

The program just officially launched in spring 2007, so extensive evaluation has not yet been done; however, according to the Bikeability website, some evaluation was done during the gear-up phase. In September 2006, Cycling England launched Bikeability (the new cycling proficiency) as the award scheme for cyclists trained to the National Cycle Training Standard. The launch marked the start of the gearing-up phase involving more than 5,000 children across eight regions. During this period nearly 10,000 badges were awarded. The media coverage of September's announcement was considerable.⁶

Extensive in-depth interviews were undertaken with children, parents, teachers, scheme organizers, providers, and instructors during this period. From this research, materials and the method of their distribution were further improved, and the research indicated that the following:

- 83 percent of training organizers and instructors saw an increase in the number of children cycling to school.
- 67 percent of children were cycling more after taking part.

⁶ www.bikeability.org.uk/

- 71 percent of teachers had more confidence in children cycling on roads post Bikeability training.
- 60 percent of parents felt more confident with their children cycling on the roads.
- All of the teachers and parents surveyed agreed that Bikeability training is necessary for today's children.

Table 14. Success Factors for Bikeability Training

<i>Bikeability Training</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Getting the trainers trained ▪ Recruiting participants ▪ Not being in good enough shape ▪ Parental concern for child's safety 	<ul style="list-style-type: none"> ▪ Outreach ▪ Lots of trainers ▪ Practicing in traffic ▪ Regular practice

Parking Cash-Out, California

Program Name:	Parking Cash-Out
Location:	Various businesses in California
Grade:	Non-school
Contact:	Jeff Weir, jweir@arb.ca.gov; 916-445-0098
Implementing Agency:	Air Resources Board of California

Description

The California Parking Cash-Out law (Chapter 554, Statutes of 1992) requires employers of 50 or more persons in regions that do not meet the state's clean air standards to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space. However, it only applies to parking spaces that employers rent from a third party. The law allows for quite a bit of flexibility, enabling employers to offer commuters any of the following:

- no parking subsidy
- a parking subsidy only for carpools
- the choice between a parking subsidy or its cash value
- the choice between a parking subsidy or more than its cash value
- a commuting allowance that can be spent on any form of commuting.

Results

In a 1997 study titled “Evaluating the Effects of Cashing-out Employer Paid Parking: Eight Case Studies,” Donald Shoup compared seven employers in the greater Los Angeles area who complied with the 1992 California Parking Cash-Out law and one employer who did not comply with the law.⁷ All firms offered an equal level of subsidy to all employees. For the 1,694 employees of the eight firms, the number of solo drivers to work fell by 17 percent after cashing out. The number of carpoolers increased by 64 percent; the number of transit riders increased by 50 percent; and the number who walked or biked to work increased by 39 percent. Vehicle-miles traveled for commuting to the eight firms fell by 12 percent. Carbon dioxide emissions from commuting fell by 367 kilograms per employee per year. The eight firms’ spending for commuting subsidies rose by \$2 per employee per month because payments in lieu of parking increased slightly more than spending for parking declined. Federal and state income tax revenues increased by \$65 per employee per year because many commuters voluntarily traded tax-exempt parking subsidies for taxable cash. Employers praised the cash option for its simplicity and fairness and said that it helped to recruit and retain employees.

A 2002 report by the California Legislative Analyst Office (LAO) found that the law is rarely enforced because it does not require the Air Resources Board to do any outreach or monitoring.⁸ Even if it were enforced, the law is so narrowly written that the LAO concluded it would only apply to 3 percent of parking spaces in the state because employer-owned spots are exempt (it only applies to leased parking spots). The LAO estimated that between 10 and 20 percent of employees would participate in the program if it were offered to them. The report cited literature that found that free parking significantly increases the rate of solo driving. The LAO report concluded that the Cash-Out program is worthwhile because it is easy to implement, has good participation rates, and is a much less costly way to cut emissions and congestion than light rail and other

⁷ Shoup, Donald. 1997. “Evaluating the effects of cashing out employer-paid parking: Eight case studies.” *Transport Policy* 4(4): 201-216.

⁸ California Legislative Analyst’s Office. 2002. “A Commuter’s Dilemma: Extra Cash or Free Parking?”

capital-intensive projects. However, the report suggested that more outreach and periodic monitoring should be done to increase the law’s impact and effectiveness.

Table 15. Success Factors for Cash-Out for Parking

<i>Cash-Out for Parking</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Lack of transit or other options ▪ Free parking on the street nearby ▪ Not all employers are required to do it (company sees free parking as a recruiting tool) 	<ul style="list-style-type: none"> ▪ All firms required to do it ▪ Public transit options are available ▪ Outreach ▪ Monitoring

School Bus/Public Transit Coordination

Program Name:	School Bus/Public Transit Coordination
Location:	Rural Areas
Grade:	K-12
Contact:	None
Implementing Agency:	Various – See table below

Description

The dearth of public transportation options in rural areas has led to transportation coordination between school districts and public transportation agencies in many rural communities. According to an extensive 1999 Federal Transit Administration (FTA) report⁹ on the subject, in some communities school districts are transporting students – particularly in high school – via public transit. In other areas, the general public is being transported on school buses when the buses are not in use for student transportation. And, in a few communities, students and the general public are riding on school buses at the same time.

Efforts employed by schools and public transit agencies to coordinate their respective transportation services are not limited to operations; some school districts, public transportation agencies, and even Head Start transportation programs have

⁹ Federal Transit Administration. 1999. “Integrating School Bus and Public Transportation Services in Non-Urban Communities.” Report 56. Transit Cooperative Research Program.

coordinated support services such as maintenance and fueling. In addition, the consolidation of administrative staffs – if not the entire programs – has been achieved in a few areas and is being considered in others.

A survey conducted as part of the FTA report found that of the 80 sites coordinating service, the most popular type of coordination involved placing regular education students, Head Start, and/or agency clients on public transit vehicles. Only 30 communities used school buses to coordinate service. Of these, 10 did and 20 did not co-mingle the public with students. The majority of sites that coordinated service mentioned that the financial savings were notable, particularly for those entities involved in formal agreements.

Table 16 presents the thirteen case studies examined in the FTA report and provides examples of the different ways to achieve transportation coordination in a rural area.

Analysis

Because every community is different and there is no one-size-fits-all method of coordination, the FTA report established a framework for assessing the key factors that affect the coordination/integration of student transportation service and public transportation services in non-urban areas. These key factors include the following:

- **Lack of public transportation services** – Approximately 38 percent of the nation does not have access to public transit, and one in four rural households does not have an automobile.
- **Existence of human service agency transportation** – In many rural areas, human service transportation is the only transportation available besides school buses. Many opportunities exist for coordination between the two systems – some communities have successfully shared vehicles and routes, while others only share maintenance facilities.

Table 16. Ways to Achieve Transportation Coordination in a Rural Area

Case Study Sites	Summary
<p>Bonifay, FL Tri-County Community Council</p>	<p>Head Start participants transported on regular school bus routes. High school students transported on Head Start routes. Coordinating agency provides vehicles to schools for field trips. School Districts provide idle school buses to coordinating agency for group trips.</p>
<p>Cheraw, SC Chesterfield County Coordinating Council</p>	<p>School employees, school volunteers, and parents permitted to ride on regular school bus routes. Coordinating agency has requested a "proviso" to allow the transportation of general public on regular school bus routes on a space-available basis during a one-year demonstration period.</p>
<p>Cottonwood, AZ Cottonwood Area Transit System</p>	<p>School District transports some school children on general public Dial-A-Ride service. Families use Dial-A-Ride service to transport school children to after-school programs. Head Start transports pre-school participants on general public Dial-A-Ride service.</p>
<p>Decorah, IA Northeast Regional Transit System</p>	<p>School District transports some school children on general public Dial-A-Ride service. Families use general public Dial-A-Ride service to transport school children to and from school. Head Start transports pre-school participants on regular school bus routes and Dial-A-Ride service.</p>
<p>Gillette, WY Campbell County School District</p>	<p>Community groups "charter" School District yellow school buses and drivers for group trips when school buses are not needed for student transportation.</p>
<p>Glendale, OR Glendale-Azalea Skills Center</p>	<p>Coordinating agency arranges for JOBS participants to be transported to training site on regular school bus routes.</p>
<p>Idlewild, MI Yates Dial-A-Ride</p>	<p>School District uses public transportation provider, operating modified school bus vehicles, to transport school children to and from school. Services are fully integrated: school children ride along with general public riders.</p>
<p>Kalispell, MT Eagle Transit</p>	<p>School District uses public transportation service to transport special needs children to/from school. Families within walking distance use public transportation "tripper" service to transport school children.</p>
<p>Minot, ND Minot City Bus</p>	<p>School District uses public transportation provider to transport school children to and from school. Morning and afternoon routes are oriented to student transportation but are open to the public; services are fully integrated; school children ride along with general public riders.</p>
<p>Nampa, ID Treasure Valley Transit</p>	<p>Head Start agency took the lead in establishing public transportation property, also providing school buses, drivers, mechanics, and staff for system during start-up. Private school bus carrier provided maintenance and back-up vehicles and coordinated training during start-up. School District and families use public transportation service to transport some school children to/from school.</p>
<p>Selkirk, WA Selkirk Consolidated School District</p>	<p>School District took lead in establishing and operating a general public shuttle, utilizing a refitted, accessible school bus. The shuttle service connects schools, medical facilities, etc., in three towns and serves as an intra-district shuttle for students and a community transit system for the general public. Students and the general public ride on vehicles at the same time.</p>
<p>Thousand Palms, CA SunLine Transit Agency</p>	<p>School District used public transit service to transport high school students to/from school on a demonstration basis and continues to use public transit service to transport group trips. Families opt to transport high school and middle school students on public transit service. After-school programs use public transit to transport elementary school students from school to after-school program sites.</p>
<p>Trumbull Co., OH Trumbull Area Coordinated Transportation</p>	<p>Private school bus carrier assisted County in establishing county-wide coordinated system and managed, operated, and provided school bus vehicles to the system during start-up phase. The system currently focuses on the coordination of human service agency paratransit trips; plans include expanding service to provide transit and Dial-A-Ride service to the general public by 2000.</p>

- **Funding issues** – Transporting students on public transit vehicles is most effective when "unused capacity" on existing routes is used, resulting in a long-run incremental cost to the taxpayer that is virtually zero. Similarly, transporting the public on school buses is most effective when there is available capacity. Financing is a complex issue, and agencies that consider coordination of student transportation and other passenger transportation services must find similar frameworks for evaluating the cost impacts of coordinated activities.
- **Operational issues** – By understanding how student and public transportation services are delivered, including differences and similarities in management and operational processes such as service standards, vehicle standards and design criteria, governance, legislative and regulatory requirements, and costs, we can better identify opportunities for enhanced coordination of these services.
- **Legal and regulatory issues** –A number of regulatory barriers inhibit the coordination of services. While most of these regulatory constraints pertain to the physical design of buses used to transport school children, state laws around school bus riders, federal law that prohibits funding to specific types of school transportation and ADA public transportation standards also pose challenges to coordination.
- **Safety issues** – Prospective changes in policies and procedures that may stem from coordination planning are often perceived as a potential compromise to the safety of the community's school-age children.

In addition to pulling out the key factors that affect a coordination program, the FTA report found a number of consistencies throughout the thirteen case studies listed in Table 16:

- **Broad-Based Community Support is Crucial.** Broad-based community support is crucial for coordination efforts to be successful. Translating this community support into political support is important, and strong leadership is key.
- **Costs Play an Important Role.** Cost savings depend upon the point of view of the entity affected, including the school district, public transit agency, human service agency, or parents. The coordination effort needs to make good business sense to at least one of these entities.

- **Safety Is an Ongoing Issue.** Safety is an ongoing issue with every kind of coordination effort, although safety concerns are very community-specific. In some areas, co-mingling concerns have seriously thwarted coordination, while in other communities co-mingling is not an issue at all.
- **Transitions Are a Challenge.** The transition from separate services to integrated services is a challenge, although agencies noted that attitudes were often more of an issue than the reality. The number one barrier noted was the reluctance of the student transportation practitioners to participate in coordination activities.
- **Legal and Regulatory Issues Shape Coordination Efforts.** The legal and regulatory environment plays a significant role in how the coordination project takes shape. The environments vary considerably from state to state.
- **Head Start Plays a Major Role.** The needs of Head Start programs also seem to have played an integral role in a number of these efforts, either by drawing the school district and public transit providers to the same table to address Head Start transportation needs or, in one case, by actually lending Head Start vehicles to establish a public transit system in the area.
- **Coordination Works.** Coordination works, particularly in rural and non-urban areas. It is effective at improving mobility and saving communities money.

Table 17. Success Factors for School Bus/Public Transit Coordination

<i>School Bus/Public Transit Coordination</i>	
Barriers to Success	Factors for Success
<ul style="list-style-type: none"> ▪ Community concern about co-mingling ▪ Regulations based on separation of different types of transportation services ▪ Administrative resistance ▪ Turfism ▪ Vehicle designed for only one use ▪ Strong adherence to industry norms 	<ul style="list-style-type: none"> ▪ Broad-based community support ▪ Cost savings – needs to make good business sense ▪ Coordination activities are tailored to local circumstances (not generic) ▪ Limited public transportation options ▪ Rural area

TDM Strategies for Schools: 2008 Programs of Interest

The Washington State Legislature asked this study to identify programs or interest that could reduce auto congestion around schools. The term ‘pilot’ in this report includes both programs that currently exist and those planned for implementation in 2008 in Washington State. Therefore, they are referred to as programs of interest rather than true pilots. We have identified programs from which we hope to learn about structure, strategy, results, replicability, and relationship to policies and have grouped them into five categories: elementary schools, high schools/middle schools, colleges and universities, all school levels, and state and local policies. Each program is described briefly and linked to the broader model it represents, its objectives, its underlying theory of change, and what we think we can learn to inform other implementers and policy makers. Programs of interest include schools in big, medium, and small cities, as well as suburban and rural areas.

Elementary Schools						
Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change*	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>GO! Project: The Go! Project is funded by the Washington State Department of Transportation Safe Routes to School Program -. The program seeks to address the unique needs of each of the three schools involved in the project: Sanislo Elementary School, West Seattle Elementary School, and Denny Middle School. Each school is designing its own program through a community involvement process based on the five E's: Engineering, Education/Encouragement, Enforcement and Evaluation. Preliminary planning is complete, and these schools are in the initial stages of the program. Sanislo is the farthest along, and some education and enforcement programs have been started there, as well as some preliminary planning and permitting for the environmental changes that it seeks. Sanislo just completed IWALK week, its kick-off event, in which students, parents, and family members met up along four different walking routes and filled out walking logs to record their walking, biking, or bus trips to and from school each day. Some other ideas for the Go! Project at Sanislo this year include carpools, improvements to sidewalks, and a month-long walking event in the spring. These programs will be school-wide, and the percentage of kids walking will be monitored. Denny Middle School might also have a bike club for a sub-group of the population.</p>	<p>Comprehensive Family and School District Program (Marin County, Cal., and in Seattle)</p>	<p>Increase school-wide percentage of kids walking (goal is 25%) and carpooling to school based on transportation counts, decrease percentage of kids who arrive at schools by single occupancy vehicle (currently 72% at Sanislo—no set standards at this point).</p>	<p>Emphasizing walking in schools will create excitement among students and behavioral changes. Parental say in the program’s design will increase participation and appropriateness for the school. Together these will reduce SOV traffic at schools.</p>	<p>Feet First, an advocacy and action group building walkable communities; Contact: Jen Cole (nonprofit organization)</p>	<p>Urban-Big City, Suburban</p>	<p>Learn the differences between strategies at elementary and middle schools serving families of various socioeconomic status.</p>

* Theory of Change, as described by Carol Weiss ('Evaluation: Methods for Studying Programs and Policies,' 1998), refers to the how and why an initiative works. It encompasses the assumptions underlying steps toward a goal, linking activities and outcomes. Weiss hypothesized that program managers are often unclear about how change will take place as a result of their program. She proposed that being specific about the theories of change guiding an initiative would improve evaluation of an initiative and improve the ability to assign responsibility for and explain outcomes.

Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change*	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>Mt. Vernon Safe Routes to School/Walking School Bus: The City of Mt. Vernon recently received a Healthy Communities Grant, which has funded this initiative. One of the top three recommendations that came from this grant is a desire to increase activity levels of children. This program utilizes several different strategies for increasing walking around schools, including a walking school bus, sidewalk improvements, and pedestrian safety instruction in physical education class. There have been some exciting collaborations between the Mt. Vernon School District and the city, and an advisory committee has been formed, with Safe routes to Schools, city, law, transportation, and the school district represented. The walking school bus uses a "hub and spoke" approach. A drop-off area half a mile from the school that is convenient for cars is identified where parents can bring their kids. They are met by a walking school bus volunteer, who then escorts the kids to school on a predetermined route that kids can join at any time. The process is reversed at the end of the day. A demonstration project is under way at Lincoln school, and the program is working to add a pilot project at Jefferson and Little Mountain schools. At Lincoln school, the walking school bus happens three days a week, but the plan is to expand it to five days a week. At Jefferson, five demonstration walks are being organized, and they plan to start walking Wednesdays. At Little Mountain, they are in the initial planning stages.</p>	<p>Walking School Bus, Healthy Communities, Safe Routes to Schools</p>	<p>Short Term: 10% increase in number of children walking to schools from baseline numbers. Long Term: Decrease in numbers of parents who are driving their children to school. Overall Goals: Increased physical activity for children leading to fewer overweight/ obese Americans and better health.</p>	<p>More children will walk to school—with the attendant benefits of increased physical exercise and reduced auto congestion around schools—if the fears of traffic and stranger danger are addressed by a hub drop-off location and parent-supervised walking school buses.</p>	<p>Skagit Valley Hospital, which serves Skagit County, Mt. Vernon, Stanwood, and Camano Island areas. Contact Liz McNett Crowl (public hospital)</p>	<p>Urban-Small City, Suburban</p>	<p>Learn what makes hub and spoke approach, and parent and institutional participation effective in a smaller city setting.</p>
<p>Trips to School: The Trips to School program was originally developed and implemented by the City of Bellevue, funded by the WSDOT's Safe Routes to School Program.. Some aspects of the program, which is no longer funded, are being adapted this school year by Phantom Lake Elementary School. The city is assisting with materials and provided a safe trips education packet to each teacher, student prizes, and the city mascot for the kick-off event. The program includes education for teachers and parents and activities and events for students. "Walking Thursdays" will take place throughout the year. Walking school bus coordination may take place in the spring of 2008. A parent volunteer administers the program.</p>	<p>Comprehensive Family and School Program (Marin County, Cal., and in Seattle)</p>	<p>Reduce congestion around elementary schools.</p>	<p>Student educational events and incentives will create awareness about walking to school. Drawing on parents' varied interests for their children to walk (health, environmental, neighborhood awareness) is the most significant catalyst for behavioral change.</p>	<p>Phantom Lake PTSA Contact: Juliette Powell (parent association)</p>	<p>Urban-Big City, Suburban</p>	<p>Learn how a volunteer parent association program operates and achieves outcomes differently than a government or nonprofit program.</p>

Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change *	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>GTEC Inclusion: Through the updated Commute Trip Reduction law (CTR), jurisdictions have the option to establish Growth and Transportation Efficiency Centers (GTEC) in which they can implement customized trip reduction programs and transportation-efficient land-use policies. Local government provides a plan containing the goals, strategies, financial partnerships, and implementation structure. On the basis of availability, the state can provide funding and technical support.</p> <p>Thurston Regional Planning Council has identified an elementary school that will be included in the GTEC. It would like to identify what CTR would mean for this school and is considering tools for parents, walking school bus, transit, carpooling, and other options. Thurston Regional Planning Council is interested in developing a curriculum, strategies, and tools to fit the GTEC designation. The city, council, and the schools are also interested in possible policy changes.</p>	Growth Management Act and Commute Trip Reduction Act	Reduce commute trips to schools in GTEC inclusion areas.	Developing mixed-use centers with schools to meet GMA objectives will reduce SOV congestion near schools by facilitating transit and non-motorized transportation options.	Thurston Regional Planning Council; Contact: Karen Parkhurst (government organization)	Urban-Small City, Suburban	Identify best practice techniques for determining how commute trips can be reduced in GTEC inclusion areas.
<p>School Share: The SchoolShare program will be a secure online website for parents/guardians seeking to connect with other parents/guardians in their area to transport their children to school by walking, biking, or carpooling. The schools or school districts will provide students' information. Parents will retrieve a password provided by the schools to log-on. The website will display a map with identifiers for student locations and contact information and will include Web 2.0 tools such as resource mapping and a personal comments section. Parents will be responsible for coordinating with each other to create walking school buses, bike trains, or carpools. Initial discussions with schools and a Web developer have been conducted. Further vetting is planned with the Office of Superintendent of Public Instruction. Some startup funding is available from a Transportation Enhancement grant. The program will start with a few schools, but the goal will be to make it available statewide.</p>	Ride Matching (Contra-Costa, Cal.)	Increase the number and frequency of students walking, biking, and carpooling to school. Reduce car traffic near schools. Improve student health. Improve student safety.	A one-stop, Web 2.0 rideshare website will improve parents' interest and ability to coordinate walking, biking, and carpools. More students moving together will equate to more security for each other and the neighborhood.	Feet First, an advocacy and action group for walkable communities; Contact: Rebecca Deehr (nonprofit organization)	Urban-Big City, Suburban	Learn how to construct and manage a ride sharing website. Learn how it is used and the advantages of and impediments to use by parents and driving-age students.

High Schools and Middle Schools

Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change *	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>Mobility Education: Mobility education is a concept to enhance Traffic Safety Education courses with multi-modal education for youth 15 to 17 years old. It would establish a kind of “Capstone Course” for the Safe Routes to School program and target the gap between the K-8 programs and the CTR programs available to working adults. Traffic Safety Education certificate courses in Washington involve a minimum of 30 hours of classroom and 6 hours of behind-the-wheel instruction. The Mobility Education instruction adds 10-14 hours of training in class, on foot, and on bicycles to a standard course, for a cost of approximately \$100 per student (Driver Ed courses cost approximately \$400). Content added addresses the environment, health, transportation efficiency, new technology, and cost savings for families and teens. Mobility education increases experiential education, parent involvement, and individual responsibility model for decision making. A single-section pilot course is being conducted and evaluated in partnership with Federal Way Public Schools in September-November 2007, with funding from King County. Other communities that have expressed interest in a larger pilot course in 2008 include Spokane, Kitsap County, Clark County, Skagit Valley, and Bellingham. The Mobility Education Foundation has identified several opportunities, including conducting train-the-instructors workshops to prepare Traffic Safety Education teachers in the curriculum needed for the expanded course; subsidies for students/instruction to provide the expanded curriculum in additional school districts or counties (partnering with either private businesses or public school districts is possible); developing a modular mobility education weekend program that could be segmented and offered separately from the integrated course; and refinement of a parent night component.</p>	<p>Teen Mobility (West Seattle High School)</p>	<p>Teenagers decrease usage of automobiles, increase usage of alternative modes of transportation.</p>	<p>Non-motorized and transit education for new drivers will stimulate bus, bike, and pedestrian mobility choices and safe driving. This education may rub off on parents or be reinforced at home.</p>	<p>The Mobility Education Foundation; Contact: David Levinger</p>	<p>Urban, Suburban and Rural</p>	<p>Learn impact of mobility education beyond driver’s education, learn impact of experiential education on the travel behavior of teenagers.</p>
<p>♦Off Ramp: Off Ramp is a high school program that trains and supports a small club of about a half-dozen student leaders to reduce the number of car trips made to their school. BEST guides student leaders through preparatory work to determine the barriers and incentives to sustainable transportation in their school. Together they select from a list of activities that raise awareness, reward “good” behavior, and generate alternative options for their peers to get to school. Each student is asked to take the lead on a longer-term initiative, such as fund raising for a bicycle rack. Student leaders are supported with site visits from a local Off Ramp program coordinator. Students discuss alternative transportation among themselves independent from their parents.</p>	<p>Student Led Transportation Club (Vancouver, BC)</p>	<p>Make students’ commutes more sustainable.</p>	<p>A bottom-up, student led approach is more likely to change student transportation and physical activity behavior than messages or programs from authority figures.</p>	<p>Better Environmentally Sound Transportation, Vancouver Contact: Deanne LaRoque (nonprofit organization)</p>	<p>Urban-Big City, Suburban</p>	<p>Learn how a student-led initiative compares to a parent- or administrator-led initiative in program activities and effectiveness; and how an initiative led by students affects long-term institutionalization of the program.</p>

♦ This program is not presently scheduled for implementation in 2008. We will look for a program sponsor.

Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change *	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>♦Way to Go: The Way To Go demonstration project involved education, free and reduced metro transit passes, and engagement activities. Information about alternatives to car travel was distributed through a kiosk, PTSA newsletter and neighborhood paper articles, classroom sessions, PA announcements, and posters. Reduced fare metro pass and pass marketing were offered, along with metro pass replacement for selected students, and new bike racks were installed. Students were engaged in the program through competitions and random rewards to encourage walking, biking, and busing. Neighborhood retailers participated by offering prizes, non-profit and government organizations provided assistance at transportation fairs, and students were offered the opportunity to volunteer for the alternative commute campaign to meet their community service graduation requirement.</p>	<p>Education and Encouragement + Universal Pass (Roosevelt High School)</p>	<p>Reduce automobile trips by students and staff. Reduce parking impacts on surrounding neighborhoods.</p>	<p>Raising awareness about transportation options through education accompanied by incentives and reduced fare or free bus passes will decrease SOV trips to school.</p>	<p>City of Seattle and consultant Contact: David Allen; (government + private consultant)</p>	<p>Urban-Big City, Suburban</p>	<p>Learn about how a program based on student incentives and information campaign affects the commute choice of high schools students; Learn about the impact of reduced bus passes on bus pass purchases and ridership of high school students.</p>

Colleges and Universities

Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change *	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>Central Transit: “Central Transit” is a transportation system at Central Washington University that connects CWU students to the Ellensburg business district. The morning route operates Monday through Friday from 7:00-10:00 AM on a trial basis. The evening route, which has just started its third year of operation, runs Monday through Sunday from 2:00 PM – 12:00 AM, with buses running every 30 minutes or less. Central Transit is available to university students, who pay a \$3 quarterly fee to underwrite the program. The nonprofit organization "Hope Source" provides the drivers and buses for the specific transit routes that were designed on the basis of student input. Several sources fund the project, including student fees, the CWU Police Department, two local agencies that work with disabled people, and WSDOT. The city of Ellensburg has no public transit service, and Hope Source would like to expand Central Transit to better serve the community, in particular elderly and disabled residents.</p>		<p>CWU’s objective is to reduce the number of students using cars on and around campus. Hope Source’s objective is to provide mobility to a broader segment of the Ellensburg community.</p>	<p>Regularly scheduled HOV service to the business district coupled with reduced availability of on-campus parking permits will reduce student car use, which will result in decreased congestion around campus.</p>	<p>Hope Source; Contact: Larry Anderson (nonprofit)</p>	<p>Rural</p>	<p>Learn how to provide fixed-route, HOV service in the absence of a public transit agency. Learn how such service can benefit students, businesses, and other special populations during peak hours and other times.</p>

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Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change *	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>Commute Trip Reduction Program: Eastern Washington University's CTR program consists of CTR incentives (gift certificates to the bookstore and random prizes), a CTR calendar, and a website that provides more information about CTR options. An essential part of the program is an agreement between Eastern and the Spokane Transit Authority that allows students, faculty, and staff to ride buses for free during the academic year with their University ID Card. Currently, this bus service is paid for by three entities: the associated students union (through reserve funds), parking services, and the administration. The reserve funds from the student's union are about to run out; therefore, students have voted to institute a fee, between \$7 and \$12, that will be added to quarterly tuition in the fall of 2008.</p>		<p>10% reduction in commute trips and a reduction in overall VMT each year.</p>	<p>Fare-free transit in combination with a well promoted incentive campaign will increase CTR program participation and reduce SOV commute trips to school.</p>	<p>Eastern Washington University; Contact: Ed McIntire (educational institution)</p>	<p>Rural</p>	<p>Learn how a universal pass program for students can be integrated with an institution's CTR program.</p>
<p>Viking Xpress: The Viking Xpress Bus Pass at Western Washington University is a <i>mandatory transit pass</i> for anyone taking 6 credits or more and an option for those taking fewer than 6 credits. More than 11,000 students are participating. The program is funded by a student fee of \$25 per quarter, included in tuition. The pass entitles the holder to unlimited rides on Whatcom Transit Authority buses (WTA) and shuttles to the University park-and-ride. The pass is also good for night parking on campus. The fee created a <i>late night shuttle</i> that provides service to and from campus to downtown after WTA shuts down at 10:30 PM. WTA will increase service because of the implementation of this pass. One half-time <i>student position</i> assists with program coordination and communication and reports information to the Associated Student Transportation Committee. The program is marketed through information tables, freshman orientation, posters, and Facebook bulletins.</p>	<p>Universal Pass (UW and CU)</p>	<p>Short Term: Stabilize the transit pass price (it was set to almost double), improve transit service, include students' role in transportation decisions, and reduce parking demand and impact on the neighborhood; Long Term: Reduce students driving to school and the need and cost for new parking facilities. Reduce the number of students who own cars. Reduce WWU's impact on the environment.</p>	<p>A mandatory, pre-paid pass coupled with improved and expanded service will increase new transit users and ridership among existing users, reducing commute trips by SOV. Having a student staff member on the program improves responsiveness to student concerns.</p>	<p>WWU;Contact: Carol Barry (educational institution)</p>	<p>Urban-Medium-City, Suburban</p>	<p>Learn how a mandatory, pre-paid universal pass affects ridership, transit service, and parking demand. Learn about the impact a student transportation coordinator; Learn how car ownership is tied to transit service.</p>

All School Levels

Name and Description of Program of Interest	Proven Model	Program Objectives	Theory of Change *	Implementer	Urban, Suburban, Rural	Learning Opportunities
<p>Fare Free Transit: Island Transit in Island County, Washington, offers fare-free transit to all riders. Transit is paid for through 3/10ths of 1 percent of locally directed sales tax. The program has been experienced big jumps in ridership from year to year (up to 15 percent increases). Consequently, whenever the board has revisited the fare-free policy, it has decided to keep it. If a fare were to be charged, there would be very little usable revenue. Island transit has service north and south along the Island’s main highway route, plus connecting feeder service. During the week, the main route, as well as many of the feeder routes, operate on approximately an hourly schedule, with some of the feeder routes operating on a bi-hourly schedule. Service is less frequent on the weekends.</p> <p>Island County has open enrollment for schools, and the bus system helps students travel to their desired school, as well as transporting them to after-school activities. Because of the rural environment, Island Transit bus drivers have the ability to get to know their riders and form relationships with the community and with the students. There has been friction between yellow school buses and Island Transit, as school bus funding is tied to ridership levels. Now many of the schools are dependent on Island Transit to transport their students</p>	<p>Pre-paid transit (Island Co.)</p>	<p>Increase ridership levels every year; seek to maintain state averages; maintain high cost effectiveness of routes.</p>	<p>By eliminating the barrier of the fare box, more people will ride the bus, which will result in a more viable transit system.</p>	<p>Island Transit; Contact: Martha Rose (public transit agency)</p>	<p>Rural</p>	<p>Learn how to provide sufficient transit service levels to schools; discover the factors for success of fare free transit.</p>

State and Local Policies					
Policy Issues	Description				
<p><i>Yellow School Buses: their mission, purpose, strengths and weaknesses and role in reducing auto traffic and increasing physical activity</i></p>	<p>Everyone is familiar with the yellow school bus, an enduring symbol of America’s free public education system. But familiarity does not substitute for understanding. Is the school bus the safest mode of transport to school? Who uses it (by age group; by household income level)? How are buses deployed in urban, suburban, and rural settings? Can school bus system management help to increase walking and bicycling to school? Does carpooling erode the market for school buses?</p> <p>These and many other questions offer a fertile ground for a comprehensive examination of the role that school buses play today and could play in the future in efforts to transport students safely to school, reduce congestion around schools, and increase walking and bicycling rates among the school age population in Washington state. Such a study could greatly inform the TDM Strategies for Schools project but is beyond its scope and budget. It would be useful to state and local school districts in allocating scarce education funds.</p>				
<p><i>School Siting and auto traffic around schools, current policies and future considerations</i></p>	<p>Large schools often require sites farther from residential areas and public transportation, which hinders walking, biking, busing, and carpooling to school. Some of the contributing factors are the following:</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 25%;"> <p>Size The State of Washington has guidelines, rather than requirements, for square footage of schools, and there is no minimum square footage requirement. The state provides matching funds to the school district for new construction or renovation per square foot up to the following levels: K-6 90 sq. ft. 7-8 117 sq. ft. 9-12 130 sq. ft.</p> </td> <td style="vertical-align: top; width: 25%;"> <p>Acreage Guidelines: K-6 - Five acres plus one acre for every 100 students 7-12 - Ten acres plus one acre for every 100 students</p> <p>Many school districts do not realize that these are only recommendations and, instead, treat them as requirements.</p> <p>In an attempt to begin addressing these problems, OSPI held a School Siting Summit in December 2006.</p> <p>How can OSPI be sure that districts have proper information on which to make their school siting decisions?</p> </td> <td style="vertical-align: top; width: 25%;"> <p>Parking: Parking availability is directly linked to SOV use. There is no statewide requirement for parking. Local government planning departments have their own school parking standards. Special event parking significantly raises the need for parking on a few days during the year.</p> <p>What are the effects of high school parking policies on single occupancy vehicles?</p> </td> <td style="vertical-align: top; width: 25%;"> <p>Recent Legislation The High Performance Public Building Act requires that all major facility projects of public school districts receiving funding from a state capital budget must be at least the LEED silver standard or the Washington Sustainable School Design Protocol (WSSDP). This goes into effect for Class I (>2000 students) school districts in July 2007 and for Class II (<2000 students) school districts in July 2008. <i>Points toward both certifications can be earned for locating a school near public transit, providing bicycle paths and parking, minimizing the number of parking stalls, and providing preferred parking for carpool or alternative fuel vehicles.</i></p> <p>What opportunities exist to use the HPPB Act to advocate for smart siting policies?</p> </td> </tr> </table> <p>What is the impact on school size of providing matching funds on the basis of square footage?</p> <p>These questions are important to the TDM Strategies for Schools study but may be beyond the immediate request and resources assigned by the legislature.</p>	<p>Size The State of Washington has guidelines, rather than requirements, for square footage of schools, and there is no minimum square footage requirement. The state provides matching funds to the school district for new construction or renovation per square foot up to the following levels: K-6 90 sq. ft. 7-8 117 sq. ft. 9-12 130 sq. ft.</p>	<p>Acreage Guidelines: K-6 - Five acres plus one acre for every 100 students 7-12 - Ten acres plus one acre for every 100 students</p> <p>Many school districts do not realize that these are only recommendations and, instead, treat them as requirements.</p> <p>In an attempt to begin addressing these problems, OSPI held a School Siting Summit in December 2006.</p> <p>How can OSPI be sure that districts have proper information on which to make their school siting decisions?</p>	<p>Parking: Parking availability is directly linked to SOV use. There is no statewide requirement for parking. Local government planning departments have their own school parking standards. Special event parking significantly raises the need for parking on a few days during the year.</p> <p>What are the effects of high school parking policies on single occupancy vehicles?</p>	<p>Recent Legislation The High Performance Public Building Act requires that all major facility projects of public school districts receiving funding from a state capital budget must be at least the LEED silver standard or the Washington Sustainable School Design Protocol (WSSDP). This goes into effect for Class I (>2000 students) school districts in July 2007 and for Class II (<2000 students) school districts in July 2008. <i>Points toward both certifications can be earned for locating a school near public transit, providing bicycle paths and parking, minimizing the number of parking stalls, and providing preferred parking for carpool or alternative fuel vehicles.</i></p> <p>What opportunities exist to use the HPPB Act to advocate for smart siting policies?</p>
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<p><i>Parking at High Schools: How can pricing or regulation reduce Single Occupancy Vehicles?</i></p>	<p>The availability and cost of parking plays an important role in the decision to drive to work or to school. How, if at all, are high schools regulating or pricing student parking? How could the state or individual school districts create policies to discourage free parking? How could parking policies be used to encourage carpooling for students who are permitted to carpool? What coordination would be required with the municipalities to make regulation or pricing an effective disincentive to drive without burdening the schools’ surrounding communities?</p>				
<p><i>Associating TDM Strategies for Schools with existing Washington State initiatives</i></p>	<p>Associating TDM strategies in school settings with existing Washington State policy and program initiatives may make implementation and acceptance easier. Examples of such initiatives are as follows:</p> <ul style="list-style-type: none"> • Washington Climate Change Challenge: Washington Climate Change Challenge will consider the full range of policies and strategies that may be adopted to achieve the goals established by Governor Gregoire, which include reducing Green House Gas emissions to 1990 emission levels by 2020. Most of the programs of interest will reduce single occupancy vehicle trips and therefore emissions. How can TDM Strategies for Schools be incorporated in the Washington Climate Change Challenge’s recommendations? • Governor’s commitment to children’s health: The Governor has promised that all of Washington’s children will be insured by 2010. TDM Strategies for Schools recommendations that encourage walking and biking may improve children’s health and therefore could reduce the cost of insurance. How can TDM Strategies for Schools be incorporated into the public health agenda? 				