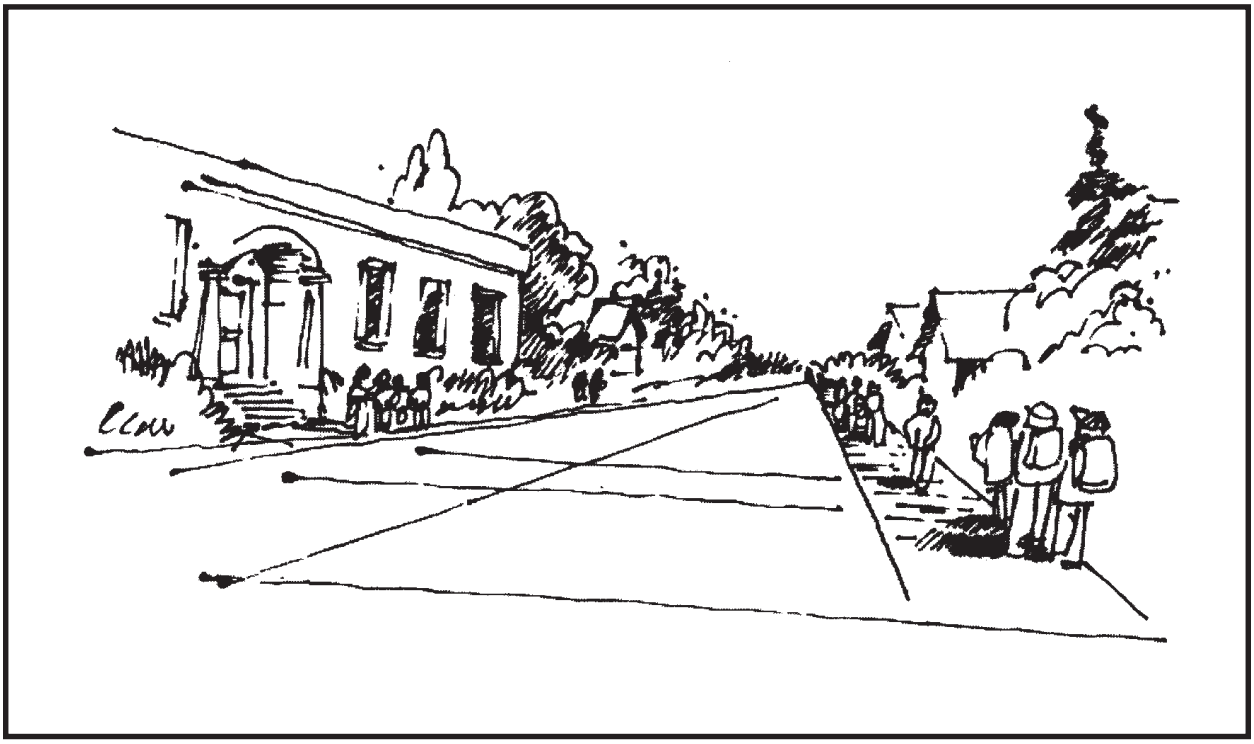
A Guidebook for Student Pedestrian Safety



Final Report

August 1996

prepared for

Washington State Department of Transportation

Washington State Traffic Safety Commission

Superintendent of Public Instruction

prepared by:

KJS Associates, Inc.

MacLeod Reckord

Educational Management Consultants

Disclaimer

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A Guidebook for
Student Pedestrian Safety

Final Report

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Superintendent of Public Instruction

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Interim report was issued in August 1995, and Final Report reflects numerous suggestions from participants who implemented the recommended procedures during the 1995–96 school year.

16. Abstract

In Washington state, school districts are required to develop and distribute school walk routes for all elementary schools. This Guidebook was written to assist school transportation directors, in conjunction with parents, teachers and local public works officials, with developing these routes. Its main purposes are to: (1) provide direction on how to develop and implement school walk routes; (2) explain procedures to identify pedestrian safety deficiencies along school walk routes and suggest remedial actions; and (3) recommend efficient procedures which school administrators can use to work with their local public works agencies to remedy these deficiencies.

Contents include: Introduction — background about school walk route planning in the State of Washington, and lists some of the applicable laws and regulations; Process for Improving Student Pedestrian Safety — school pedestrian safety program, and shows how school walk routes fit into the overall program. The appendix to this section lists a variety of resources for school pedestrian safety materials. This chapter also explains the role of the district Safety Advisory Committee (SAC) in developing school walk routes, and describes a process for setting up the committee.

Chapter III of this Guidebook explains the process for developing and implementing school walk routes. It lists the step-by-step procedures to select the safest walk routes, and provides extensive examples of the stages of developing walk route maps.

Chapter IV highlights several procedures for identifying pedestrian safety deficiencies along school walk routes.

Chapter V describes a process to identify and implement improvements (remedial actions) to correct pedestrian safety deficiencies and to generally make the walk routes as safe as possible.

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Foreword

The Washington State Department of Transportation (WSDOT), in conjunction with the Superintendent of Public Instruction (SPI) and the Washington Traffic Safety Commission (WTSC), sponsored the development of this *Guidebook*. It is a direct outcome of recommendations from the *Final Report of the Washington State Task Force on Student Transportation Safety* (1990). The three purposes of the Guidebook are to: (1) provide direction on how to develop and implement school walk routes; (2) explain procedures to identify pedestrian safety deficiencies along school walk routes and suggest remedial actions; and (3) recommend efficient procedures which school administrators can use to work with their local public works agencies to remedy these deficiencies.

This *Guidebook* does not address school siting, public transit, or school bus safety considerations. Site master planning, transit, and school bus route planning efforts are well documented in other references. In addition, the procedures and recommendations in this *Guidebook* may not be applicable to bicycle transportation.

This *Guidebook* is not intended as a comprehensive reference for all aspects of developing school walk routes and improving school trip safety. It highlights and briefly discusses key steps in the process and provides guidelines for decision making wherever possible. However, it cannot replace professional judgment, nor can it fully educate transportation professionals on all aspects of this subject. Therefore, references are cited on pedestrian safety measures, school pedestrian safety educational materials, and traffic engineering procedures and analysis techniques. These references should be consulted as appropriate throughout the process.

Acknowledgments

The *Guidebook* was developed with the support of an Advisory Committee comprised of parents, school staff and state, county and local traffic engineers who are committed to making the way to school safer for our students. It is their sincere hope that this Guide will prove useful to parents, communities, schools and public works agencies throughout Washington State.

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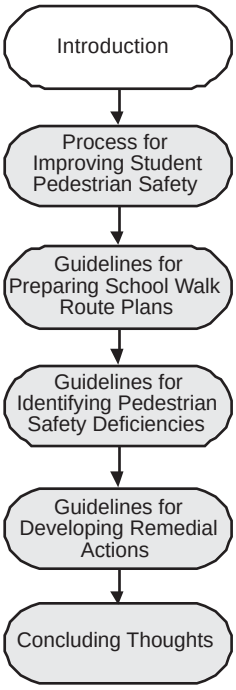


Chapter 1 Introduction

The safety of children on their way to and from school is a major concern of parents, schools, public works and law enforcement agencies. In Washington state, school districts are responsible for developing walking routes for their schools. This process involves preparing walk route plans, providing school walk route maps and information to parents and students, identifying pedestrian safety deficiencies and working collaboratively with the local public works agencies to implement remedial actions to address any pedestrian safety concerns.

Until now, school administrators have not had a comprehensive, concise reference for preparing walk route plans for their students. The process used to develop walk routes varies from district to district, and school to school. Walk routes are usually developed by the transportation supervisor and/or some combination of the school principal, school bus drivers and sometimes a few parents. In some districts, there are no identified walk routes because the district has decided to provide bus transportation for all students.

Description of this Guidebook

This *Guidebook for Student Pedestrian Safety* (***Guidebook)*** addresses each of the functions involved with school walk routes. It is written for individuals who are directly responsible for preparing, evaluating and improving school walk route plans and maps for school children. It is intended to provide background, guidelines and a systematic approach to this subject.

This chapter provides an introduction and background about school walk route planning in the State of Washington and lists some of the applicable laws and regulations.

Chapter II discusses a comprehensive school pedestrian safety program and shows how school walk routes fit into the overall program. The appendix to this section lists a variety of resources for school pedestrian safety materials. This chapter also explains the role of the district Safety Advisory Committee (SAC) in developing school walk routes and describes a process for setting up the committee.

Chapter III of this *Guidebook* explains the process for developing and implementing school walk routes. It lists the step-by-step procedures to select the safest walk routes and provides extensive examples of the stages of developing walk route maps.

Chapter IV highlights several procedures for identifying pedestrian safety deficiencies along school walk routes.

Chapter V describes a process to identify and implement improvements (remedial actions) to correct pedestrian safety deficiencies and to generally make the walk routes as safe as possible.

Laws and Regulations

School districts are required by state regulations to have suggested walk route plans for every elementary school. The basic regulation is quoted in full from the Washington Administrative Code (WAC).

> **WAC 392-151-025 Route plans.** Suggested route plans shall be developed for each elementary school that has students who walk to and from school. It shall recommend school routes based on considerations of traffic patterns, existing traffic controls and other crossing protection aids such as school patrols. These route plans shall limit the number of school crossings so that students move through the crossings in groups, allowing only one entrance-exit from each block to and from school. The safe route to school map shall be distributed to all students with instructions that it be taken home and discussed with the parents.

In previous years, districts also had to prepare school walk route plans to qualify for additional state transportation funding due to "hazardous walking conditions." The 1996 State Legislature changed the allocation formula for student transportation funding with adoption of Senate Bill 6684. Instead of funding based on the existence of hazardous walking conditions for students living within one radius mile of school, funding is based on the number of students in kindergarten through grade five living within one radius mile of school. In addition, funds allocated to school districts for students living within one mile of school can be spent to alleviate pedestrian safety deficiencies along school walk routes. Potential actions eligible for such funding include the use of warning signs, sidewalks, overpasses, crossing guards and bus transportation. Priority must be given to students in kindergarten through fifth grade.

RCW 46.61.385 and its associated regulations encourage the use of school patrols to help students safely cross roadways adjacent to the school and other crossings identified in the suggested safe route to school plans. School patrols and adult crossing guards are key elements of a safe walk route, especially for younger children who lack the cognitive abilities necessary to cross a busy street.

State regulations also recommend forming a Safety Advisory Committee to aid districts in developing walk routes and overseeing a school patrol program. The process of organizing a committee is discussed in the next chapter of the *Guidebook*, and the regulation is given below:

> **WAC 392-151-017 Safety advisory committee—Selection.** Selection of a safety advisory committee is important in the development and support of school patrol policy and in the development of a safe route to school plan. Members may be selected from the following areas: (1) School administration; (2) Law enforcement; (3) Traffic engineering; and (4) School-parent organization.

What is a School Walk Route Plan?

WAC 392-151-025 mandates the preparation of "suggested route plans" and distribution of a "safe route to school map" to all elementary school students. Although this regulation may raise questions concerning responsibility for preparing the plans/maps or the potential liability of the school district, the intent of the WAC is to see that students and their parents have the safest route to and from school identified for them.

Although WAC 392-151-025 mentions "the safe route to school map," there is no universal definition of a "safe" walk route. The degree of safety along a walk route is a subjective judgment. Although we can usually agree on unsafe walking conditions in relatively objective and measurable terms, no accepted standards exist to make a similar determination that a route is "safe" for school children walking to and from school. For example, a record of pedestrian accidents can highlight a given location as a safety concern and lead traffic engineering and public works agencies to identify and correct physical or operational problems; however, the lack of any recorded pedestrian accidents at an intersection or along a stretch of highway does not alone justify calling that location "safe."

For the purposes of this *Guidebook*, a school walk route plan is the safest of the possible walking routes for students, all transportation factors considered, and (1) covers a one-mile radius from the school, and (2) minimizes exposure to any identified pedestrian safety deficiencies or unsafe walking conditions as determined by the board of directors of a school district.

"Minimizing exposure" means choosing reasonable walking routes that have the greatest physical separation between walking children and nearby traffic flows, have the fewest number of road or rail crossings, and which expose walking children to the lowest speeds and volumes of moving vehicles.

Pedestrian safety deficiencies or unsafe walking conditions can be identified in several acceptable ways. The board of directors can identify unsafe walking conditions by applying locally adopted criteria, based on SPI's *Guidelines for Determining the Existence of Hazardous Walking Conditions* which was prepared in 1984 and reissued in 1994, to set guidelines for compliance with the previous statute regarding transportation funding for students living within a one radius mile of school. Other entities concerned with the safety of student pedestrians, such as a School District Safety Advisory Committee, the district transportation supervisor or the local public works agency could also apply objective criteria to identify unsafe walking conditions.

Potential pedestrian safety deficiencies include roadways without sidewalks or adequate shoulders for children to walk safely outside the flow of traffic, the speed and mix of the traffic, uncontrolled crossings

(i.e., those without traffic signals or crossing guards during school commute hours) of busy streets and highways and railroad crossings.

In the past few years, some districts have identified specific areas unsafe for children to walk through because of community social conditions and provided transportation for students. Such social conditions include street violence, specific environmental circumstances, presence of sex offenders/predators and drug trafficking areas. At this time the state offers no guidance on these situations, leaving the discussion and decision to local school districts and communities. Chapter 4 provides an example of some social conditions criteria identified by a school district.

A safe school walk route is not a totally risk-free walking environment. Few walk routes will be completely free from exposure to all potential risks of injury, great or small. Even a child walking along a sidewalk on a residential cul-de-sac experiences some risk of conflicts with moving vehicles in the street or backing out of driveways.

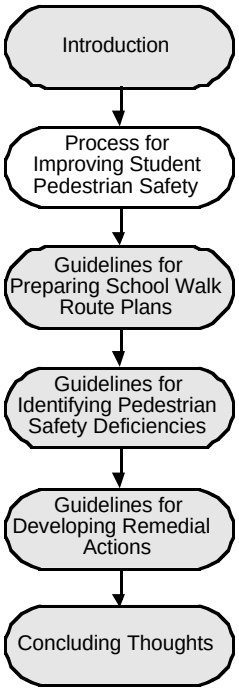
Responsibility for developing the routes and maps

The issue of responsibility for school walk route plans is not defined by either state statute (RCW) or regulation (WAC). The only guidance is provided by the fact that "suggested route plans" are covered by Chapter 392-151 WAC, Traffic Safety — School Safety Patrol and that the "superintendent or chief administrative officer" of the school district is "ultimately responsible" for the school patrol. On the other hand, RCW Chapter 28A.160 Student Transportation assigns responsibility for all aspects of student transportation to the board of directors of the school district; day-to-day responsibility for student transportation is generally delegated to the district's superintendent and in turn to the district's transportation director.

In Washington, the responsibility for preparing school walk route plans has been assigned to the school districts. This *Guidebook* is intended to assist any and all of the community of school pedestrian safety interests, in the hope that school walk route plans will be prepared and distributed on a regular basis.

Liability issues

The liability of the school district in connection with "route plans" is also not defined by either statute or regulation. WAC 392-151-020 lists "suggested procedures (that) may assist schools and employees or agents reduce the potential liability in connection with the operator of a school patrol: ..." The guidelines presented in this *Guidebook*, while not having the force of regulation, provide procedures which, if properly followed, would result in reasonable rules, regulations and policies governing school walk routes, and which advocate periodic review of the school walk route program in a manner similar to those suggested in WAC 392-151-020 regarding reducing potential liability for school patrols.



Chapter 2
Process For Improving Student Pedestrian Safety

This *Guidebook* emphasizes a community-based process to improve pedestrian safety for school children. This section explains the process, community participants and key issues to consider. This process addresses school walk routes and helps school districts manage walk routes and student transportation for student living near their schools in a safe and cost-effective manner. It also shows districts how to effectively cooperate with their local public works agency to improve student pedestrian safety.

A Partnership for School Pedestrian Safety

Pedestrian safety for school children is not just the responsibility of the school. Everyone in the community has a critical role as discussed in Table 1. The following paragraphs highlight some specific responsibilities of various actors involved in school pedestrian safety.

Local governments

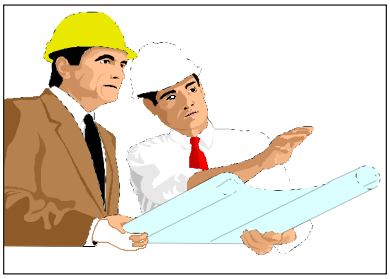
In addition to public works responsibilities related to safe design, construction and operation of the jurisdiction's streets and highways, the Washington State Legislature has given local governments specific responsibilities to ensure that new development provides adequate facilities for school pedestrian safety. Specifically, local jurisdictions

Responsibilities for Walk Route Safety	
Actor	**Role**
The Driver	Perhaps the greatest responsibility for school pedestrian safety lies with the individual driver. Pedestrians (including children) have the right-of-way in a crosswalk, marked or not. Even when the pedestrian does not have the right-of-way the motorist must exercise due care to avoid an accident.
The Student	The student's personal responsibility for their own safety as a pedestrian cannot be over-emphasized. The child must understand and follow the instructions given for walking to and from school.
The Parent	The parents of school children have the best opportunity to see and correct poor pedestrian behaviors of their children. The child's attitude toward obeying school crossing, pedestrian and bicycle safety rules will be greatly influenced by the parents' attitude toward obedience of traffic laws, both as motorists and pedestrians. Parents should also be certain their children are following the route to school that has been designated in a school route plan.
The School	School districts are responsible for establishing and enforcing school route plans. The schools should play an active part in the training and utilization of crossing guards and school safety patrols. Teachers and administrators also have an opportunity and responsibility to observe the students' walking behavior directly and note where special problems exist.
The School District	School districts are responsible for siting and developing school facilities which foster a good walking environment. These responsibilities include choosing school locations which balance vehicle access with pedestrian safety needs, constructing adequate pedestrian facilities along the perimeter of the school site and working with the local public works agency to fund and install adequate crossing protection at key points. School districts are responsible for distributing walk route maps to parents and students.
Government Agencies	Local public works agencies and the state DOT have responsibilities for design, installation and maintenance of traffic control devices and pedestrian facilities (such as sidewalks, shoulders and pathways) in accord with local, state and national standards. In addition to enforcing vehicle speeds and stopping behaviors in school zones, local police officers may be available to talk about school traffic safety before student assemblies or lead school safety programs. Local jurisdictions also administer zoning and building permits and, in some locales, collect school impact fees from private developers.

Source: adapted from *School Traffic Safety,* Illinois Department of Transportation, Springfield, IL; undated.

Table 1. Responsibilities for walk route safety

are required to adopt regulations that ensure that new subdivision and short plats are served by adequate facilities that assure safe walking conditions for students who walk to and from school. Relevant laws are cited below:



RCW 58.17.060 Short plats and short subdivisions—Summary approval—Regulations—Requirements. (2) Cities, towns, and counties shall include in their short plat regulations and procedures pursuant to subsection (1) of this section provisions for considering sidewalks and other planning features that assure safe walking conditions for students who walk to and from school.

RCW 58.17.110 Approval or disapproval of subdivision and dedication—Factors to be considered—Conditions for approval—Finding—Release from damages.

(1) The city, town, or county legislative body shall inquire into the public use and interest proposed to be served by the establishment of the subdivision and dedication. It shall determine: (a) ***If appropriate provisions are made for***, but not limited to, the public health, safety, and general welfare, for open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and schoolgrounds, and shall consider all other relevant facts, ***including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school***; and (b) whether the public interest will be served by the subdivision and dedication.

(2) A proposed subdivision and dedication ***shall not be approved unless*** the city, town, or county legislative body makes written findings that: (a) ***Appropriate provisions are made for*** the public health, safety, and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and schoolgrounds and all other relevant facts, including ***sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school***; and (b) the public use and interest will be served by the platting of such subdivision and dedication. If it finds that the proposed subdivision and dedication make such appropriate provisions and that the public use and interest will be served, then the legislative body shall approve the proposed subdivision and dedication. Dedication of land to any public body, provision of public improvements to serve the subdivision, and/or impact fees imposed under RCW 82.02.050 through 82.02.090 may be required as a condition of subdivision approval. Dedications shall be clearly shown on the final plat. No dedication, provision of public improvements, or impact fees imposed under RCW 82.02.050 through 82.02.090 shall

> be allowed that constitutes an unconstitutional taking of private property. The legislative body shall not as a condition to the approval of any subdivision require a release from damages to be procured from other property owners. [Emphasis added]

Plans get you into things, but you got to work your way out.

Will Rogers

School districts should work with local jurisdictions during the platting and subdivision process for new developments to ensure that these conditions are fully implemented. One very effective way is to become involved with the local jurisdiction during development review under the State Environmental Policy Act (SEPA) process. School districts should request that the responsible SEPA official notify them of pending developments within their service area. For development projects that are proposed to receive a Declaration of Non-Significance (DNS) from the SEPA official, the district should make formal comments asking the jurisdiction to ensure that the above requirements are fully met before the DNS is issued. For projects which require an Environmental Impact Statement (EIS), the district should request that the potential impact of the proposed development on student pedestrian travel be examined in the EIS in light of the above requirements. Also, it may be useful to remind the elected officials in the jurisdictions within the school district's service area about the above requirements, and to work with local building and zoning officials to see that they are enforced.

School districts

The location, design and site development of a new school can greatly influence the safety of children walking to and from school. Figure 1 provides some "practical tips" from SPI for opening a new school. When evaluating potential sites for new schools, preference should be given to sites which are easily connected to the existing pedestrian system. When developing a new school site, the school district should construct sidewalks, wide paved shoulders and/or separated pedestrian pathways along all streets and roadways which bound the school site. In addition, the school district should work closely with the local public works agency during the site design process to identify major school pedestrian crossings and mutually select and implement the safest crossing treatment at each one. This includes standard signing and striping for crosswalks and the use of school patrol and adult crossing guards at key locations.

Representative School Trip Safety Programs

The development of school walk routes is but one part of a comprehensive school trip safety program. The program should also address school bus route plans; vehicle access, circulation and parking at the school site; pedestrian circulation on and around the school campus; and safety education and enforcement. Although this *Guidebook* focuses on school walk routes, we have provided a listing of some of the extensive resources available to parents and educators which address all aspects of the school trip program. A school trip safety program generally has three major components: a pedestrian safety education program, a Safety Advisory Committee and an enforcement program.

Practical Tips for Opening a New School

The Beginning- Developing Safe Walk-ways:

- *Notify proper government agency in very beginning of school building/planning process that walkways will need to be developed. This is usually 3-4 years before expected completion of the school.*
- *Work with school planners to develop building access from yet to be developed walkways/sidewalks, keeping in mind pedestrian safety, bus zone locations and parking lots and drop-off points for children by parents.*
- *Meet with all parties concerned, parents, school administration, transportation, government entity, and builder to discuss the needed walkways for the new school and brainstorm. Possible discussion items: other entrances into back of school, i.e. from apartment or housing development ,or signing, signal lights, need for crossing guard(s), ditches filled in, lighting/street and cross-walks, education of group on regulations and limitations on highways, roads, streets, possible dedicated school crossing signal lights, possible LID and establishment of future easements to new school from undeveloped land.*
- *Prioritize and set time lines, group should meet periodically until opening of the new school.*
- *Develop walk routes.*

Spring Before School Is Opened:

- *Meet with "new school" parent group to discuss the walking plan for the school. Include administrator(s), transportation, road engineers, etc.*
- *School officials and parents should walk from the new school out to neighborhoods to identify possible unsafe locations.*
- *Observe the area and "see" where people are walking.*
- *Publish and distribute walking route(s) via newsletters, meetings, local newspaper, etc. Offer "open house" to all future parents and students for purpose of discussion, bicycle/walking rules and suggestions for safe walking. This allows parents the opportunity to work with students, maybe walk with them to/from school during summer months, buy "proper winter clothing for walking."*

School Opens

- *Distribute maps to students and parents.*
- *Review every year.*

Figure 1. Practical Tips for Opening a New School

Educational programs

Most common types of pedestrian accidents children aged K-6

Darting out

Dashing across an intersection

Crossing in front of a turning vehicle

Crossing a multilane street

Entering or crossing an intersection

Playing in a roadway

Going to or from a school bus

Crossing behind a vehicle that is backing up.

Walk Alert Program
US DOT
National Highway Traffic Safety Administration

The main objective of a student pedestrian safety education program is to increase the safety of children as they go to school or play in their neighborhood. This section discusses the elements of a good program and lists resources, such as AAA's school safety brochure shown in Figure 2, which can be used to reinforce good walking behaviors among school children. A copy of the brochure is provided in the appendix to this chapter.

Sadly, pedestrian accidents are the second leading cause of death for children. Pedestrian deaths peak at ages three through seven, while life crippling injuries seem to peak at ages four through eight. Table 2 shows the accident statistics for Washington Pedestrians in 1994. The seriousness of pedestrian accident problems intensifies when youngsters begin attending school and play a more independent role in traffic. In 1994 in Washington state, pedestrians in the 5-14 year old age group suffered 12 deaths and 446 injuries. As Table 2 indicates, over 80 percent of these preventable injuries/fatalities occurred while the pedestrian was crossing a roadway. Curiously there was no difference between the number of accidents "crossing at an intersection" or "crossing not at an intersection" for this age group. For all the other pedestrian groups, twice as many were injured when crossing an intersection, than were injured when crossing mid-block.

Figure 2. AAA School Pedestrian Safety brochure

	1994 Pedestrians Killed or Injured in Washington State					
	Number of Pedestrians			Percent of Total		
Pedestrian Action	**Ages 5-14**	**All other age groups**	**Total**	**Ages 5-14**	**All other age groups**	**Total**
Crossing at intersection	193	699	892	41.5%	45.2%	44.3%
Crossing not an intersection	195	417	612	41.9%	26.9%	30.4%
Playing in roadway	28	11	39	6.0%	0.7%	1.9%
Walking with traffic	8	49	57	1.7%	3.2%	2.8%
Walking against traffic	3	23	26	0.6%	1.5%	1.3%
All other	38	349	387	8.2%	22.5%	19.2%
Totals	465	1,548	2,013	100.0%	100.0%	100.0%

Source: WTSC 1994 Traffic Collisions in Washington State.

Table 2. 1994 Washington pedestrian accident statistics

There are developmental and behavioral reasons why children are involved in accidents. They are impulsive, they are short (a six year old's eye level is about 36 inches above the ground), their peripheral vision is not developed as well as adults, they do not localize sound as well as adults, and studies show that 5 and 6 year old children do not have the developmental skills to safely and consistently cope with traffic.

Key factors in preventing pedestrian accidents among young people include continuous safety education at home and school, protection by school safety patrol or adult guards at street crossings and community awareness programs for drivers. Increased experience and maturity of children usually leads to better awareness of moving vehicles. Preventing student pedestrian injuries is a complex issue for which no single intervention will be completely effective.

Developmental limitions of children aged 5 - 9:

Have 1/3 narrower side vision than an adult

Are less able to determine the direction of sounds

Have trouble judging speeds and distances of moving cars

Have a limited capacity for anticipation or focusing

Can overestimate their own knowledge and physical strength

Are too small to be seen by drivers

Have parents that unknowingly place them at risk by expecting them to behave like "little adults" in traffic situations.

Childhood behaviors

Understanding what causes children to behave as they do in traffic offers important clues to accident prevention. The way youngsters think, their immature motor skills, their desire to explore all aspects of their environment, and their lack of traffic experience all contribute to the high rate of pedestrian accidents involving children. Most pedestrian accidents involving children occur on residential streets within a short distance of their home. According to one DOT study, 31 percent of all child pedestrian accidents occur when children dart out in front of moving vehicles. Young children are struck more often while crossing between intersections rather than at intersections.

Crossing a street involves a complex series of actions with as many as 26 tasks needed to negotiate traffic safely.

Young children cannot analyze a situation well before they act. Their thinking is a combination of reality and fantasy, knowledge and miscomprehensions. Merely memorizing safety rules or learning words to a safety song or poem are not successful approaches to accident prevention. "Learning by doing" safe behaviors has repeatedly proven to have the most success in modifying a child's behavior.

Younger children show little or no concern when moving vehicles are near them. They simply assume that the motorist will see them and act accordingly. "***After all***," the young child reasons, ***"I can see both the driver and the car!"***

K-3 children often cannot focus on more than one thing at a time. They have short attention spans, are impulsive and inherently curious. Furthermore, children under six rarely understand the true nature of dangerous situations. They may run into the street to retrieve something or greet a friend with no thought to the danger from cars.

Elements of a good student pedestrian safety education program

Strong well designed pedestrian safety education programs for young pedestrians develop safe and responsible roadway users and emphasize "self reliance" rather than protection. Programs should equip youngsters for independence by creating within themselves a "safety consciousness" that effectively guides their behavior through many real life traffic situations. "Learn by doing" should be a prominent part of any program. Children should learn not only good habits, but practice for situations that may suddenly become dangerous. They need to learn how to cross when there isn't a crosswalk and what to do if a car comes

Useful References

Manual on Uniform Traffic Control Devices (*MUTCD*), U.S. Department of Transportation, Federal Highway Administration, Washington, D. C., 1988 and supplements.

School Trip Safety Program Guidelines, Technical Committee 4A-1, Institute of Transportation Engineers, Washington, D.C., 1984.

Pline, James L., Editor; *Traffic Engineering Handbook* (4th Edition); Institute of Transportation Engineers, Washington, D.C., 1992.

down the street after they've already started to cross or if the signal light changes while they are in the crosswalk. Programs should teach children to:

- identify hazardous situations,
- assess problems accurately,
- calculate the risks involved, and
- respond in an efficient and safe manner.

Research shows that the most effective programs progress from supervision of the child by others to the development of individual responsibility. Adults, both parents and teachers, must initially furnish a safe environment for young walkers, while simultaneously providing varied, real-life experiences until the young pedestrians can assume responsibility for themselves in a mature and safe manner.

Safety education programs for young pedestrians should address the elements listed in Table 3. At the school level, a continuing program of education on pedestrian safety can establish good walking habits and behaviors and reinforce these behaviors throughout the school year. Some good rules for pedestrian behavior for school children are shown in Table 4.

Elements To Be Covered in A Safety Education Program
Marked crosswalks
Unmarked crossings
Vehicle turning movements
Obstructions to driver and pedestrian visibility
Traffic signal lights
Pedestrian-control devices such as walk and don't walk indicators and push-button controls
Stop signs
Intersections where there are no controls
Sidewalks
Areas where there are no sidewalks, narrow shoulders or no shoulders at all
One-way Streets
Function of police officers, adult crossing guards and safety school patrols

Source: adapted from AAA The Safest Route to School Project, undated

Table 3. Elements to be covered in a Pedestrian Safety Program

Guidelines for Good Pedestrian Behavior
1. Look both ways before crossing. (left, right, left)
2. Walk, don't run across streets.
3. Cross only at safe corners, even if you walk farther.
4. Choose the route with fewest streets to cross.
5. When possible, cross streets where there are traffic helps.
6. Obey traffic signals.
7. Face traffic when walking on roads without sidewalks.
8. Watch for turning cars.
9. Keep from walking between parked cars.
10. Refuse to ride with strangers.
11. Go directly between home and school.

Source: Guidelines for the development of safe walking trip maps, Volume V School Trip Safety/Urban Play Areas Project, USDOT, FHA, Washington, D.C., 1975.

Table 4. Rules for pedestrian behavior

Parent involvement critical

Parents need to be aware that in our highly auto oriented society, half of all pedestrian accidents involve children under the age of 15. The younger the child, the more likely that he/she will be involved in a pedestrian accident. Parents need to recognize the developmental limitations of their young children as pedestrians. Surveys and interviews with parents show that parents consistently over estimate the abilities of their children to cope with traffic. Parents may inadvertently place their children in situations in which the child's skills are mis-matched to the task at hand. Parents need to be included as active participants in modeling and teaching safe pedestrian skills to their children. At home, parent reinforcement of the lessons learned at school is critical to the successful modification of their child's habits.

Resources available to schools/communities

***HELPFUL HINT**: Fourth and Fifth graders can be buddies for kindergarten partners in reviewing pedestrian safety skills.*

Preventing pedestrian injuries requires a multifaceted, multi-disciplinary approach. It should include developing children's skills, community education, environmental modifications, legislative changes and improved enforcement. Research shows that the most change in students' behaviors occur when the emphasis is on "practicing" the right behaviors, reinforcement comes from parents both by modeling good habits and reviewing safety rules taught at school and the awareness level of the neighborhood driver is raised.

Pedestrian safety education should be a district priority for all students, initially focused on K-3 students, with a review program for 4-6 grade students. Support for the program may come from a local Safety Advisory Committee, the PTA, the school district Health Curriculum Adoption Committee or from other community organizations such as public health and emergency services, and agencies such as traffic engineers, public works and law enforcement.

In many districts, pedestrian safety occurs as part of the Safety Component of the adopted Health Curriculum. Skills taught for safe walking can be a separate unit or may be included with bus safety or covered during personal safety units. Extensive resources are available from the community to assist educators and parents establish pedestrian safety programs in their schools if none exists.

Washington state is fortunate to have several nationally acclaimed, locally developed, youth pedestrian safety programs available to schools and other community groups. The Harborview Medical Center Program has teacher curriculum guides, curriculum materials and parent/child activity workbooks to reinforce skills taught at school. AAA of Washington has curriculum for elementary teachers that includes posters, workbooks and supplies for crossing patrols. In addition, AAA provides news releases to local newspapers timing them to the start of school and focusing on the need for increased driver awareness of young children walking to and from school.

The National Safe Kids Campaign, the National Association for the Education of Young Children (NAEYC), the National Safety Council and many others have developed good resources.

The Appendix to this chapter lists pedestrian safety curriculums, available brochures and pamphlets, parent workbooks and incentive rewards (reflective bands, awards, etc.) that are available at little or no cost to schools.

WSTSC Grants

If the school is just initiating a program, funding resources are often available at the building level. One little used funding resource for the purchase of curriculum materials or brochures is a mini-grant of $500 from the Washington State Traffic Safety Commission available to any elementary school for the development of pedestrian safety programs. See the appendix at the end of this chapter for specific contact and more information.

Organizing a Safety Advisory Committee

WAC 392-151-017 recommends that each school district establish a Safety Advisory Committee (SAC) to aid "in the development of a safe route to school plan." The members of the committee should represent school administration, law enforcement, traffic engineering, public works and the local school-parent organization. Other public and private entities may also be included or consulted by the committee. For example,

when a walk route crosses railroad tracks, cooperation with the railroad company will be needed to make any pedestrian safety enhancements. In parts of Washington, open irrigation ditches may create potential safety concerns for young children walking nearby, and the local irrigation district should be consulted about pedestrian safety improvements.

A community emphasis

A committee approach is often the best way to involve all relevant community participants. Pedestrian safety improvements for school walk routes will benefit the entire community, not just school children. These same routes that children take to school are used evenings and weekends by other neighborhood children and by adults to get to school play fields, auditoriums and community facilities. Improving these routes with added sidewalks or widened shoulders, constructing overpasses and making other improvements creates a safer environment for all pedestians — 24 hours a day.

The emphasis on safer walking conditions for all means that the local public works agency, WSDOT (state highways), law enforcement agencies, and in some cases, other entities like railroads and irrigation districts, should be involved in developing school walk routes and in identifying and funding remedial actions to correct safety deficiencies. Figure 3 illustrates the community process.

Specific responsibilities

A systematic approach by a community-based Safety Advisory Committee helps ensure that any recommendations are reasonable for the conditions around each school. Generally, the authority of the SAC should be limited to endorsing the school route map, coordinating multi-agency school traffic safety improvements, hearing appeals regarding school walk route assignments, working with the school patrol and recommending student pedestrian safety policies to the school board.

> *Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.*
>
> *Margaret Mead*

It is essential to first define the responsibilities of the SAC committee as a whole and then define additional specific individual member assignments. Based on a review of numerous programs throughout the country, Table 5 contains some general responsibilities which the SAC may be given by the school board.

Although a cooperative process is ideal and necessary to maximize the use of public resources, each agency is legally responsible for traffic control measures within its jurisdiction as defined by local ordinance and state law. Any recommendation from the SAC should, therefore, be evaluated for conformance with adopted engineering standards, for availability of funding, and for legal considerations by the implementing agency. The SAC should be sensitive to these issues in making their recommendations to local and state agencies. Active committee participation by local traffic engineers and public works staff should minimize infeasible recommendations from the SAC.

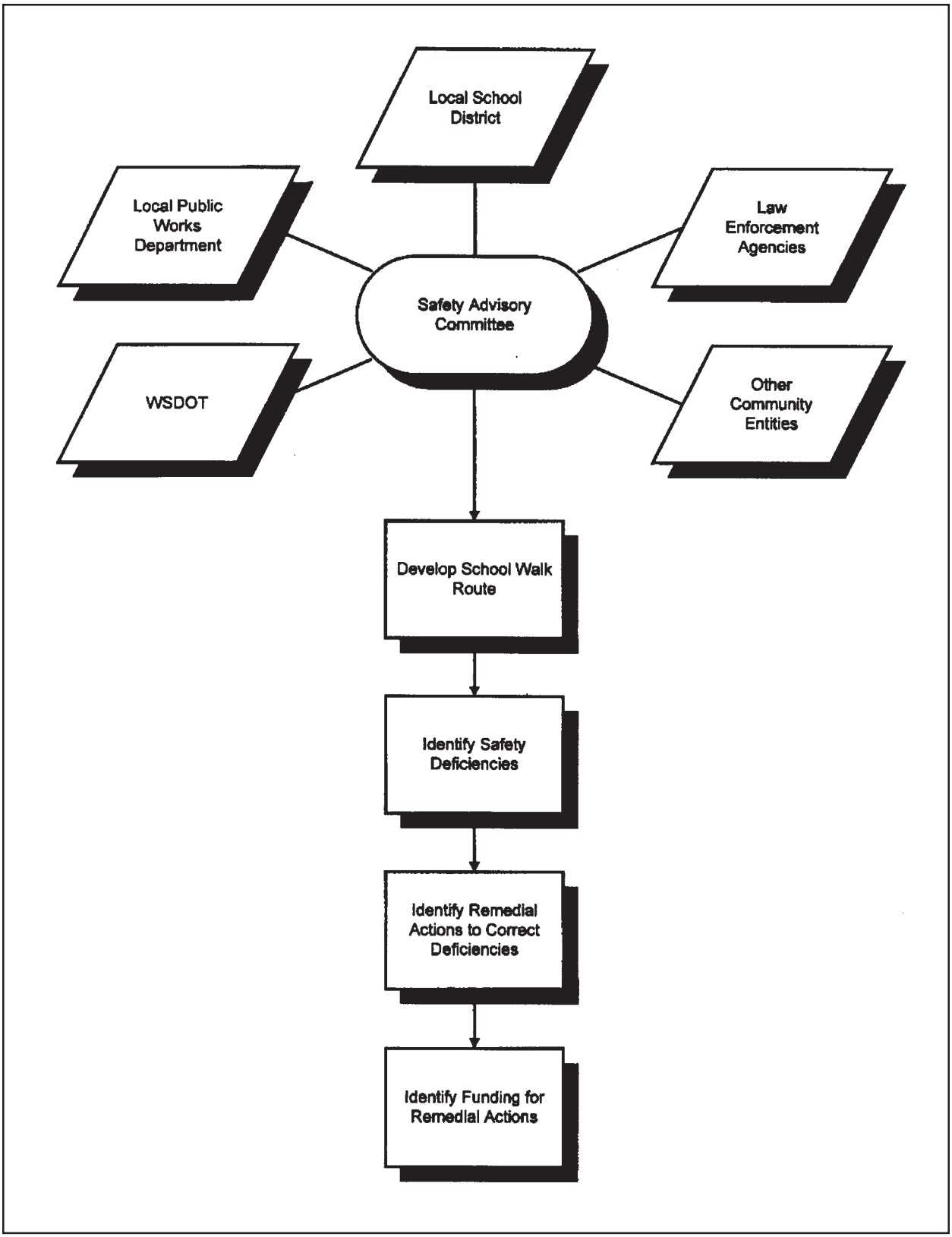


Figure 3. A community-oriented process

Responsibilities of a Safety Advisory Committee
1. Advise the school board on recommended policies on school walk trip safety education.
2. Assist the transportation supervisor in developing school walk routes for each elementary school, and other schools as directed by the school board.
3. Coordinate the receiving, reviewing, and resolution of suggestions and complaints about school trip safety.
4. Assist the superintendent in the development and support of school patrol policy and approve crossing areas for use of school patrol members.
5. Monitor school trip safety throughout the district.
6. Review pedestrian safety concerns and work with local public works agencies to implement remedial actions to correct safety deficiencies.
7. Recommend immediate actions for emergency problems to responsible units of government and monitor follow-up.
8. Coordinate communications regarding school pedestrian traffic safety programs and improvements.
9. Provide input to the decision process for new school location and design.
10. Decide appeals from parents concerning student transportation assignments (i.e., walking vs. bus).

Source: adapted from *School Trip Safety Program Guidelines*, Institute of Transportation Engineers, Washington, D.C., 1984; page 3.

Table 5. Responsibilities of Safety Advisory Committee

Getting Started

What is the use of running if we are not on the right road?

Proverb

Initiating a Safety Advisory Committee or Safe Walk Route Committee is usually started by the adoption of a board policy. Figure 4 illustrates such an implementing policy. Transportation supervisors should follow their school district's policy for forming committees or follow these guidelines:

- Limit the committee to 10 to 15 members with a broad range of interest groups represented. WAC 392-151-017 lists some suggested members. (Principals, teachers, parents, traffic engineer ing, law enforcement, community members)
- The transportation supervisor should be a voting member of the SAC and responsible for its administration.
- Include local public works and traffic engineering staff, law enforcement agencies, WSDOT, parent groups and schools as needed for specific discussions and appeals.

- Appoint members for 2 year terms with one-half turning over each year. Agencies should appoint their own representatives for the committee.
- Advertise broadly in local media to attract citizen members; selecting members by a lottery if a vast number of qualified people apply.
- Select a chairman to conduct the meetings and a secretary to record the minutes of meetings and handle correspondence.
- Invite a liaison from the School Board as a non-voting member.
- Report to the school district Superintendent at least once a year.
- Meet regularly and publicize committee actions in the school newspapers.

Sample Policy for School Boards

Pedestrian Safety Advisory Committee

The superintendent and/or the school board may appoint a Pedestrian Safety Advisory Committee for the development and maintenance of pedestrian safety to and from school. The district-wide committee may include representatives from school principals, district transportation, local law enforcement, public works departments of local and/or county jurisdictions, traffic engineering specialists and parents. The committee shall participate and advise on the following:

use of transportation services funds;
selection of safe walk routes;
education of students and parents about pedestrian safety and safe walk routes;
identifying and reporting potential safety concerns along walk routes;
development and support of school patrols;
safety around school campuses and on busses; and
other pedestrian safety issues.

The superintendent's designee responsible for coordinating the committee's work shall develop a description of the specific responsibilities and reporting relationships of the committee. This shall include a description of how the Safety Advisory Committee relates to individual school-level safety and/or school patrol programs and supervisors.

Reference:

RCW 28A.160.160	Student Transportation Allocation-Definitions
RCW 28A.160.150	Student Transportation Allocation-Operating Costs, Determination and Funding
RCW 46.61.385	School Patrol-Appointment-Authority-Finance-Insurance
WAC 392-151	Traffic Safety-School Safety Patrol
WAC 392-141-120	Transportation-Definition-To and From School

Figure 4. Sample school board policy for an SAC

Walking conditions appeals process

School children living within a one mile radius of their school are expected to walk to and from school except when school board policies dictate school bus transportation in response to local conditions. When a parent requests that his or her child be provided bus transportation rather than walk to school, the district should have an efficient and equitable process to address this request. The Safety Advisory Committee can fulfill that role. Figure 5 illustrates two appeals processes modeled after successful ones in Washington state.

Appeals Process 1
Parent Concern
Principal
Safety Committee Chairperson
Safety Advisory Committee
School Board

Appeals Process 2
Parent Concern
Letter to SAC
School Superintendent
School Board

Figure 5. Bus transportation request appeal processes

Three SAC models

Recognizing the wide variation in size, need and resources of Washington's 296 school districts, this *Guidebook* does not suggest a "one size fits all" approach to the Safety Advisory Committee process. Rather, we present three established models which could be adapted, in whole or in part, in other districts around the state.

A district-wide committee

The provision of pupil transportation is a district-centered function in Washington school districts. Only one SAC should be formed for a particular area. Separate committees for each school in the area are inappropriate and should be strongly discouraged in most districts. However, in large districts or those covering multiple jurisdictions, separate committees might be formed for sub-areas of the district or for schools within individual jurisdictions. Generally, though, specific problems and issues relating to school trip safety at a particular school should be handled by the SAC through a district-wide appeals process. A district-wide committee encourages equitable treatment of all schools and students with similar circumstances.

Districts with multiple SACs

Although it is most desirable to have only one SAC for a school district, some districts are so large that they encompass several jurisdictions (i.e., cities and counties) with vastly different development patterns and walk route conditions. In these cases, the district may elect to set up two or more SACs that reflect these differences. In such cases, the transportation supervisor, who serves on all SACs, should ensure that decisions are consistent among SACs to the extent possible.

Districts without a formal SAC

When a SAC is not formed or does not exist for one reason or another, professionals in law enforcement, school transportation, school administration, traffic engineering and public works should meet informally to coordinate their activities. In this manner, much of the mission of a SAC may be accomplished without formally establishing a committee. This model can be useful in small or rural districts which do not have resources to support an extensive committee effort.

In this instance, the transportation supervisor can work directly with a representative from the local public works agency to review walk routes, examine "hazardous walking conditions" locations or other pedestrian safety concerns and help the agency develop and implement remedial actions.

Expected outcomes

What concerns everyone can only be resolved by everyone.
Durrenmatt

If properly implemented by school districts, Safety Advisory Committees have a great potential to provide safer walkways for children. Both the district and the committee members should clearly understand: (1) the SAC's goals, roles and procedures; (2) how the SAC's recommendations will be used by the district. Creating and using a SAC requires a considerable commitment by the district as well as the committee's members. Although an advisory committee's advice is just that—advice — you cannot solicit advice and then consistently ignore it. Schools and agencies that do so — or are perceived to be doing so — soon experience suspicion and hostility in their relationship with their advisory committees. On the other hand, a good advisory committee process can expect to achieve these results:

- All interest groups learn to recognize and appreciate several different, legitimate points of view.
- The polarized interests are not tempted to "grandstand" and to further polarize and harden their positions.
- Representatives of the various interests come to know — if not "like" at least "respect" — each other.

- The Committee finds, focuses on, and builds upon areas of agree ment — no matter how small or how large — rather than focusing on the areas of disagreement.
- There is a time to establish a long-term, on-going working relationship among the interest groups, thus providing opportunities for making trade-offs and compromises among competing issues and interests.

Enforcement

Enforcement is a critical part of a Student Pedestrian Safety Program. Visible enforcement efforts remind both drivers and pedestrians to follow the rules. The law enforcement agency should visit the school site frequently and patrol the school routes, giving warnings or tickets to pedestrians and drivers as they are warranted.

Recognizing the need to emphasize traffic safety near schools, the 1996 State Legislature passed Substitute House Bill 2518 which resulted in a doubling of fines for all traffic law violations in school speed zones. The additional revenue generated by these fines are to be used by the Washington Traffic Safety Commission to fund projects in local communities to improve school zone safety. (see sidebar)

1996 State Legislature doubles fines for speeding in school zones (RCW46.61.440)

Recognizing a dangerous trend of drivers to speed in school zones across the state, the 1996 Legislature amended RCW 46.61.440 increasing penalties for speeding infractions in a marked school or playground crosswalk. School or playground street crossings are considered marked when fully posted with standard school or playground speed limit signs. The speed zone at the crosswalk extends three hundred feet in either direction from the marked crosswalk. Anyone speeding within a school or playground speed zone shall be fined a penalty equal to twice the penalty currently assessed under RCW 46.64.110.

Fifty percent of the money collected is to be used by the Washington Traffic Safety Commission solely to fund projects in local communities to improve school zone safety.

Enforcement activities which contribute to better student pedestrian safety include:

- Parking restrictions near schools – warning parents not to create traffic jams at schools during pick up and drop-off hours by illegally parking at the school and ensuring that parked cars and trucks do not block sight lines for drivers passing the school;
- Strict speed enforcement – along streets near schools and for compliance with speed limits, and where appropriately signed, reduced speeds in school zones;
- Vehicles stopping for pedestrians in marked or unmarked cross walks – enforcing the state's crosswalk law which require drivers to stop and remain stopped to allow a pedestrian to cross the road in an unmarked or in a marked crosswalk when the pedestrian is within one lane of their half of the roadway; and
- Warning pedestrians to cross at crosswalks – this practice is difficult to enforce in rural areas where few crosswalks exist, but in urban and suburban areas, pedestrians should be reminded to cross at intersections.

Many jurisdictions have established neighborhood "speed watch" programs to educate, remind and warn drivers of reduced speed limits in residential areas. Options include arming volunteers with a radar gun and a reader board which shows the approaching vehicle's speed, or an automated radar trailer which has a speed limit sign, and a readout showing the vehicle's speed. Although not enforcement *per se*, these activities can be effective in reducing speeds through school zones.

Appendix: Pedestrian Safety Program Resources

(as of August 1995)

AAA Washington
1745 114th Ave. SE
Bellevue, WA 98004-6930
(206) 462-2222

- Excellent source of materials, teachers guide and curriculum material, brochures, color books, colorful posters and a number of videos relating to child pedestrian safety and traffic. Brochures for parents such as The Safest Route to School, Parents Can be Serious Traffic Hazards, Preschool Children in Traffic. Supplies crossing guard patrols equipment and recognition.
- Films and videos sold at cost or loaned at no charge. Printed material sold at cost.
- Information also available from local service centers.

Harborview Injury Prevention and Research Center
325 9th Avenue, Box 359960
Seattle, WA 98104-2499
(206)521-1520
Coordinator, Child Pedestrian Safety Programs
(206) 521-1534

- *Wary Walker Child Pedestrian Safety Curriculum.* Excellent K-4 program with intensive "hands-on" parent/child activity component; a school-based curriculum consisting of five classroom lessons and an outdoor video field day. The safety skills are taught by combining "real life" activities, modeling, and positive reinforcement. Videos, fun activity sheets, pedestrian safety rap song, a Map to Safety and other interesting props.
- Assistance available to organize and conduct childhood injury prevention projects in communities around the state.
- A catalog of materials developed by HIPRC is available.
- Materials available at no charge or at cost of production and distribution. A catalog of materials is available.

National Safety Council
1121 Spring Lake Drive
Ifasca, Illinois 60143-3201
(708) 285-1121 ext. 2075

- Teachers guide Willy Whistle, poster, parent materials, brochures, school bus drivers material, pedestrians safety. July 1995 publication. $55.

Washington Traffic Safety Commission
1000 South Cherry PD-11
Olympia, WA 98504
(360) 664-8426

- $500 mini grants available to Washington schools to develop pedestrian safety programs.
- "Ped Bee" Costume and program materials such as brochures, video, fact sheets, and promotional items.
- Master copies of materials available; some materials in quantity. No charge for materials.

Children's Resource Center
Children's Hospital and Medical Center
PO Box C5371
4800 Sand Point Way NE
Seattle, WA 98105
(206) 526-2201

- Information, educational materials and programs are available on childhood injury prevention topics via Children's Resource Line, Children's Resource Center, Speakers Bureau, etc.
- Most materials are available for loan or free of charge in limited quantities. Speakers are available on a limited basis.

Washington State PTA
2003 65th Avenue West
Tacoma, WA 98466
(206) 565-2153
1-800-562-3804 (9am-1pm)

- Provides injury prevention, safety resources and materials developed by the national and state PTA.
- Materials focus on motor vehicle, pedestrian, bicycle and school bus safety; child care and child abuse; alcohol and other drug abuse prevention; and latchkey programs.
- Resources are available to local PTAs and other community groups.
- Serves as a conduit for cooperating agencies and Washington Children's Safety network members' information.

Totem Girl Scout Council
P.O Box 300304
Seattle, WA 98103-9704
(206) 633-5600 or
1-800-552-0669

- Multi-faceted safety instruction with special focus on bicycle, water, home, and fire safety.
- Materials and instruction available primarily to members with willingness to share materials with other organizations.

Washington State Department of Health
Office of Emergency Medical Services and Trauma Systems
1112 SE Quince Street
Mail Stop ET-40
Olympia, WA 98504

- Consultation and technical assistance is provided to eight regional EMS councils to implement injury prevention and public education activities.
- Inquiries about local activities and contact people should be made to this office.

American Academy of Pediatrics
P.O. Box 927
141 NW Point Boulevard
Elk Grove Village, IL
60009-0927
(708) 228-5005

- TIPP (The Injury Prevention Program) sheets provide guidelines for the prevention of motor vehicle and pedestrian accidents. A variety of brochures, buttons, t-shirts and checklists are also available.
- Charges vary for individual handouts and complete sets of materials.

National Highway Traffic Safety Administration
U.S. Department of Transportation
Jackson Federal Building, Room 3140
915 2nd Avenue
Seattle, WA 98174
(206) 220-7640

- Films, brochures, flyers and videos are available on vehicle, bicycle, pedestrian, motorcycle, and traffic safety, including use of air bags, safety belts and child safety restraints. A program specialist is also available for presentations, training and/or lectures on these subjects.
- Statistical information and facts are available on the above topics.
- Films and videos are available on a loan basis only. Brochures, flyers and handouts available on a very limited basis.

Camp Fire Boys and Girls
Central Puget Sound Council
8511 15th Ave. NE
Seattle, WA 98115
(206) 461-8550, ext.42

- Although broader in content, classes include pedestrian self reliance classes that teach safety techniques. Offered and may be scheduled at any school or preschool upon request:
- *I'm Safe and Sure* and *I Can Do It:* For the Preschool or Kindergarten child. In this course, your first through third grade child can gain self-confidence as he or she is taught to be aware of danger and learns safety skills.

Wild Feet Pedestrian Program
South Central Region EMS and Trauma Care Council
Injury Prevention Committee
P.O. Box 629
Sunnyside, WA 98944
(509) 574-1555
(509) 575-7749 fax
(509) 839-9023

- Effort is focused on teaching children to be more visible.
- Wild Feet - reflective decal's for bike helmets, backpacks etc.

Office of Superintendent of Public Instruction
Old Capital Building
P.O. Box 47200
Olympia, WA 98504-7200
(360) 753-0235
(360) 586-3946 fax

- Materials to assist in presentation of basic rules of school bus ridership. Includes some pedestrian safety.
- MY SCHOOL BUS video, teacher material, take-home pamphlet.

National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW Suite 200
Washington, DC 20036
(202) 463-8405 phone
1-800-760-NBPC
(202) 463-6625 fax

- Designed to be a central point of contact for organizations. Database of information including research, program materials and audio visual materials Monday-Friday 9am to 5pm.

City of Bellevue Neighborhood Traffic Program
301 116th Avenue SE
P.O Box 90012
(206) 462-4598
(206) 637-5272 fax

Well developed Community Pedestrian Safety Program in
- Pedestrian Safety Materials, posters, brochures and curriculum guide
- Siggy the Traffic Signal Assemblies
- Ped Bee costume available for schools, BEE SEEN reflective stickers.

Outdoor Empire Publishing Inc.
511 Eastlake Ave. E, P.O Box 19000
Seattle, WA 98109
(206) 624-3845
(206) 340-9816 fax

Supplemental Materials
- Pedestrian Safety Coloring book - Safe Feet K-5
- 10 Little Pedestrian Indians brochure
- Bicycle, "Danger Zone", School Bus Materials
- Customized orders

National Association for the Education of Young Children (NAEYC)
1509 16th Street NW
Washington, DC 20036
(202) 232-8777
1-800-424-2460

WITS Program, a series of colorful storybooks that provide a complete foundation in traffic safety.
- Storybooks introduced at six month intervals.
- Nine parent guides about childs developmental levels.

Puget Sound Regional Pedestrian Safety Coalition
Meets Quarterly
State Traffic Safety Commission
(360) 664-8426
(360) 586-6489 fax

- Groups interested in traffic and pedestrian safety meet quarterly to share resources.

Spokane County Traffic Commission
Meets 1st Tuesday of the month
(509) 456-3600

- Sponsor Ped Bee Program, Curriculum, stickers
- Community Groups share resources

Community Organizations and Agencies

- Many other organizations and agencies are involved in childhood injury prevention. Suggested groups to contact for ideas, materials, and assistance in your area include:

Police Department
Fire Department
School District Health Services
Health Professionals
Youth Organizations
Service Organizations
Media Representatives
Hospitals
Local or county Health Departments and Districts

CHILDREN:

- Go directly to and from school or the school bus stop.
- Cross at corners.
- Cooperate with police, school safety patrols and adult crossing guards.
- Search in all directions for approaching vehicles before crossing any street.
- Obey all traffic signals.
- WALK across streets. Allow yourself plenty of time.
- Watch for vehicles that might turn.
- If you must walk on roads that have no sidewalks, walk facing traffic and as far from the roadway surface as possible.
- Be extra alert in bad weather. Drivers have trouble seeing and stopping in bad weather.
- If you must walk after dark, wear something reflective or light-colored and carry a flashlight.

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AMERICAN AUTOMOBILE ASSOCIATION
TRAFFIC SAFETY AND ENGINEERING DEPARTMENT
1000 AAA Drive
Heathrow, FL 32746-5063

Stock # 3201

Printed in U.S.A. Printed on recycled paper

SAFE KIDS are no accident!

THE SAFEST ROUTE TO SCHOOL

A Guide for Parents

TO PARENTS AND CHILDREN:

Please sign this statement and return it promptly.

- ❑ We have worked together on the safest route from home to school.
- ❑ We have talked together about pedestrian safety.
- ❑ We have walked the safest route to school or the bus stop together.
- ❑ We have discussed safe walking rules to follow every day.

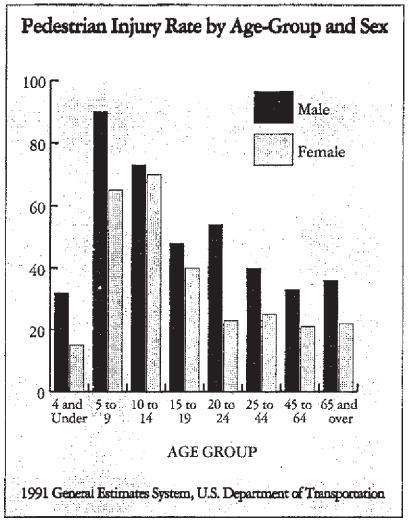
Parent/Guardian signature: _____

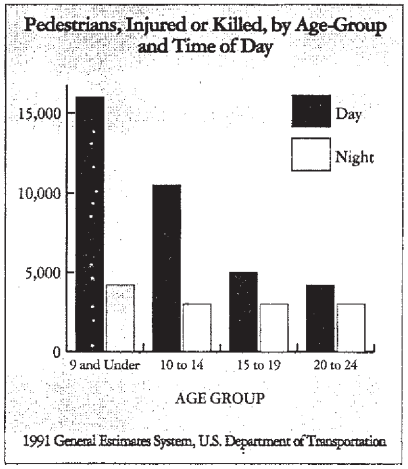
Child's signature: _____

School: _____

Date: _____

Traffic collisions are the leading cause of death for children under 15 years of age. In fact, almost one-third of all pedestrian/vehicle casualties are children in this age group. Nearly eight out of every 10 pedestrian/vehicle collisions involving children under 15 occur during the hours of daylight, dusk, or dawn.



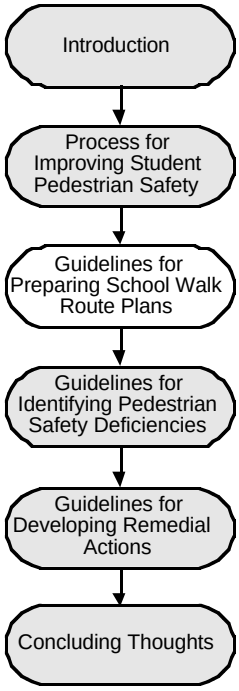


Children's involvement in traffic collisions peaks between five and nine years of age — when youngsters are just beginning school. Children in this age group generally lack the knowledge and experience needed to deal safely with many traffic situations. That's why traffic safety education is so important, both at school and in the home.

You can lessen the hazards your children face — by teaching safe walking habits and involving your children in the selection of the safest route to travel to and from school.

PARENTS:

- Discuss the safest route to and from school or the school bus stop.
- Map out the route you help your children select.
- Talk about why it is safer to cross at some corners rather than others — and to use crosswalks.
- Walk along with your children on the safest route you've helped them select, so they may become familiar with it.
- Discuss the meanings of the traffic signals and markings along the route to school or the school bus stop.
- Help your children understand how important it is to cooperate with police, school safety patrols and adult crossing guards.
- Teach your children to stop, listen, and look for approaching and turning vehicles, especially those turning right on red.
- Stress the importance of allowing enough time to cross the street safely.
- Make sure your children understand they must walk, not run, across the street — and continue to look for vehicles.
- If your children have a good understanding of left and right, introduce the concept of looking left-right-left before crossing.
- Encourage and praise your children for following guidelines for safe walking every day.
- Above all, set a good example for your children — their actions and attitudes are modeled after yours!



Chapter 3
Guidelines for Preparing School Walk Route Plans

This chapter provides guidelines and step-by-step procedures for preparing walk route plans for schools in Washington. The selection of specific walk routes and the preparation of the route maps depend on the application of professional judgment by school staff, resulting in a reasonable, though not necessarily perfect, walking path from home to school. No guidebook can cover all situations, nor can it replace the need for common sense application of safe walking principles in the field by school district staff.

The goal of the procedures in this chapter is a school walk route plan. Figure 6 shows a good example — a final walk route map that can be distributed to parents and students. This map presents the walk routes in a clear and concise manner and avoids extraneous information which may confuse its audience.

The first step is for the school board or superintendent to assign responsibility for developing the walk route plans. This can be the transportation supervisor, the principal of each school, the school security department or other person(s) designated by the School Board or the Superintendent of the school district. Since the transportation supervisor for each district is responsible for bus transportation, and since walk route plans are so closely tied to bus transportation funding for pupils within

one mile of their school, it is strongly recommended that the school walk route plans be developed by or under the direct supervision of the transportation supervisor.

Guidelines for Selecting Specific Walk Routes

This section presents general guidelines for selecting specific routes for children to walk between their neighborhood and their school. Four key principles are shown in Table 6. These are only guidelines and do not take the place of professional judgment in choosing the safest walking path.

The objective in selecting a school walk route is to minimize roadside and roadway crossing conflicts to the extent practical. In some cases, a child may have to walk a little farther in order to follow the planned school route. In selecting the route, however, avoid requiring the child to walk more than a block or two out of the way or the selected route will likely be ignored.

Guideline	Explanation
Maximize the use of existing pedestrian crossings and crossing protection	Include intersections with existing stop signs, marked crosswalks, traffic signals, etc., wherever possible in the school routes. If children will be walking routes during dark hours of the morning in winter, consider using streets with lighting.
Select the safest crossing locations	Determine the safest place for children to cross by visiting each potential crossing location and noting existing roadway and traffic conditions. Perhaps the street to be crossed may be narrower at one place than at another, or there may be more natural gaps in traffic at one location as compared to another. Visibility, parking conditions, speed, and accident records are a few of the many factors that should be analyzed in developing the plan.
Group children along school routes for better visibility an driver awareness	Develop routes that group children so larger numbers cross together at school crossing locations. More children at a location makes the motorist more aware of the crossing, increases driver compliance with in stopping for crosswalks, and helps justify the installation of more extensive crossing protection devices. If large numbers of children will be gathering at major intersections, look for adequate shoulder or sidewalk areas to provide refuge while children are waiting to cross.
Minimize duplicate school crossings	Minimize the number of crossings along a street for school routes. Because funds for school crossing enhancements are often limited, fewer crossings yield not only less exposure to conflicts with vehicle traffic but also enable local jurisdictions to concentrate resources to make improvements where they affect the greatest number of children. In addition, driver awareness and respect for school crossings is increased if they are less numerous.

Source: adapted from *School Traffic Safety,* Illinois Department of Transportation, Springfield, IL; undated.

Table 6. Guidelines for walk route selection

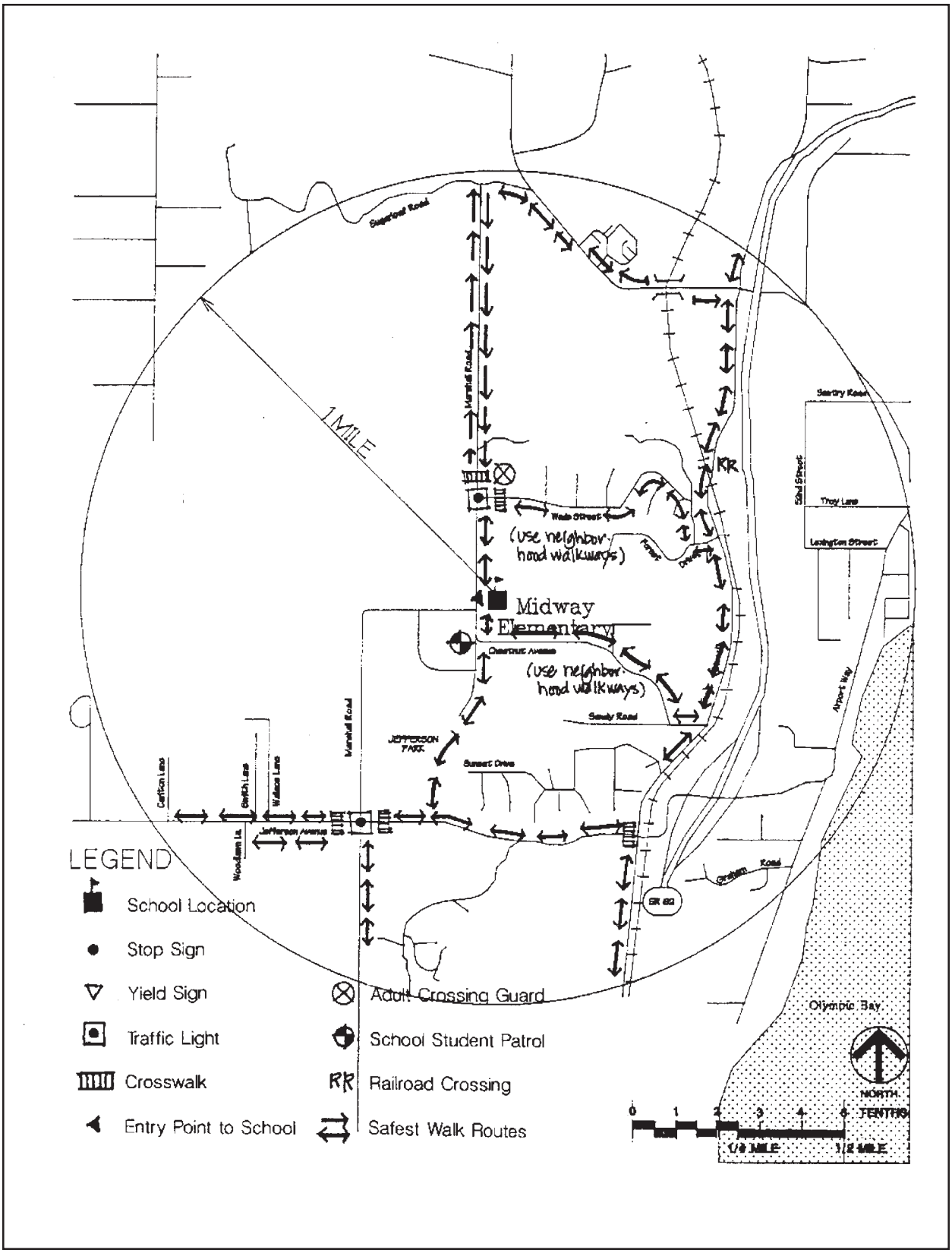


Figure 6. A typical school walk route map

The walk route map should show the ***safest*** path between home and school, given the existing walking conditions and alternate routes for the area under consideration. Some routes may have one or more sections with pedestrian safety concerns. Chapter V of this *Guidebook* shows how school districts can work with the local public works agency to develop and implement remedial actions for these safety concerns.

Shoulder/sidewalk conditions in selecting a walk route

A concern raised by many school transportation directors is how to route children along streets and roadways which do not have adequate shoulders or sidewalks. In such cases, there is often a choice between directing the children to cross a road to walk facing traffic on a shoulder or sidewalk, or to direct them to walk a short distance along the road with their backs to traffic. This decision must be made on a case-by-case basis, taking into consideration the age of the children, the width of roadway, the volume and speed of the traffic, sight distances along the roadway and at crossing points, and the walking distances involved. The following discussion may assist in making this judgment.

Washington's "rules of the road" for pedestrians state:

> **RCW 46.61.250. Pedestrians on roadways.**
> (1) Where sidewalks are provided it is unlawful for any pedestrian to walk or otherwise move along and upon an adjacent roadway. Where sidewalks are provided but wheel chair access is not available, disabled persons who require such access may walk or otherwise move along and upon an adjacent roadway until they reach an access point in the sidewalk
>
> (2) Where sidewalks are not provided any pedestrian walking or otherwise moving along and upon a highway shall, ***when practicable,*** walk or move only on the left side of the roadway or its shoulder facing traffic which may approach from the opposite direction and upon meeting an oncoming vehicle shall move clear of the roadway. [Emphasis added]

On roadways with sidewalks on one or both sides, the statute is clear that students must be directed to walk along the sidewalk on their side of the street, or to cross the road, if necessary, to reach the sidewalk if it exists on only one side. Students should be directed to cross at a location where it is safest to do so.

On roads without sidewalks, the issue is not so clear because of the phrase "when practicable" in the statute. In general, students should be directed to walk on the left side of the roadway facing traffic. This allows them to observe on-coming vehicles and move as far to the left away from the traffic lane as they can safely do so under the prevailing conditions. This procedure should be followed on roadways which have

narrow shoulders on both sides of the road. Again, students should be directed to cross at a location where it is safest to do so. An example of this shoulder condition is shown in Figure 7.

Many suburban and rural streets and roads have adequate (at least five feet wide) shoulders on only one side, with narrow or no shoulders on the other. In these situations, the person preparing the school walk route map must decide whether it is safer to have children walking on the shoulder with their backs to traffic or to direct them to cross the road and walk on the road or on a narrow shoulder facing traffic. On roads with moderate or high traffic volumes, walking on a five-foot shoulder in the same direction as the traffic flow would probably be safer than walking in the traffic lane facing on-coming traffic without a safe refuge (i.e., shoulder) to retreat to when meeting a vehicle. On low volume roads, there is less likelihood of a driver meeting an on-coming vehicle and a pedestrian at the same time, and he or she could more easily encroach into the other lane to avoid a pedestrian; in this situation, it would probably be safer for the children to walk facing traffic, even if it means walking on the roadway.

Along roads with adequate shoulders on both sides of the road, children should generally be directed to walk on the left shoulder facing on-coming traffic. However, children may be allowed to walk on the shoulder on the side with the flow of traffic for a short distance in either direction to or from school if such action significantly *reduces the number of road crossings* they must make. This is particularly true on roads where the shoulders are eight feet wide or wider, or which have pedestrian pathways separated from the traffic lane.

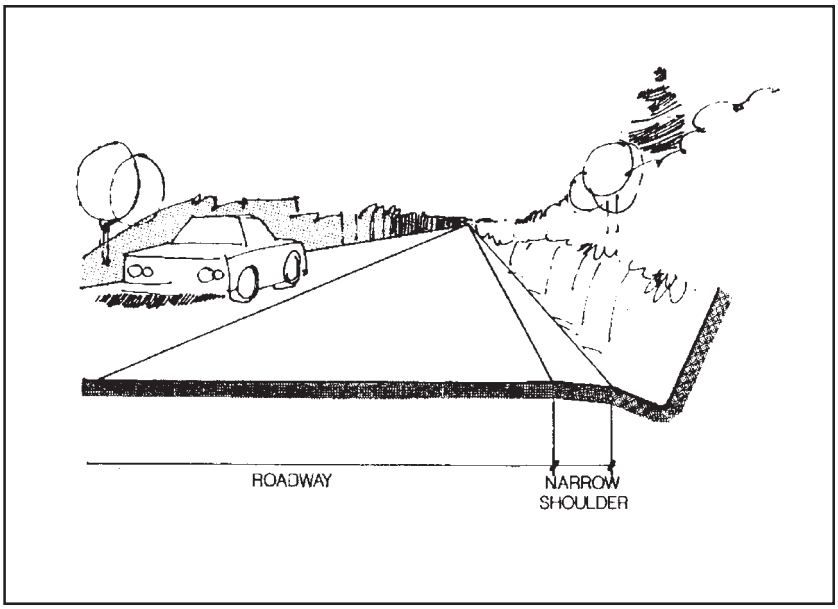


Figure 7. Inadequate shoulder example

Figure 8. Avoid extra crossings by walking on a wide shoulder with traffic

Figure 8 shows students walking along a pedestrian pathway adjacent to a grass shoulder to avoid crossing the street. Note that the street is four lanes wide with a planted median. There is no universal right answer, and the specifics of each situation must govern the decision.

Example route map

Figure 6, shown previously, provides a good example of a typical school walk route map. Children are routed along major roads with adequate shoulders or sidewalks to crossings where maximum protection is provided. It is important to keep the route plan updated. Changes should be made as school boundaries are moved, street improvements are made, or new subdivisions are built. Changes in child population distribution may create situations where only a few children are required to cross busy streets where child protection is limited. In some cases, crossing guards provided at locations of this type may be shifted to locations where a greater demand for them exists.

Walk Route Map Procedures
1. Form Safety Advisory Committee (SAC)
2. Prepare base maps
3. Inventory existing walking conditions
4. Inventory traffic characteristics
5. Design the walk routes
6. Prepare the draft walk route map
7. Review the route maps with the SAC
8. Have route maps approved by the School Board
9. Distribute and explain the maps
10. Evaluate the program

Figure 9. Walk route map procedures

Procedures For Developing School Walk Routes

In general, the transportation supervisor for each school district should be responsible for developing and implementing the school walk routes, in cooperation with the local law enforcement and public works agencies, and the principal from each school. He or she may be aided by the district's Safety Advisory Committee.

The step-by-step procedures summarized in Figure 9 suggest ways of developing, implementing and maintaining school walk route plans and creating clear and concise maps to show parents and school children the safest route to school. For some steps there are several alternative ways of accomplishing the task, thus allowing the school district transportation supervisor flexibility in matching the requirements of the step with the needs of the local situation.

Step 1. Form Safety Advisory Committee

The School District should form a Safety Advisory Committee (SAC) or initiate contact with local traffic engineering, public works and law enforcement agencies if no SAC is available. This step may require decisions and actions by the school board and should be initiated as soon as possible. The discussion in the previous chapter provides guidelines for organizing and running a SAC.

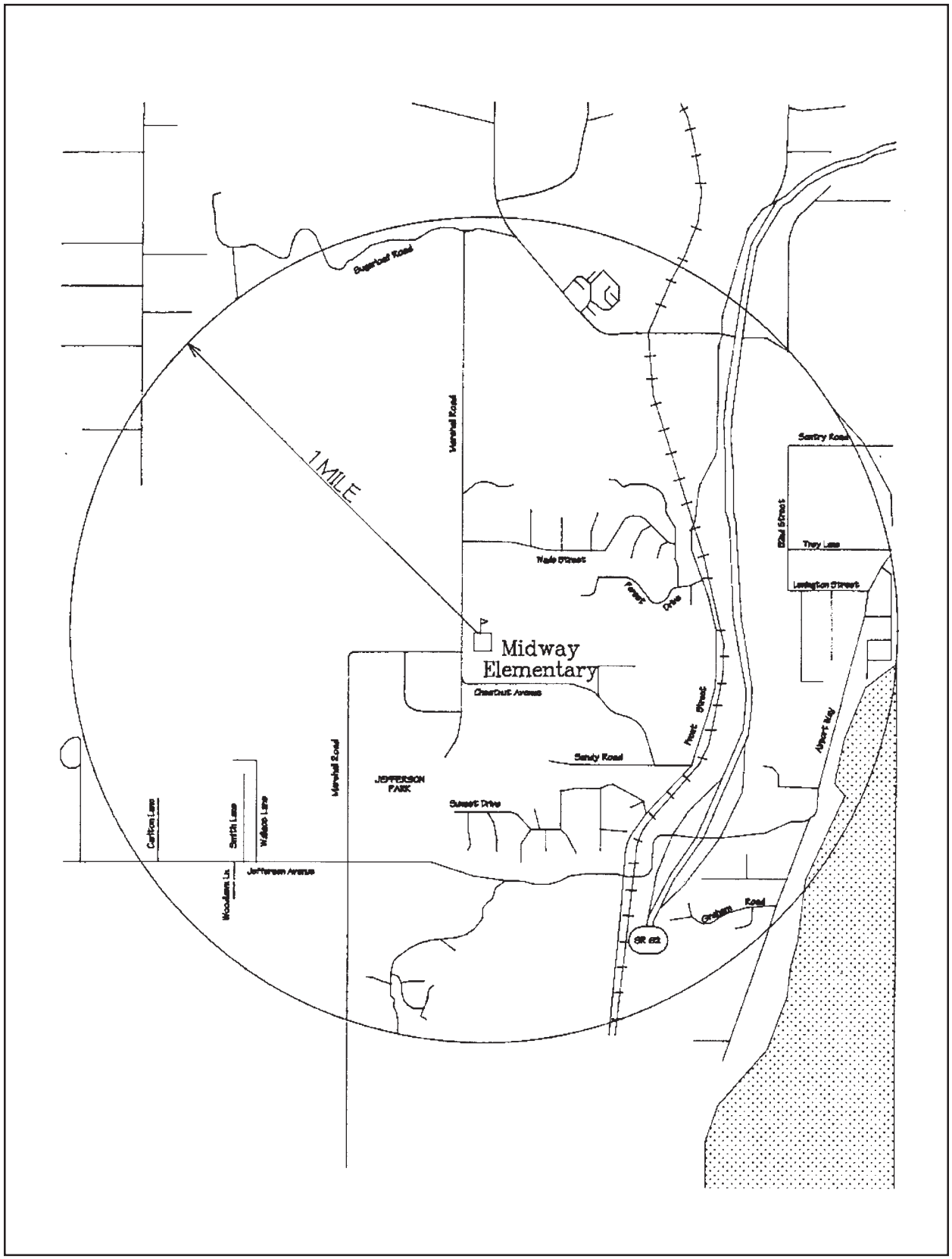


Figure 10. A typical school base map

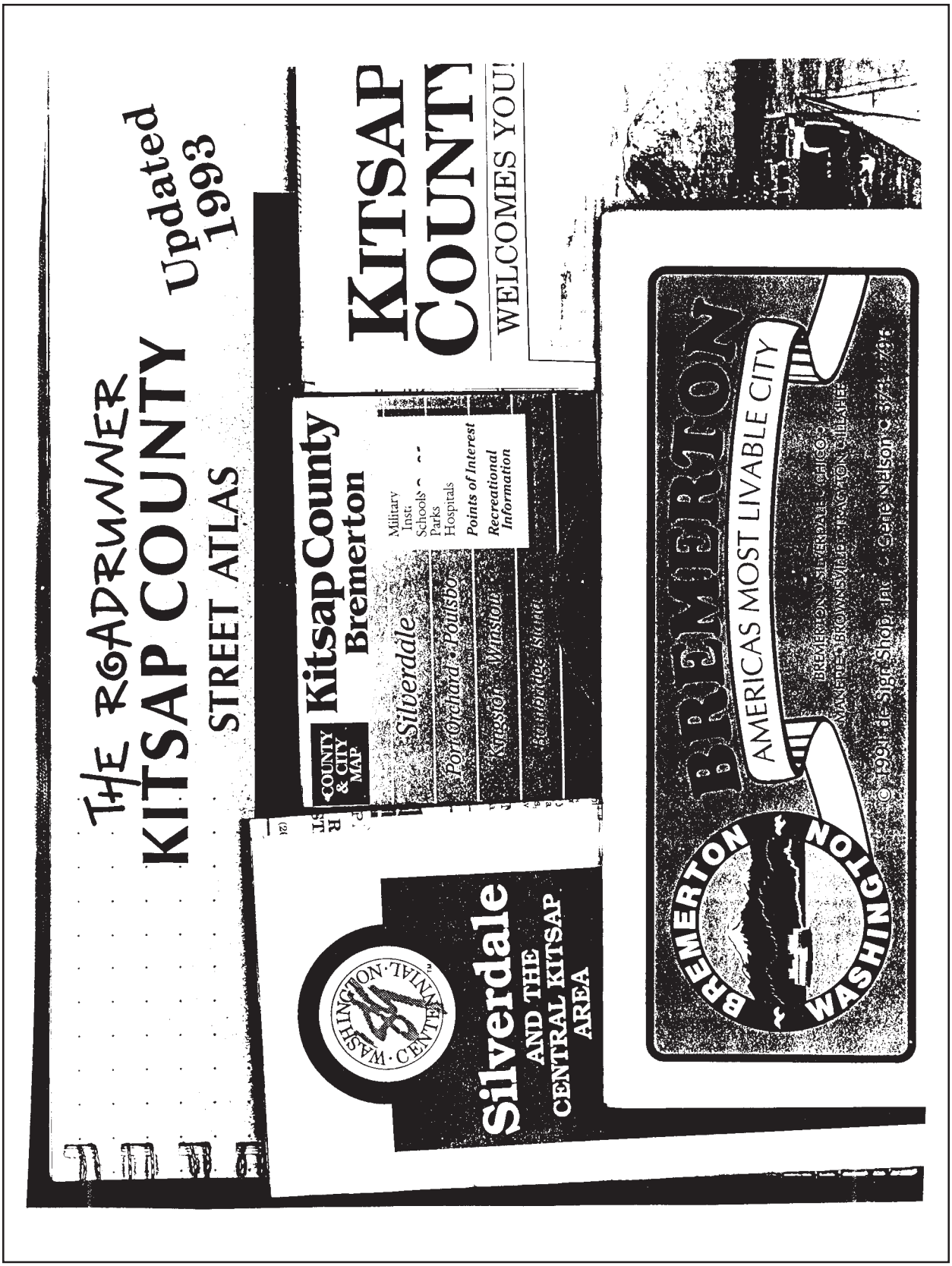


Figure 11. Typical source maps for walk route planning

Step 2. Prepare base maps for each school

Base maps are simply street maps of the attendance areas near each school as illustrated in Figure 10. The base map should be to scale and should be recent enough to show all major residential developments and streets within a radius mile of the school. Scales in the range of "1 inch equals 200 feet" to "1 inch equals 800 feet" are usually adequate.

As Figure 11 shows, there are many sources for base maps. Maps can often be obtained from city or county planning or public works agencies. By involving the local agency at this stage, the public works agency can be a partner in the process from the beginning. Many public works agencies in Washington have implemented Geographic Information Systems (GIS) with comprehensive, up-to-date maps of all streets in their jurisdiction. Some agencies can develop tailored maps for each school, showing not only existing streets and roads but also traffic and roadway data needed in step 4. These agencies may even be able to draw the school walk route maps in final form using their CAD system.

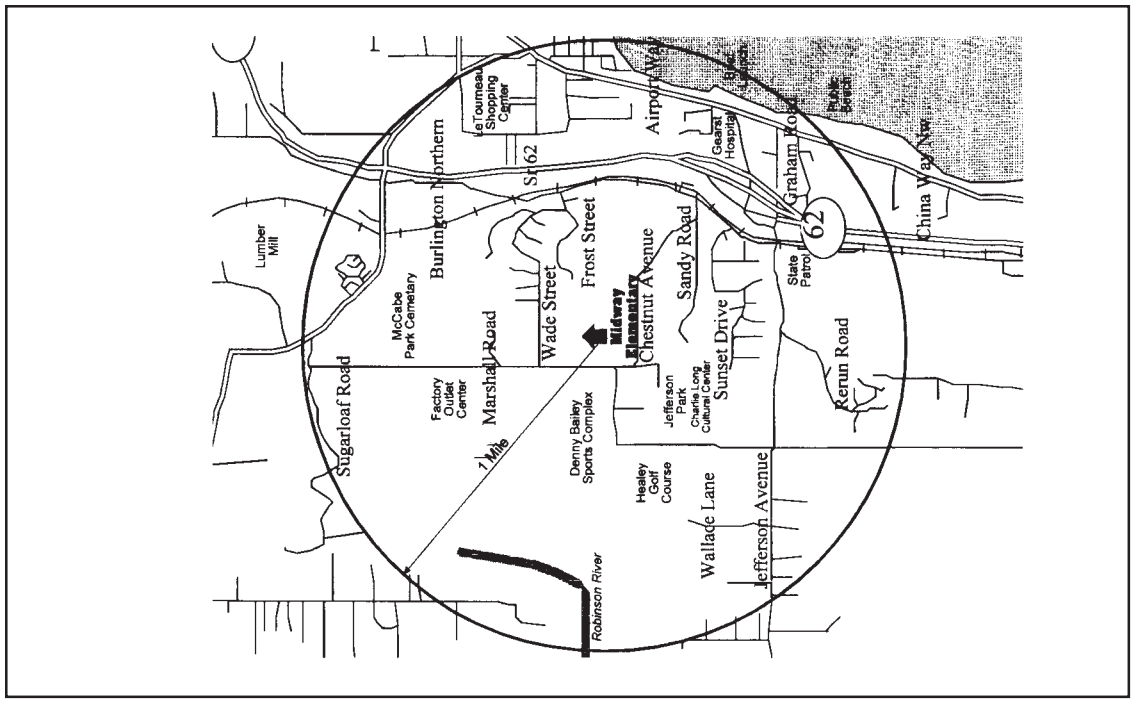
Private companies, such as Delorme Mapping Service, have also developed detailed street maps on CD ROM disks which can be purchased for a modest price. Other sources include chambers of commerce, real estate companies and economic development groups.

Many existing maps are too complex or cover too large an area for easy understanding by parents and students of the safest route between home and school. For example, a detailed map of streets, traffic signals and daily traffic volumes on key streets from the city traffic engineer contains very useful information for ***developing*** school walk routes, but ***drawing*** walk routes on the same map and handing it to the student would be inappropriate.

It is essential that the walk route maps be easily understood. The maps should provide only the information that is essential to conveying the location of the safest route to the parent and student. In districts with a second language spoken in the home, maps may be translated for ease of comprehension by those parents. Figure 12 illustrates the differences between a clear base map and one that is cluttered with extra information.

It may be necessary to make a tracing of the map that shows only streets, street names, street widths, and the school location. This tracing will become the original parent/student base map for that school. Portions of the overall map will be used to show walk routes for each neighborhood, or at least each cardinal direction to/from the school.

Remember that the map is the backbone of the school walk route safety program. Without a clear, concise, accurate base map, the walk route maps can cause confusion and may create safety concerns rather than alleviate them.



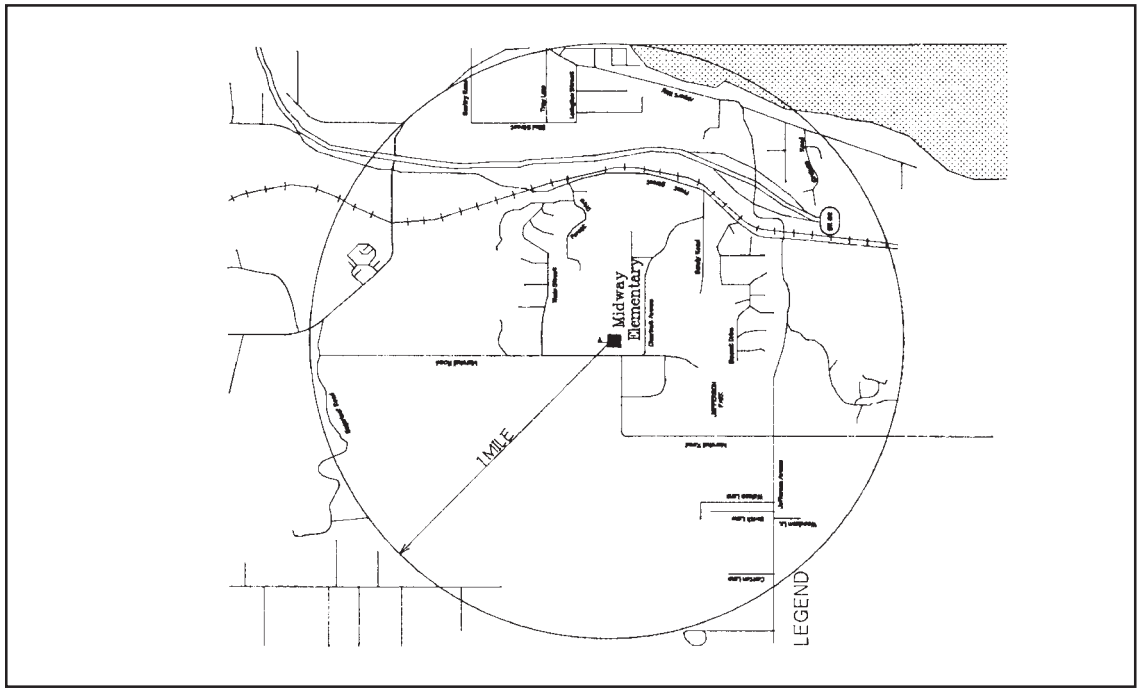


Figure 12. Clarity versus complexity

Step 3. Inventory existing walking conditions

Identify the existing walking conditions within the one mile radius of the school through a field inventory. The inventory base map should be drawn with preliminary walk routes in mind so that the staff person doesn't spend extra time collecting data on superfluous roadways. This can be done by eliminating areas within the one mile radius that are: outside of the school service area; qualify as neighborhood walkways; or are, for some obvious reason, not suited for inclusion in the "safest" walkway route. Figure 13 shows a typical map to use for the inventory step. The inventory is needed to assess existing pedestrian facilities to aid students walking to and from school. Collect the following information:

- school location and attendance boundaries;
- all stop and yield signs;
- traffic signals including presence of marked crosswalks and pedestrian signal indications;
- traffic signal timing and phasing for pedestrian crossings;
- number of lanes;
- parking areas;
- posted speed limits and warning signs, especially all 20 mph school speed limit zones;
- crossing guard locations, and school safety patrol locations;
- railroad tracks, including number of tracks and type of crossing protection;
- location of all crosswalks, including type of crossing protection offered;
- medians, pedestrian refuge islands and other pedestrian safety features;
- sidewalks, pedestrian paths and shoulders, including :

  condition and width of shoulders and sidewalks;

  whether shoulders are paved, gravel or grass, or non-existent;

  whether sidewalks and pathways are immediately adjacent to the traffic lanes or are separated by a planting strip or other means from moving traffic; and

  the location of drainage or irrigation ditches;
- high noise areas and other environmental obstructions to safe walking;
- major sight line obstructions as measured from the height of the children;
- other relevant pedestrian safety factors observed in the field; and
- bicycle lanes or paths.

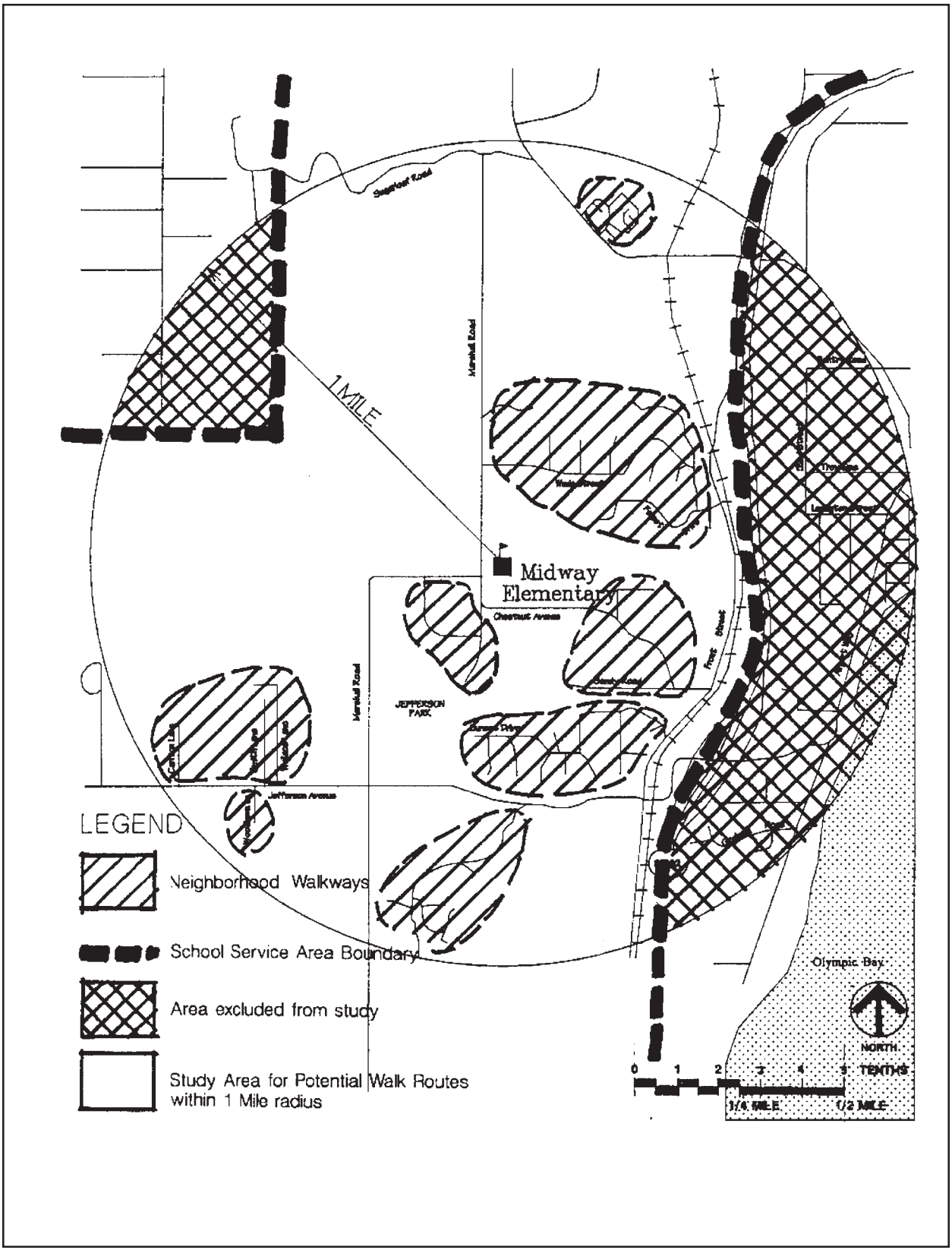


Figure 13. Draft inventory map

The inventory can be collected by walking or driving through the area and recording data directly on the base map. Photologging or video logging of principal routes from a moving vehicle using time-lapse or video cameras is another common inventory technique in traffic engineering. Many local public works agencies already have such logs of their roadways, or may have the proper equipment available.

Figure 14 illustrates a completed field inventory map of potential walk routes. The legend on Figure 14 shows the variety of symbols which can be used to identify the key information.

Step 4. Inventory traffic characteristics

Collect traffic volumes and traffic speeds on major streets within the school walking area from the local traffic engineering or public works agency to identify high volume streets. Also collect traffic volumes and speeds on minor streets close to school grounds to determine the magnitude of potential conflicts at crossing points. Ideally, this data should be collected during school pedestrian traffic periods, but daily volumes (Average Weekday Traffic volume, or AWDT) can be used as a surrogate if hourly volumes are not available. A rule of thumb is that peak commuter hour traffic is 7 to 12 percent of the daily volume.

Ask the traffic engineer or public works engineer to provide road information, planned improvements, high accident locations and specific information about any known pedestrian or bicycle safety concerns or problems near the school. Law enforcement officers can also provide information on safety concerns near schools.

A sample traffic characteristics map is shown in Figure 15. Note that the traffic data is simply added to the field inventory data shown previously in Figure 14 to make a composite map. This saves having to draw a separate map for traffic data, and reduces the potential for confusion between maps when designing the walk routes.

Truck traffic

Give special consideration to heavy truck traffic along walk routes and near schools. Avoid routing school children along or across roads with high truck volumes where ever possible. Highlight the potential need for adult crossing guards at unavoidable locations with high truck usage. Trucks may cause additional safety concerns because:

- They require a greater turning radius around corners.
- They pose sight restrictions while moving or parked.
- They need a greater length of time and distance to stop.
- It is easier for truck drivers to see pedestrians because the drivers sit much higher than automobile drivers; however, these same truck drivers have a much greater difficulty seeing students immediately in front of, along side, or behind their vehicles.

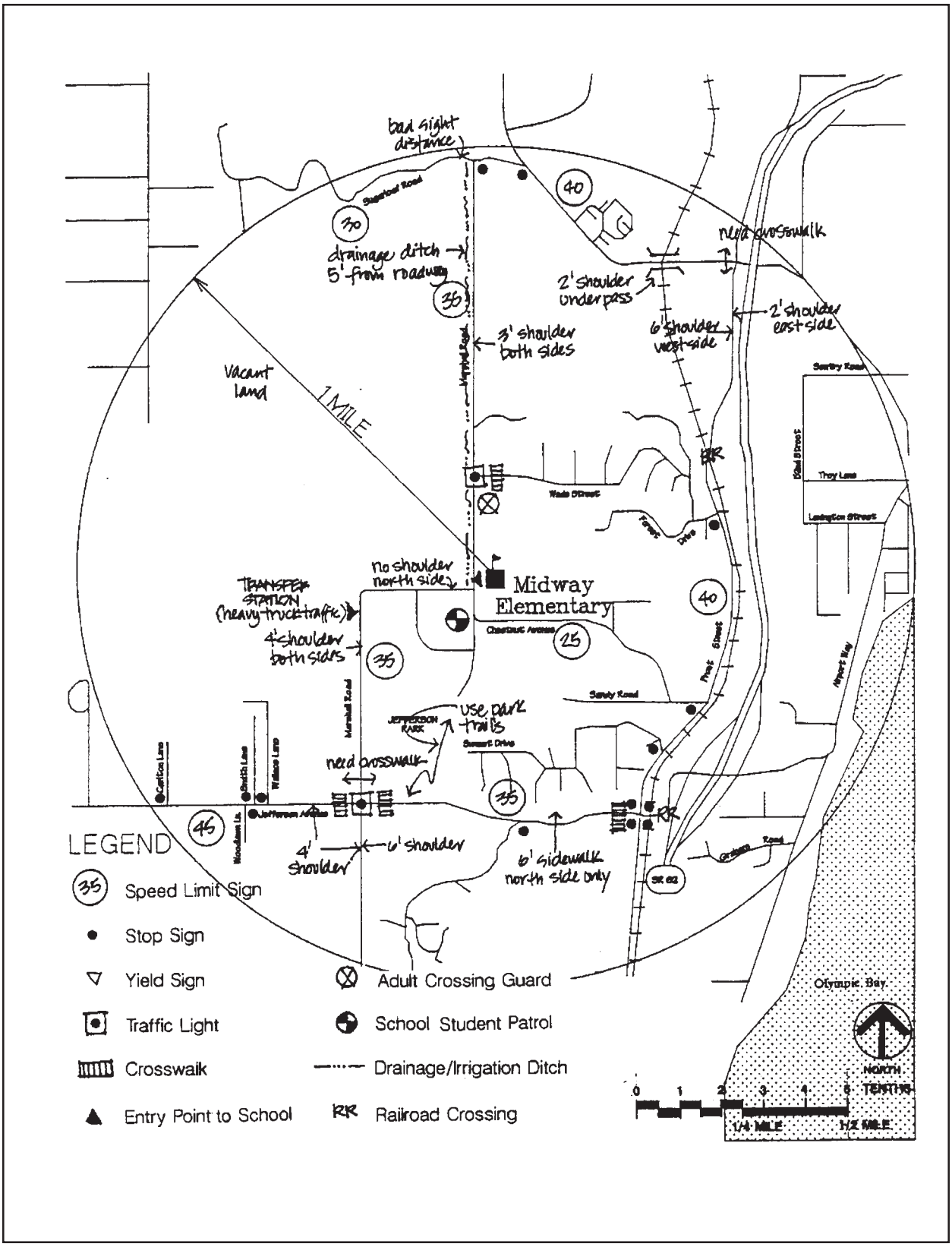


Figure 14. Walk route inventory map

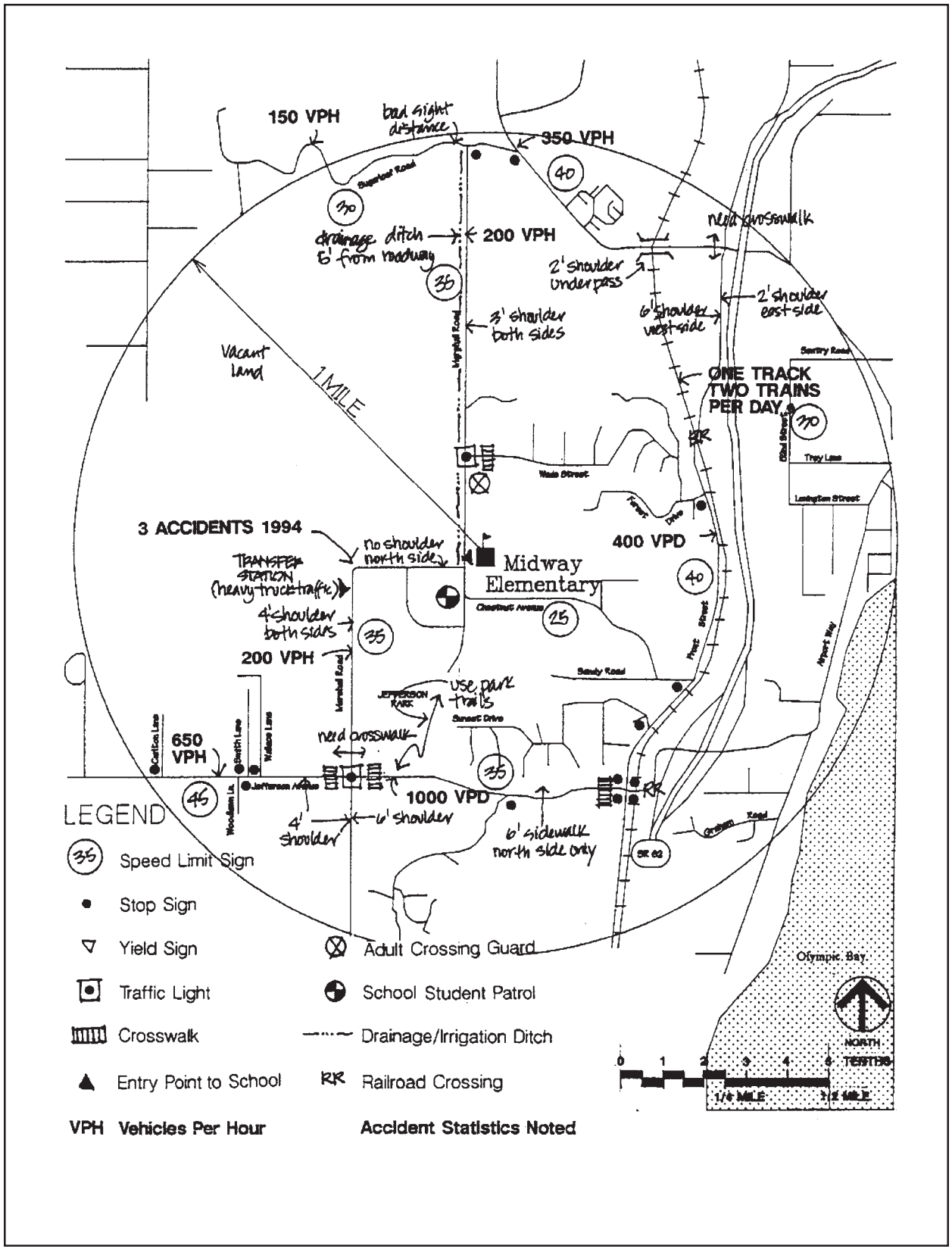


Figure 15. Traffic characteristics map

Step 5. Design the walk routes

Begin with the streets and neighborhoods near the outer limit of the mile radius from school and work inward to the school. Plot the walk routes on draft maps using sequential arrows indicating the direction of walking and the side of the street to be used. Consider both going and coming to/from school. Remember, existing traffic control devices (stop sign or traffic signals) may or may not be properly located with respect to the safest route to school.

Do not feel constrained to making the routes conform to the existing devices if there is a safer alternative. Midblock crossings should be designated as crossing locations if they are either signalized or supervised (crossing guard or school patrol). Figure 16 shows a walk route development map. Generally, the routes should be designed to assure that the school-age pedestrians from each neighborhood:

- Form into a group as soon as possible to be more readily visible to motorists;
- Cross the fewest number of streets to reduce vehicle-pedestrian exposures;
- Walk on sidewalks or paths where available;
- Walk the shortest possible distance on streets without sidewalks or wide shoulders;
- Walk on the left side of the road facing traffic on streets where practicable;
- Avoid high speed, high volume roads and roads with high truck volumes;
- Make maximum use of protective techniques, (crossing guards, school patrols, traffic control devices); and
- Use easements with walkways through parks or other available areas where student safety is maximized.

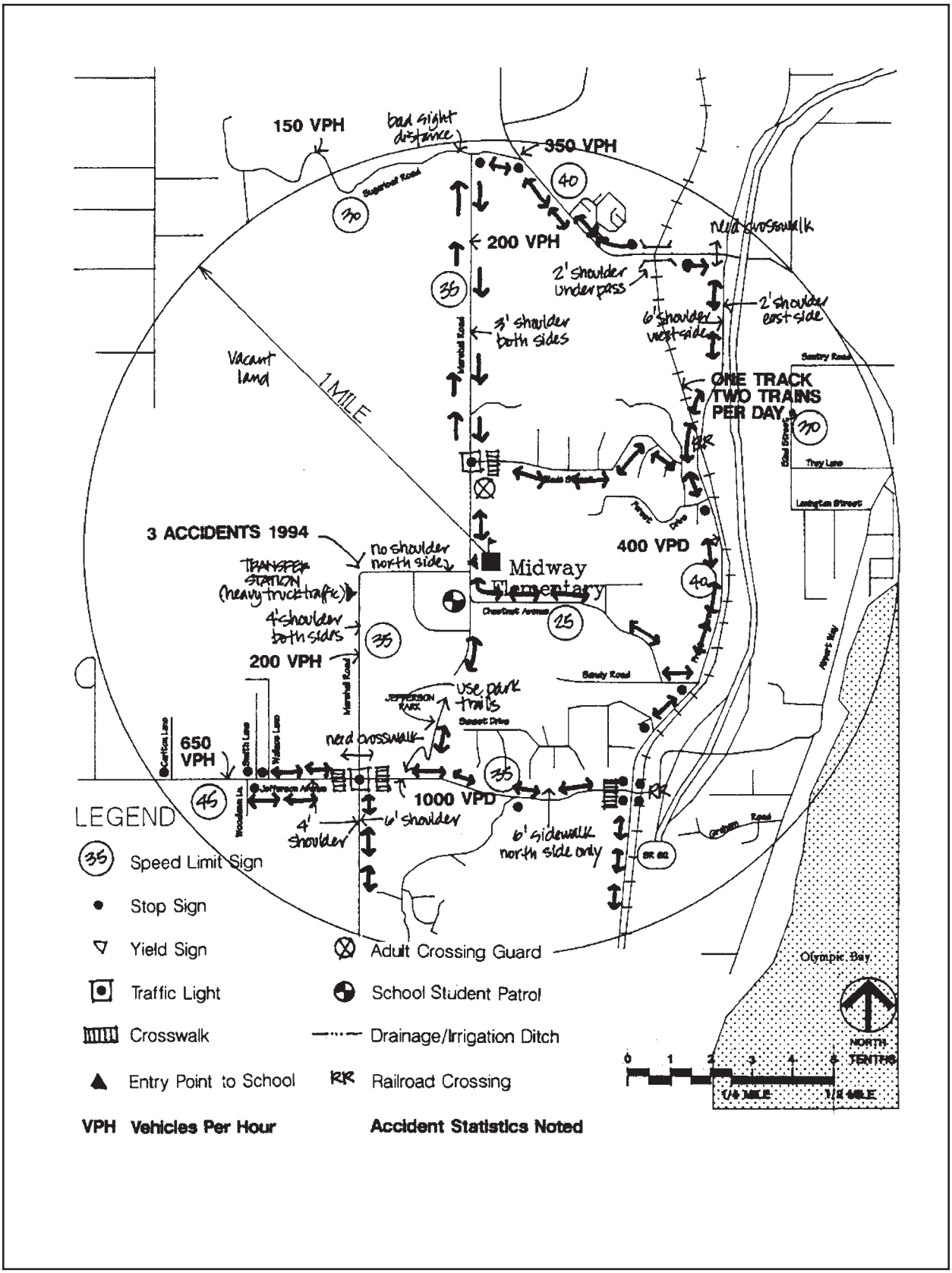


Figure 16. Walk route development

In determining the safest crossing locations, the following factors should be considered:

- traffic speeds,
- traffic volumes, traffic mix and pedestrian volumes,
- sight distance and roadway curves,
- type of area (residential, commercial, industrial),
- traffic control devices (signs and signals),
- width of street and number of lanes,
- visibility and sight distance limitations (shrubs, parked cars),
- adequacy of pedestrian signal displays and timing for children, and
- availability of assistance measures (crossing guards, school patrols).

Midblock crossings, like the one shown in Figure 17, are useful when:

- The crosswalk is supervised by an adult crossing guard, safety patrol or police officer,
- The crossing is signalized, and
- Proper signs and markings together with enforced curb parking restrictions are provided to assure sufficient visibility in the crossing area.

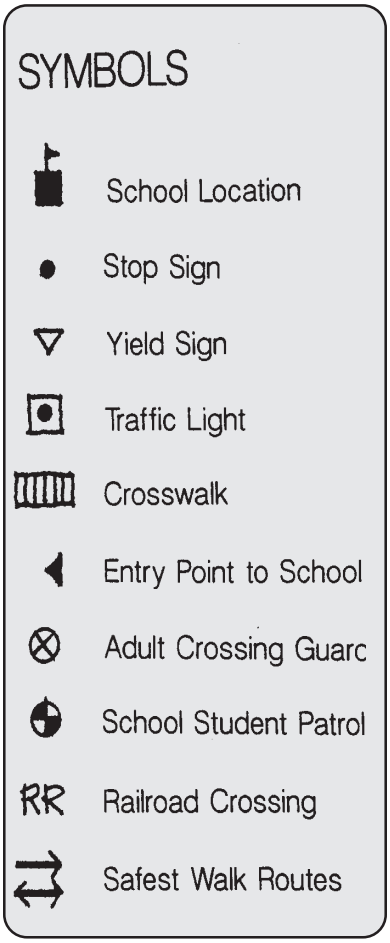
Figure 17. Mid-block crosswalk

The location where the pedestrian routes terminate at the school site should be well separated from car and bus loading and unloading zones.

Plot the designated route to school for each elementary school on the base map using arrows to illustrate the direction of travel. The crossings on the safe route should be "field checked" for visibility and sight line obstructions from both the drivers' and the children's viewpoints; remember that young school children are much shorter than adults. Crouch down if necessary to get the proper perspective at each crossing location. Be sure that all signals, signs, and crosswalks are functional and in the proper location. After the designated routes are issued to the students, additional field checks should be made to determine if the route is being used and is indeed realistic. A completed walk route plan is shown in Figure 18.

Step 6. Prepare the walk route map

From the base map for each school, trace a walk route for the maps to be given to students and parents. This map should present only the most relevant information to students and parents including the safest route to and from school, the school building, and the student's home or neighborhood. Some example maps are shown in the "Practical Tips for Preparing Maps" section later in this *Guidebook*.



Construct the maps so they are durable, comprehensible, conveniently sized and have a readable scale. The school walk route map should normally show the following, using the standard symbols shown in the maps and in the sidebar.

- School facilities
- School entrances
- Crosswalks, streets and sidewalks
- Traffic control devices affecting operation of the walk route
- Adult crossing guards
- School student safety patrols
- Designated routes for the students

A set of usage instructions should accompany each school walk route map. They can be printed on the front or back of the map for each student, or given in a separate letter to parents and students. A letter explaining the use of map could be printed on the map itself as shown in Figure 19.

Address the instructions to parents and/or children and include specific safety rules like those noted in a previous section. These explanations, instructions, and safety rules are an integral part of the map. In some cases it may be necessary to prepare notices to parents in languages other than English. The final walk route map is illustrated in Figure 20.

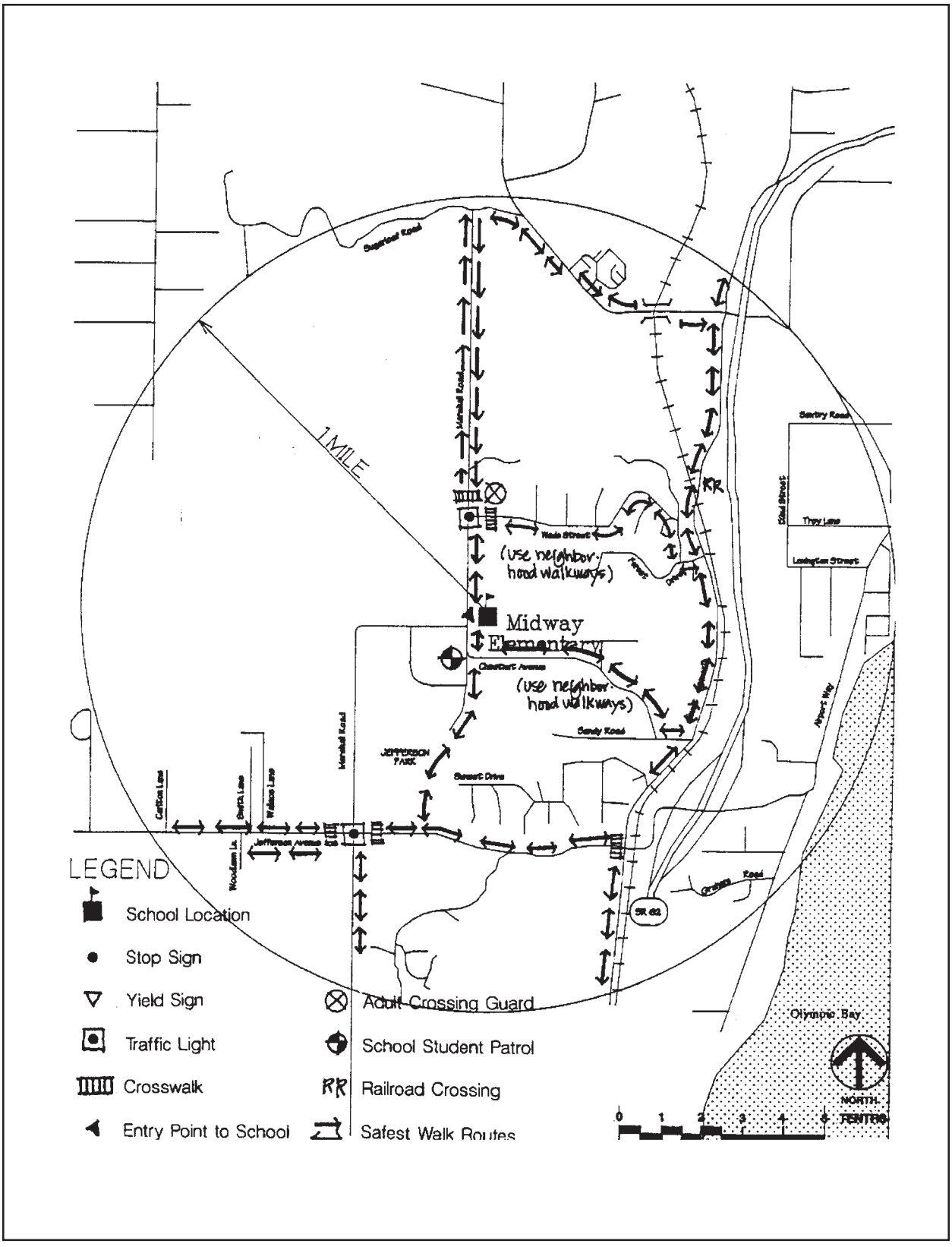


Figure 18. Complete route plan base map

Dear Parents,

This map shows the suggested safest walking route from each neighborhood within one mile of the Yourtown Elementary School. Following the arrows, select the best route from your home to the school, and mark it with a colored pencil, crayon or marking pen. This is the route your child should take to and from school.

Instruct your child to use this route and to cross streets (highways) only at the locations shown. You and your child should walk the route together to make sure the child understands the route. Observe marked crosswalks, stop signs, traffic signals and other traffic controls. Remind your child to obey WALK/DON'T WALK signals at signalized intersections and to always look both ways before crossing the street.

Sincerely,

Your School

Figure 19. Sample walk route map instructions

Step 7. Review the walk route maps

Prior to the distribution of the walk route maps, they should be reviewed by the Safety Advisory Committee and possibly with the PTA, principal and local police and engineering staff to assure understanding and agreement among responsible parties. If there is no SAC, then the appropriate community resources should be included in the review.

The walk route maps should be presented to the school board for their review and adoption prior to distribution. In addition to parents and students, copies of walk route maps for each school should be sent to the appropriate local traffic engineer, public works agency, law enforcement agency and WSDOT regional office (when state routes are affected by a school walk route).

Step 8. Distribute and explain the route maps

When maps are distributed to schools for distribution to parents and students, stress that the map is the backbone of the school walk route safety program. Teachers may help students identify on the map the route that they will take from their house to school and mark the route in a bright color on their copy of the map. Teachers can discuss why children must cross streets and highways only at specified locations.

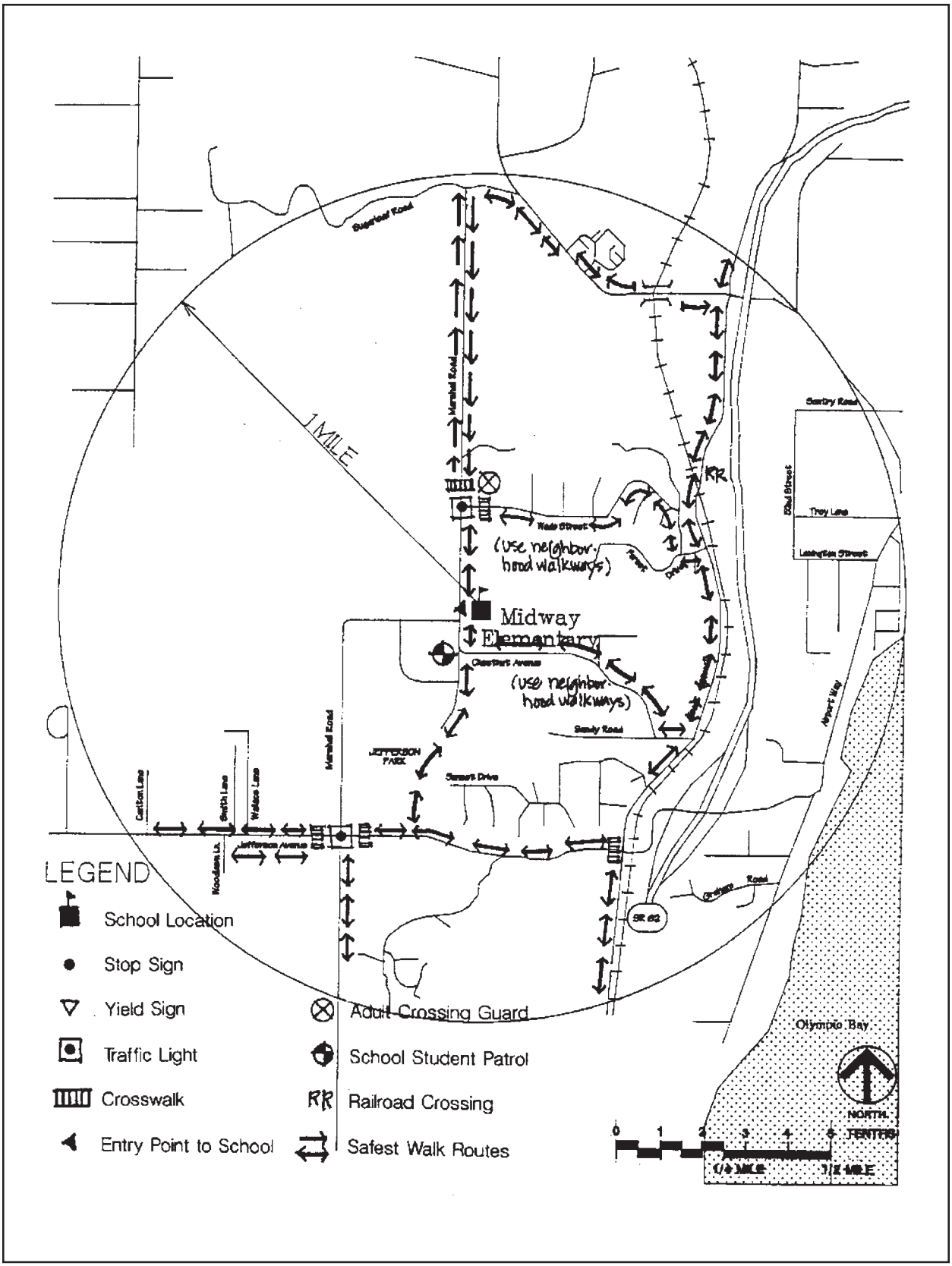


Figure 20. Walk route map

Each child should be walked through the route at least once by an adult. For example, at one elementary school, the principal meets with neighborhood children and walks with them to school along the designated route each fall.

Teachers should direct students to take the designated route map home to their parents with an accompanying letter. Maps and safe walk route information could be mailed to the students' homes. Different letters are appropriate for parents of younger-aged children (K-3) and for those of older children (4-5). Examples of such letters are shown in Figure 21 and Figure 22.

The letter should ask the parents to walk the route at least once with their child, pointing out any potential safety concerns (business driveways, alleys, railroad tracks, etc.) along the route to school. This is extremely important for younger children who are not able to read maps or street names. The letter should tell the parent to be sure to direct the child to use the route illustrated on the route map. A "tear off" signature slip should be provided at the bottom of the letter for parents to sign and return to the school indicating they received the map and discussed it with their child.

School/District Letter to Parents

Safest Walking Routes to Midway Elementary School

(Kindergarten - 3rd Grade)

Dear Parents:

This map shows the suggested safest walk route from every neighborhood to school in our school area. By following the arrows, you will be able to determine the best route between your home and the school. Mark the route with a colored pen or crayon. This is the route your child should take to and from school if she walks or would use in an emergency if your child usually takes the school bus.

Crossing points for major streets have been located at established locations (i.e. at traffic signals or signed crosswalks). As a result, in some cases, the safest route may not be the shortest.

We have been talking about good walking behaviors in the classroom and your help in reinforcing these habits will help to ensure the safety of your children not only on their way to and from school, but everyday.

Parents often over estimate the ability of young children to cross streets safely and to cope with traffic. Please teach your child to use this route to school and to cross streets only at the locations shown. You and your child should become familiar with the route by walking it together. When walking the route, be a good role model by the teaching your child safe walking practices. We have listed these behaviors on the other side of this map.

Sincerely,

Your Principal and PTA

Guidelines for Teaching Your Child Good Pedestrian Behaviors

1. Use sidewalks or safety paths if available; walk facing traffic if there are no sidewalks or safety paths; cross corners at right angles; wait on the curb until the traffic clears before crossing any street; walk—don't run across the street.
2. If there are any traffic signals along the route, explain the meaning of the signals. Explain the proper time to cross the street and the proper use of pedestrian push buttons, if there are any.
3. Speak each decision aloud, reviewing each factor considered. Be sure your child understands WHY and not just WHAT to do.
4. Time your trip in order to know how much time is necessary for your child to walk to school without hurrying.
5. Once you reach the school, let your child walk you home.
6. Correct any mistakes your child makes as you proceed on the way home.
7. At one corner on the way home have your child cross the street alone to demonstrate his or her ability to follow your instructions.

Figure 21. Sample letter to parents for grades K-3

School District/Building Letter to Parents

Safest Walking Routes to Midway Elementary School

4th - 6th Grade Students

Dear Parents:

This map shows the suggested safest route from your neighborhood to school for every location in our attendance area. By following the arrows, you will be able to determine the best route between your home and the school. Together with your child mark the route with a colored pen or crayon from your home to the main route. This is the route your child should take to and from school if she walks or to use in an emergency if your child misses the bus.

Crossing points for major streets have been located at established locations (i.e., at traffic signals or signed crosswalks). As a result, in some cases, the safest route may not be the shortest. Instruct your child to use this route, to cross streets only at the locations shown and practice good pedestrian behaviors included on the other side of this map.

Although older children understand good pedestrian behaviors, they often become careless in doing them. We have reviewed these good behaviors at school and have printed them on the other side of this map for you.

Sincerely,

Your Principal and PTA

Guiding Rules for Good Pedestrian Behavior

1. Look both ways before crossing
2. Walk, DON'T RUN across streets.
3. Cross only at safe corners, even if you walk farther.
4. Choose the route with fewest streets to cross.
5. When possible, cross streets where there are traffic helps.
6. Obey traffic signals.
7. Face traffic when walking on roads without sidewalks.
8. Watch for turning and backing cars.
9. Keep from between parked cars.
10. Refuse to ride with strangers.
11. Go directly between home and school.

Figure 22. Sample letter to parents for grades 4 - 6

Step 9. Evaluate the program

After the maps have been distributed to the students, the SAC should evaluate the program to determine whether the map and the instructions are being used properly by parents and students. In addition the maps should be updated periodically. It is also important to define who will update, print and disseminate the maps each year.

The SAC should conduct a written or telephone survey of both parents and students; this survey may also be made by individual school building staff. It is not necessary to question every participant; a sample of 10 to 25 percent of the students should be sufficient. A mailback survey questionnaire may be attached to the maps or a mail-out questionnaire may be sent to the students' homes. The surveys might include such questions as shown in Table 7.

Evaluation Questions
For Parents
1. Were the instructions with the map followed, i.e., did you walk the route with your child?
2. Could you read and understand the map? If not, what confused you?
3. Do you feel that this type of program improves the safety of your child's trip to and from school?
For Students
1. Did your parents go over the map with you and/or walk the route with you?
2. Do you now follow the route on the map when you go to and from school?
3. Do you feel that the school route map program helps to make your trip to and from school safer?

Table 7. Sample evaluation questions

Figure 23. Volunteer monitors walk route

Maintaining The Program

The Safest School Route Program is not a single event; it is a program that is constantly changing. It changes with the seasons and from year to year. It changes as a sidewalk is constructed and when a new subdivision is built.

Volunteers from the school's parent/teacher organization might be used to check the compliance of children with the designated route itself or to help with educational efforts involving the school, parents and children (Figure 23). Any safety concerns identified by parents should be referred to the SAC or school district designee for further action. Other conditions may also be reported, such as unsafe activities of school children, failure to use the designated routes, improper driving practices, the need for increased traffic law enforcement, or the need to trim weeds or shrubbery along the walk routes that may obscure vision.

The designated walk routes for each school should be reviewed annually prior to the opening of school. The route map should be distributed when school opens each fall in order to establish safe walking patterns and habits that will hopefully carry throughout the school year. Designated routes should be reviewed and revised whenever there are changes in traffic patterns such as road construction or detours, whenever there is the installation of any new traffic control or when changes are made in the school attendance boundary.

Program maintenance incorporates periodic reviews of the walk route area including:

- safety concerns;
- traffic engineering data (including traffic counts);
- traffic controls (including driver visibility, i.e. foliage blocking view);

- sidewalk construction/school transportation;
- changes to street network (traffic flow); and
- new construction.

Another important element under program maintenance is community relations. Publicity can be used to inform, educate and enlist community support for school safety programs. Keeping the community informed and active in pedestrian safety programs will add to the success of the program.

Practical Tips For Preparing Maps

Reducing complexity is the main task in creating the final map to be used by students and parents. There are several methods which can help, including the use of different colors, line weights, sizes and symbols. The maps shown in this section illustrate some of the basic ideas and alternative methods of creating simple map presentations.

One manner of reducing complexity on the map is to show only the safest walking streets. If you feel that you must present a great deal of information on the map, be certain that each graphic symbol, line weight and/or color varies with the specific item being displayed. **Do not use one symbol or color to represent two different items.**

Be imaginative in displaying the safest routes. Arrows may not be the most effective method of showing the safest routes. Several different map styles have been used successfully in safe walk route programs, and examples are presented below. Figure 24 shows three ways of showing all of the safest routes for one school on a single map. This map is easy to reproduce and distribute. All of the route information for all students is contained on a single sheet. However, one possible disadvantage is that the map may be confusing to parents and students.

When necessary, both the safest streets and the guide arrows can be shown as long as the map is kept uncluttered. This is helpful in areas without sidewalks or adequate shoulders on both sides of the road in order to show students which side of the road to walk coming to school and returning home.

Another alternative is to break the school area into several sections containing the major walk routes. In this way, the parent and child are not faced with trying to understand a complete area plan and can concentrate on their neighborhood. Figure 25 shows the four safest routes for the same school area on a single map. The area is first divided into sections. The safest route for each section is shown by a black arrows. The area serviced by that route is shown by a gray pattern. Then, there is a separate map produced for each walk route and the area it serves, as illustrated in Figure 26.

The advantage of this method is simplicity. Only the information relating to a specific segment of the school walking population is shown. The cost difference between this method and the single combined map method is not significant; however, the distribution of the single route maps is more complex in that each route must be matched with the students living in the area served by that route.

The gray areas on these maps (Figure 25 and Figure 26) permit identification of the school area served by a major safe route. Each map should be distributed to the students residing in the gray area shown on that map. The use of the gray area is shown here to illustrate a manner of dividing the entire school area into neighborhoods. If you feel that in your jurisdiction the use of the gray area will tend to confuse parents it may be eliminated and the best route shown on the map.

Figure 27 presents the least complex walk route map method. This map shows only the safest route for the students who reside in a given section of the school area. This concept is most desirable and is the recommended method.

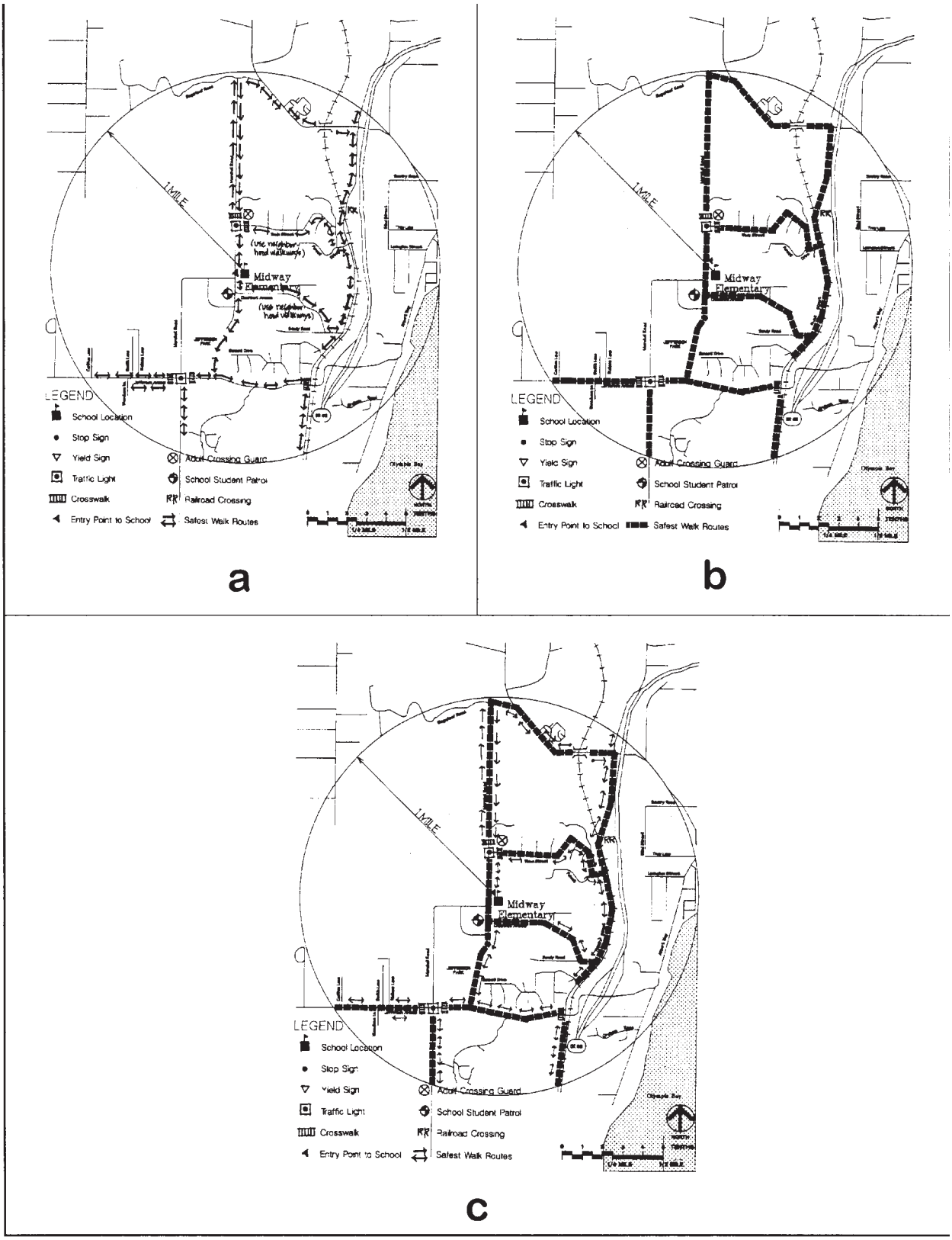


Figure 24. Illustrating walk routes

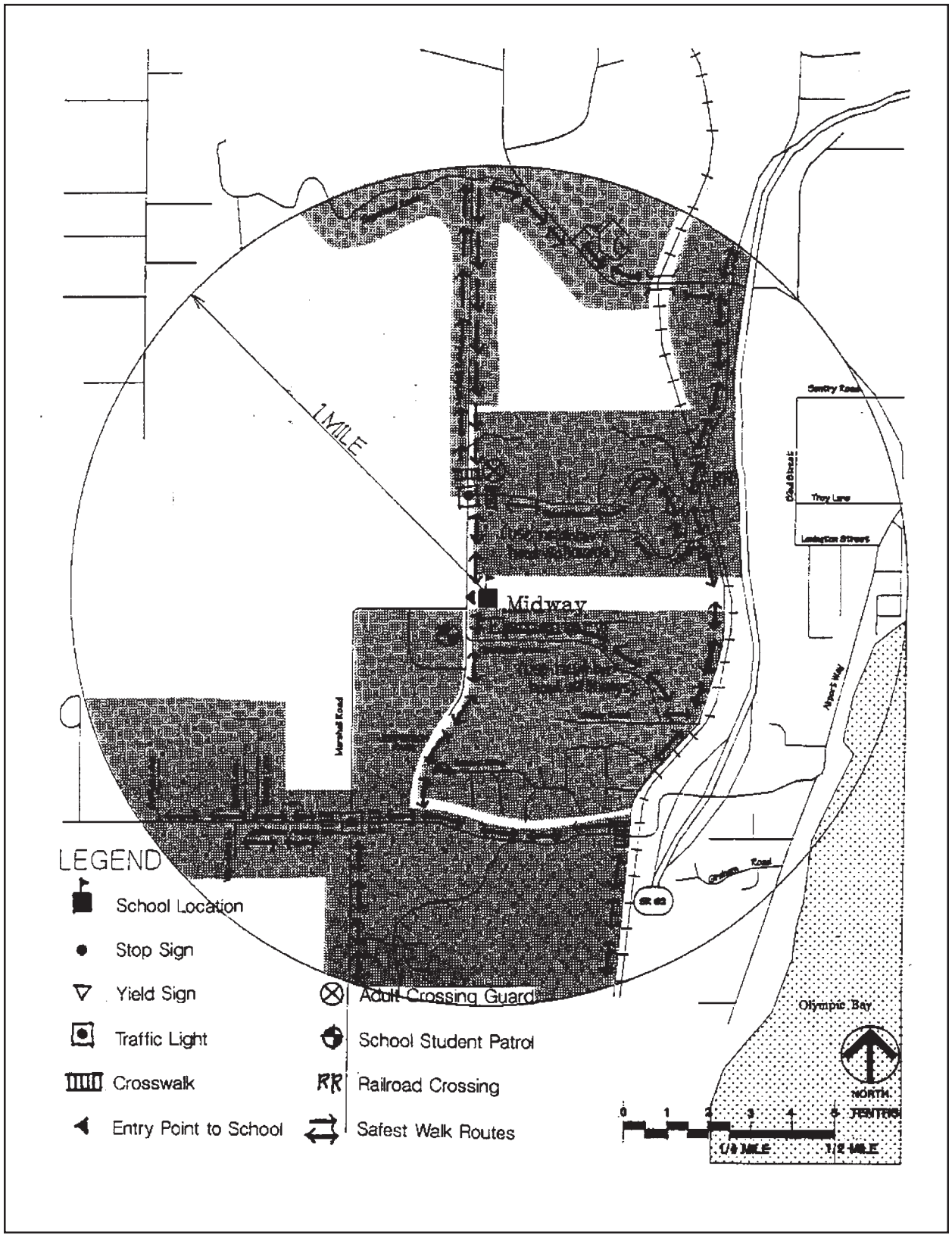


Figure 25. Combined sectional map

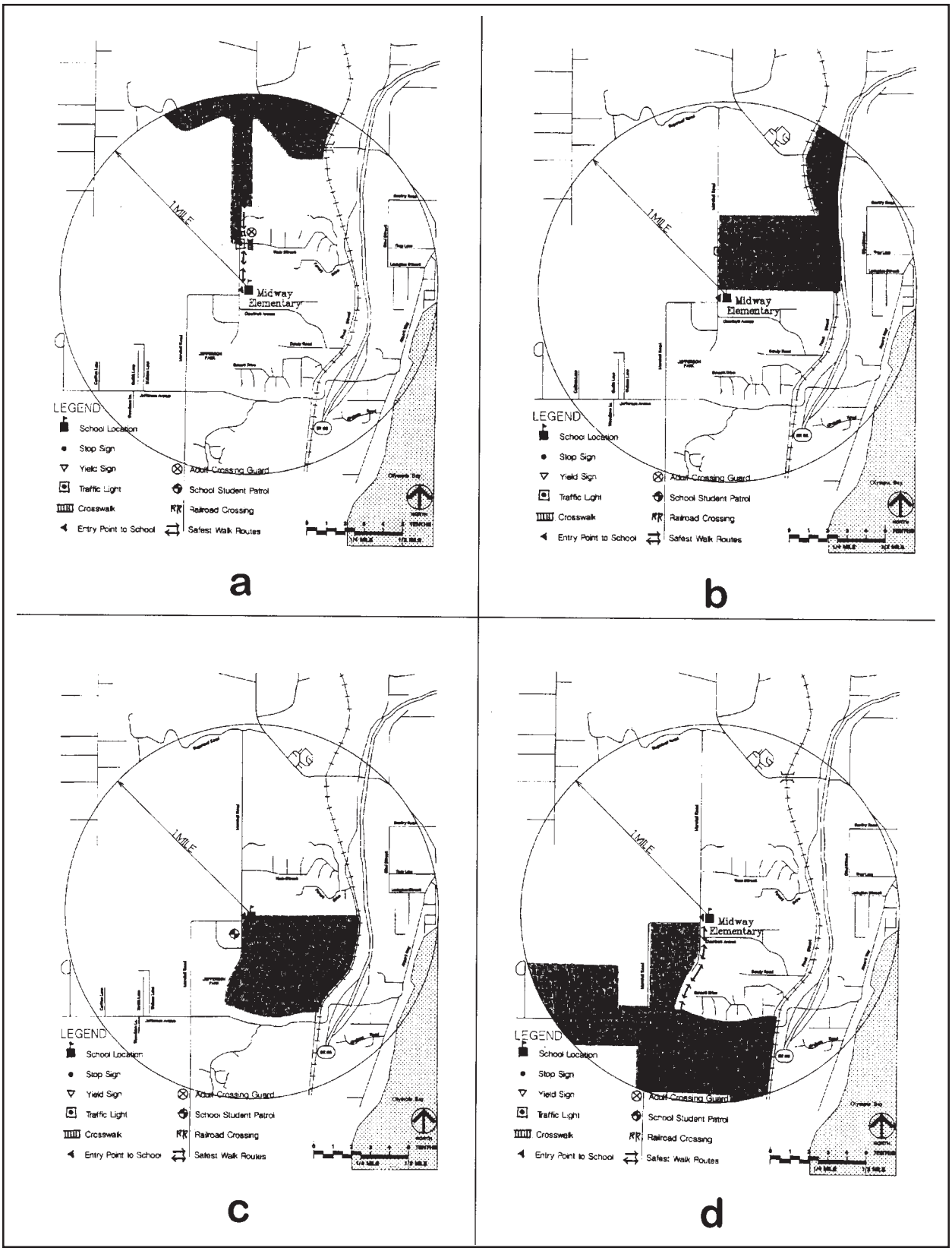


Figure 26. Sectional approach to walk route maps

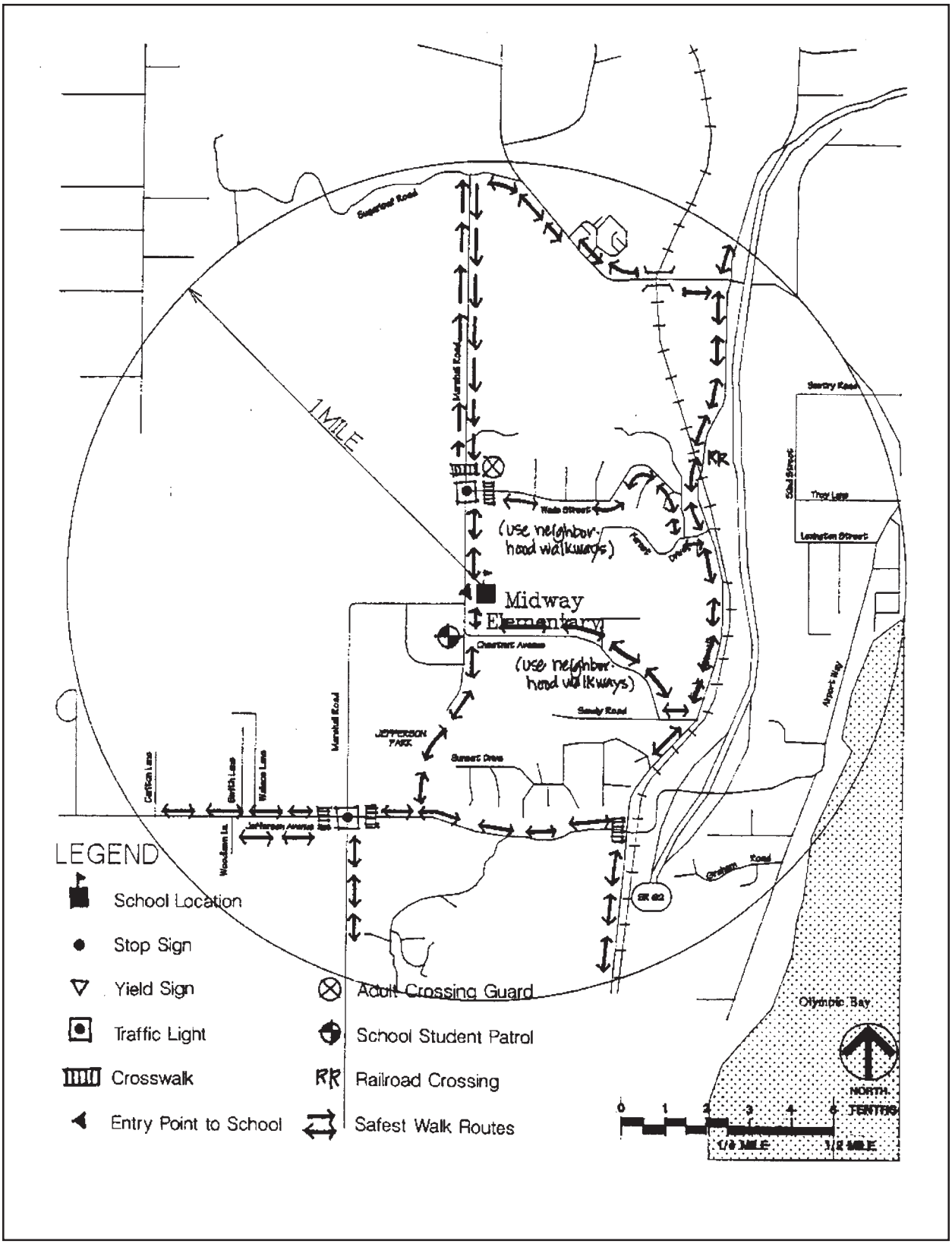
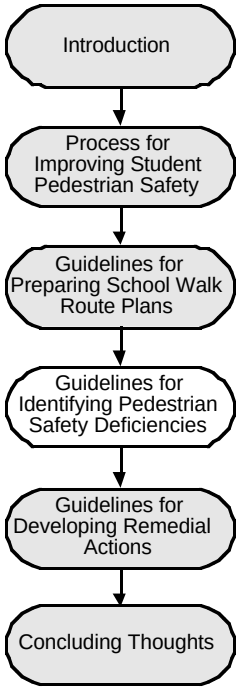


Figure 27. Recommended school walk route map



Chapter 4
Guidelines for Identifying Pedestrian Safety Deficiencies

As previously discussed, the suggested school walk routes may not be entirely free from pedestrian safety concerns. A consistent set of criteria should be applied to each route to determine its adequacy for serving school pedestrian travel, and to identify where improvements should be considered to enhance the safety of the chosen route.

This section presents an approach to identifying potentially deficient locations, and leads into the next section which explores possible remedial actions.

Methods

There are several acceptable methods which school districts, local jurisdictions, parent associations and the Safety Advisory Committee (SAC) can use to identify and categorize potential pedestrian safety concerns.

SPI's *Guidelines for Determining the Existence of Hazardous Walking Conditions*

This manual, provides procedures and criteria used to identify "hazardous walking conditions" as defined under state regulations. Prior to the passage of SB 6684 in the winter of 1996, the state required the use of these Guidelines for transportation funding purposes. School districts can continue to use this guide, as it stands, or modified, to make student transportation decisions.

ITE's *School Trip Safety Program Guidelines*

This report, published by the Institute of Transportation Engineers in 1984, describes a comprehensive program for school trip safety, including the preparation of school walk route maps for parents and students. The section on route deficiency identification lists a number of procedures, studies and criteria for identifying potential pedestrian safety deficiencies and concerns. The criteria include:

- the adequacy of gaps in the traffic stream for school route crossings,
- sight distances along roadways for school route crossings,
- pedestrian facility design standards,
- condition of pedestrian facilities,
- pedestrian crossing standards,
- snow removal and storage concerns,
- speed limits and warning signs,
- active and passive traffic controls, and
- maintenance needs.

Traffic and pedestrian studies

The inventory of existing walking conditions and traffic characteristics collected during the preparation of the suggested school walk route plan provides a good basis for beginning the analysis of pedestrian safety deficiencies. Additional traffic and pedestrian studies may be needed to fully document pedestrian safety conditions and provide the data necessary for developing realistic improvement. The ITE's School Trip Safety Program Guidelines lists a number of studies which are helpful in determining pedestrian safety deficiencies. These include:

- roadway and traffic control device inventory,
- sight distance studies,
- gap adequacy study,
- accident tabulations,
- conflict analysis, and
- pedestrian volume and characteristics.

If needed, these studies should be conducted under the direction of a professional traffic engineer and the results reviewed with the local public works agency as well as with the SAC.

Public works agency program

Many local agencies have conducted traffic and transportation studies which identify traffic and pedestrian safety concerns, and recommend remedial actions. Often, these studies have resulted in improvement projects which are included in the jurisdiction's Six Year Transportation Improvement Program (TIP), and which may or may not be funded for implementation in the near future. These studies and improvement projects should be reviewed by the SAC and included in its overall school trip safety program where appropriate.

Determination by SAC

The Safety Advisory Committee may also identify other potential pedestrian safety concerns for further analysis by either the school district or the local public works agency. The SAC provides a good forum for parents to raise their concerns about pedestrian safety issues or perceived problem locations. Several communities have identified social hazards that create dangerous situations for children on their way to school. Figure 28 provides an example of possible social condition hazards.

Physical and Social Condition/Hazards Criteria

Requests for physical hazards will be reviewed by the Transportation manager and Safe Walking Appeals Committee. Requests identifying social hazards will be shared with the Police Department or appropriate local agency for their review. The Districts's Safe Walking Appeals Committee will review each appeal and notify the parent(s) and school of the decision. **Decisions by the Safe Walking Appeals Committee may or may not involve transportation.** Other options for improving safety will be considered.

Disclaimer: ***The Bellevue School District accepts no responsibility for correcting perceived physical or social hazards. The District will direct concerns to the appropriate agencies.***

PHYSICAL CONDITIONS

Potential hazards include four basic types of situations which students may encounter while walking to school:

1. Walking along a roadway
2. Walking on a roadway
3. Crossing a roadway
4. Crossing railroad tracks

Certain factors are present in most situations. These include speed and volume of traffic and exposure of students to the traffic.

SOCIAL CONDITIONS

DANGEROUS DRUGS/ALCOHOL

Locales currently known for drug-related trafficking during the time of day students would be walking to and from school or school sponsored activities.

SEX OFFENDERS/PREDATORS

Locales currently identified as the residence or work place of sex offender/predator of record, or reported attacks by an unidentified subject.

SPECIFIC ENVIRONMENTAL CIRCUMSTANCES

Locales currently known for the use of highly toxic, volatile chemicals, dangerous equipment, and residential or commercial buildings and grounds which may prove to be a dangerous nuisance. Industrial areas or grounds through which unstable products are moved or which produce or store dangerous materials may also create qualifying hazardous walking conditions.

STREET VIOLENCE

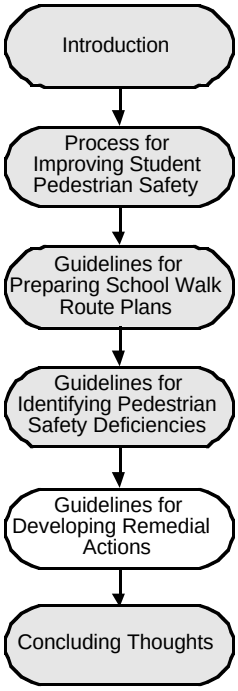
Locales currently known for the frequency of violence between opposing parties which may put students at risk during the time of day students would be walking to and from school or school sponsored activities.

OTHER

Conditions, events, or issues that present a danger to students walking to and from school or school sponsored activities which are not covered by the above criteria (i.e., student harassment, dangerous animals).

Source: Bellevue School District

Figure 28. Physical and Social Condition/Hazards Criteria



Chapter 5
Guidelines for Developing Remedial Actions

The potentially severe, and often fatal, consequences of an accident between a moving vehicle and a child pedestrian raises high emotions whenever the topic is discussed. Traditional traffic engineering approaches to adult pedestrian safety sometimes do not include parental concerns about the safety of their young children walking along busy streets and highways to school. Schools, public agencies and community members should continue their cooperative effort for school walk routes through the development, funding and implementation of school pedestrian safety improvements.

The safety of school children traveling between their homes and schools is also a cost issue. In the past, the state has spent millions of education dollars to fund bus transportation for students whose walk routes had "hazardous walking conditions" as identified under SPI's criteria. Many of these conditions were located quite near the schools, and thus affected a significant number of students who could otherwise walk to school. Identifying, prioritizing and funding school walk route safety improvements, such as sidewalks and signals, coupled with judicious use of adult and school patrol crossing guards, can save many tax dollars and provide a safer environment for the public — 24 hours a day, not just before and after school.

Narrow shoulders, a curve on a busy road, and children walking with their backs to traffic can present potential safety concerns.

The purposes of this chapter are to:

1. Identify needed school pedestrian safety improvements, especially those related to the school walk routes and safety concerns identified from the previous sections;
2. Develop a prioritized list of pedestrian safety improvements, and an action program at the local jurisdiction to implement remedial actions, including actions by the school district and the local public work agency; and
3. Assist WSDOT in compiling an inventory of statewide school pedestrian safety needs to facilitate its support of school pedestrian improvements, and evaluate the potential benefits and costs of an on-going mini-grant program to fund such improvements.

Continuing the Cooperative Effort

In this phase of the School Pedestrian Safety Program, the emphasis shifts to the local public works agency, although the schools and community members still have important roles. The public works agency is responsible for building and maintaining the streets and highways, traffic signs and signals, and pedestrian and bicycle facilities within the public right-of-way. For this program public works would develop remedial actions, with input and support from schools and community members, and implement the improvements through the funding, design and construction stages.

In this *Guidebook*, coordination with the "public works agency" includes not only the specific department of a local jurisdiction, but also any agencies that may be responsible for roads or walkways involved in the school walk route plan. These may include the local city and/or county, parks department, cemetery district, port district, fire district, drainage district, utility division, WSDOT and other state agencies (e.g., Department of Natural Resources, Wildlife, Parks), Federal agencies (e.g., Forest Service, National Park Service, Agriculture, etc.), Indian nations, and the owners of any easements with or without walkways which may be affected by the plans (power company, water company, neighborhood associations, railroads, and other private entities).

The school district's role is to lead the process of identifying school routes and pedestrian safety concerns, and work closely with the public works agency to develop and implement the remedial actions. The school district should provide adult or school patrol crossing guards at key crossings to support physical improvements, such as signs, signals and crosswalks, and should consider re-routing school walk routes to take advantage of new pedestrian safety improvements.

Through the Safety Advisory Committee (SAC), the community also has a continuing role. The SAC provides a forum for discussing problems and solutions focusing pedestrian safety education efforts, not only for parents and students, but also toward the community at large.

School Pedestrian Safety on the Internet

"Surfin' the Net" for "pedestrian safety" yielded two World Wide Web sites with back to school safety tips. The University of Iowa's Lone Tree Family Practice Center has an electronic newsletter on the Internet at *http://indy.radiology.uiowa.edu/HCPNewsletter /LoneTreeFP/articles.html.* The Fall 1994 issue listed a page of tips for school walkers, riders, bikers and bus riders, and commented, "If parents can discuss these tips with their children periodically, the chances increase that a child's trip to and from school will be safe. The Heidi Search Center at *http://www.gems.com/kids/heidi/school.html* lists tips for both children and drivers from the San Jose (CA) Police Department's *Child Safety Handbook.*

The SAC can also prioritize school pedestrian safety needs within the school district and encourage the local elected officials to fund the improvements. SAC members can also assist public works agencies in securing matching local funds for state or federal safety grants.

Public involvement

SAC Review

Notices about proposed public works projects by cities and counties should be reviewed by SAC members in a timely manner to ensure that their comments are considered in the decision making process.

Public input on remedial actions is an important step to continue the cooperative effort among the school and the local agencies. For grants using federal funds, there are often specific requirements for public involvement during project development. Community comments would be especially useful for capital improvements such as new sidewalks or pedestrian overpasses which could be used by many community members, not just by school children. In addition, local elected officials usually give preference to projects with broad visible community support, so that input from other community members, organizations and agencies is recommend to support funding efforts. The SAC should participate appropriately in any public involvement activity to present its endorsement of the planned improvement program and priorities.

Funding Issues

Funding school pedestrian safety improvements takes an innovative and concerted effort to seek funds from as many sources as possible. If school walkways and bikeways and a priority for the community, a portion of the local transportation budgets could be allocated for these types of projects. In some jurisdictions as much as one third of the transportation budget is funded by property tax revenues. The safety benefits of pedestrian and bicycle facilities can have a real dollar benefit to the community through fewer accidents, lower health care costs and lower insurance premiums for community members.

Funding considerations involve setting priorities, matching needs with special purpose grant programs, and programming general transportation funds for pedestrian safety improvements in the most cost-effective manner.

Setting priorities

The list of solutions to improve pedestrian safety conditions at specific locations should be examined and arranged in order of priority. The priorities should consider such matters as: cost-effectiveness, conformance with legally prescribed policies, anticipated ease of installation, degree of safety improvement, and number of beneficiaries. Improvements which reduce the need for subsidized bus transportation for nearby school children should receive a higher priority over similar projects on the fringes of the school walking radius.

Funding sources

Until a few years ago, school walk route improvements and pedestrian safety programs were primarily locally funded, with perhaps some major improvements receiving state assistance. However, the 1990 Intermodal Surface Transportation Efficiency Act (ISTEA) emphasizes a truly multi-modal approach to transportation funding, with special funds set aside for enhancements to pedestrian and bicycle facilities. Considering the rapidity of change in transportation programs, SAC members should explore various funding sources through the WSDOT TransAid Service Center, the Washington State Traffic Safety Commission, County Road Administration Board (CRAB), Transportation Improvement Board (TIB), metropolitan planning organizations, and local health and safety organizations. The financial plan for recommended improvements should be continuously reassessed by the SAC committee since funding sources at federal and state levels are very dynamic.

Funds for school facilities, school bus transportation, and public road and pedestrian improvements and maintenance come from very different sources, each with its own criteria, restrictions and funding schedule. A cooperative approach between school districts and public work agencies is needed to fund and build pedestrian safety improvements for school walk routes. School funds could provide the local match share for state or federal grants. Local public works agencies should tap private, state or federal sources for pedestrian-related improvements, or should look to the reallocation of local road maintenance dollars to remedy critical walking safety locations which may not require major capital investment.

Local sources can also be tapped effectively: local capital facilities funds, operations and maintenance funds (for signal timing and shoulder repair), developer impact mitigation improvements (through the SEPA process), impact mitigation fees, Local Improvement Districts (LID), Road Improvement Districts (RID), etc. These sources can fully fund low cost improvements and may be used as a local matching share for larger projects using state or federal grant funds. The local public works agency can assist the school district and the Safety Advisory Committee in exploring these local funding sources.

Procedures to Develop and Implement Remedial Actions
1. List pedestrian safety concerns on walk routes
2. Identify potential school district actions
3. Send prioritized list to public works agencies
4. Review list with public works agency and SAC
5. Transmit findings and recommendations to school board
6. Continue efforts to implement remedial actions

Table 8. Procedures for remedial actions

Procedures

This section lists the procedures which the school district can follow to assist in developing and implementing school pedestrian safety improvements. These procedures, listed in Table 8, are written with the assumption that the transportation director will be responsible for initiating them. They may have to be modified if other school district staff are assigned these responsibilities.

Step 1. List pedestrian safety concerns

List the location and type of each identified pedestrian safety concern. These may have been identified by the school district using local criteria or by the local public works agency. Indicate each location on a school walk route map, with all locations for a single school on a single map. Each location should be identified on the map by a standard symbol (see Figure 29) and uniquely numbered for future reference. The numbering system should identify both the school with which it is associated, and a unique number for the listing for that school (i.e., ME-03 means pedestrian safety condition location number 3 for Midway Elementary School).

For each school prepare a list of safety concerns showing the following information in tabular form. An example format is shown in Figure 30.

- location
- description and extent of problem
- number & grade of students affected
- special considerations

When determining the "extent" of the problem, it is important to look beyond the immediate spot where the potential problem occurs. Look for logical starting and ending points, so that the public works or other

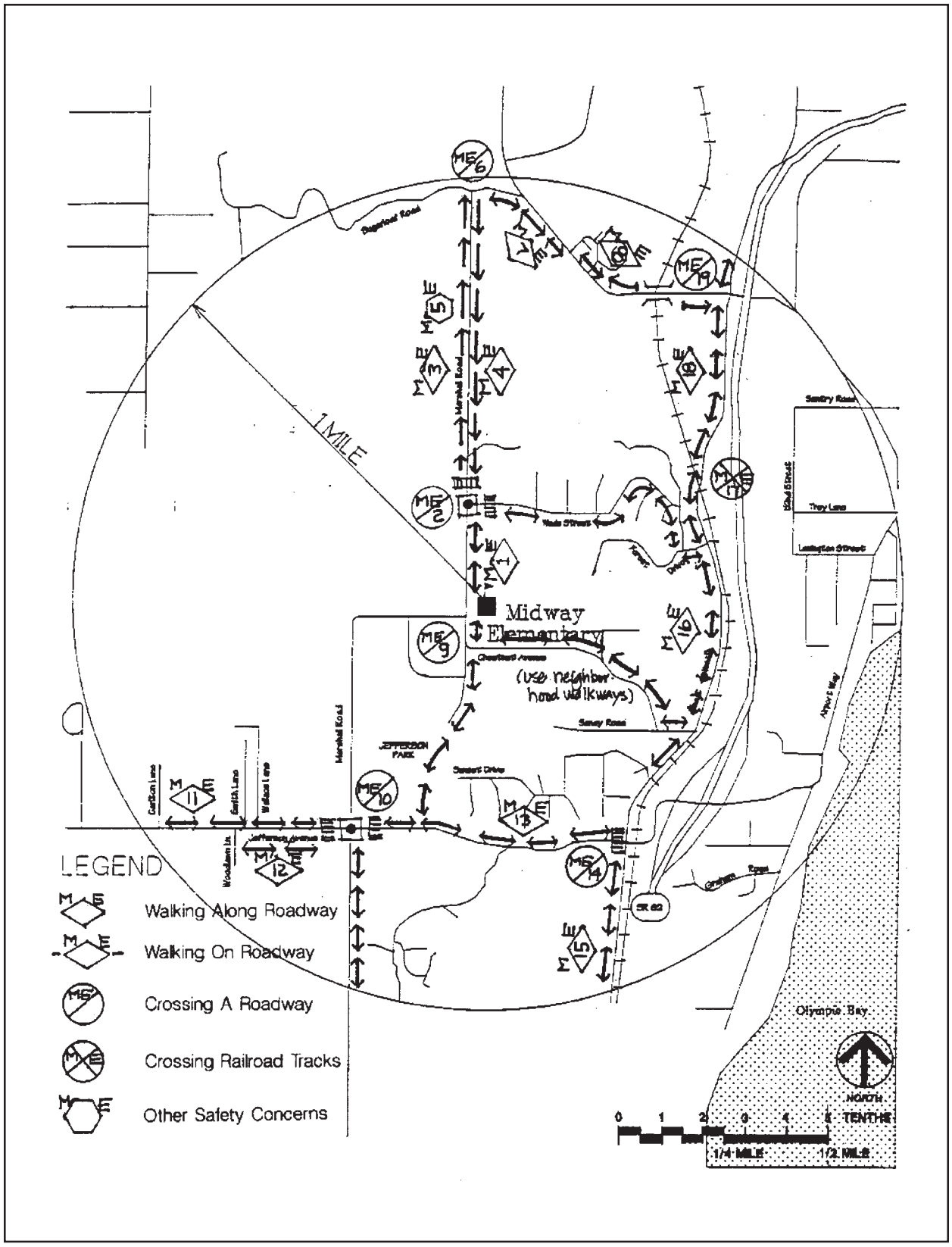


Figure 29. School pedestrian safety concerns

Tabular listing of pedestrian safety problem locations

Problem Number:	ME 1
Location:	Marshall Road between School and Wade Street
Description:	Walking along roadway 3' shoulder
Extent:	500 feet
Traffic Speed:	35 mph
Traffic Volume:	200 vph
Number of K-6 Students:	100
Special considerations:	Close to school; many students affected

Problem Number:	ME 2
Location:	Wade Street at Marshall Road
Description:	Crossing roadway
Extent:	2 lane road
Traffic Speed:	25 mph
Traffic Volume:	600 vph
Number of K-6 Students:	55
Special considerations:	Crossing guard

Problem Number:	ME 5
Location:	West side of Marshall Road between Wade Street and Sugarloaf Road
Description:	Walking along roadway 3' shoulder
Extent:	3/4 mile
Traffic Speed:	35 mph
Traffic Volume:	200 vph
Number of K-6 Students:	30
Special considerations:	open culvert means little room for shoulder widening

Problem Number:	ME 17
Location:	Front Street at railroad crossing
Description:	Crossing train track
Extent:	One track with two trains during crossing hours
Traffic Speed:	40 mph
Traffic Volume:	400 vph
Number of K-6 Students:	15
Special considerations:	trains traveling at 35 mph

Note: This list does not represent a complete list of the problems at Midway Elementary. It only presents the four different types of problems encounted. The complete tablular list would include all 19 of the identified locations.

Figure 30. Tabular listing of pedestrian safety concerns

agency can make a good assessment of the extent of the improvement required. For example, a narrow or nonexistent shoulder section should be noted from the point nearest the school where it begins outward to at least the first major intersection, the one mile walking radius point from the school or where it widens to an acceptable width.

From school records, count the number of school children affected by the safety problem. Probably, the most convenient estimate is the cumulative number of children at bus stops within the one mile waking radius who could otherwise walk to school if the safety concern was remedied. However, if the total number of students in the area affected by the school walk route is readily available, use that higher number. This number will be higher because some parents drive children and may continue to do so even after safety improvements are made.

Other pertinent data could be described under "special considerations." This may include sight line restrictions, observed heavy truck traffic, and other information to help public works determine the appropriate solution.

Step 2. Identify potential school district actions

Review the list of pedestrian safety concern locations to determine what action the school district can take to remedy the situation, alone or in conjunction with the public works agency. For conditions related to walking along roadways or on roadways without adequate shoulders, the transportation director should re-examine the identified school walk route and see if another, safer route can be substituted. It is not expected that this option will be often available, but it should be explored. Please note that routes which take students more than two city blocks out of their way will not likely be used and should not be considered as a viable alternate.

For roadway or railroad crossing situations near the school, one obvious solution is to add an adult or school patrol crossing guard before and after school. These options should be considered for all crossing locations identified as pedestrian safety concerns. Rules for crossing guards and school patrols are spelled out in WAC 392-151, and some guidelines are discussed later in this section. The cost of providing crossing guards should be balanced against the costs of providing bus transportation for students affected by the particular safety concern in question. This consideration should be made independent of which budgets are affected (i.e., state or local funds, site personnel budget or district transportation budget), and preference should be given to the most cost-effective solution.

Any new locations for crossing guards should be discussed with the SAC and the local public works agency to ensure that conditions are safe for the crossing guard and the children. It is important that pedestrian crossing locations have adequate lines of sight (sight distance) for approaching drivers to see the crossing guard and safely slow or stop without causing rear-end collisions or striking the pedestrians.

If school patrol members (adult or student) are proposed for any school walk route crossings, they must be signed and marked in accordance with WAC 392-151-030 and the *Manual on Uniform Traffic Control Devices*. The required signs and markings must be installed by the responsible local agency prior to using school patrol members at the crossing.

Step 3. Send prioritized list to public works agency

The school district should review the list of pedestrian safety concerns and identify those which it considers the have highest priority for remedial action. One criteria could be that locations affecting the greatest number of students have the highest priority, but the district should apply its own judgment in determining priorities. The district should also explore using its local funds to fund a portion of the improvement costs, or to provide the local matching share of outside grant programs.

Use the map and tabular listing shown in Figure 29 and Figure 30 to convey the needed information to public works. Highlight where the school district would like to install school crossing guards under "special considerations." The transmittal letter should list the school district's highest priority improvement needs, and request confirmation from the public works agency that the information has been received and is being reviewed by the agency.

Figure 31 shows an example of a transmittal letter from a school district to a public works agency. It includes a receipt portion that the responsible public works official can simply photocopy and mail back to the school district to provide confirmation of the safety concerns.

Step 4. Review list with public works agency and SAC

Shortly after public works has completed its initial review of the school district's list of pedestrian safety concerns, the transportation director and the appropriate public works official should review the problems and potential solutions with the Safety Advisory Committee (SAC). This is an important step to bring the various interested parties together to discuss and resolve the many procedural, funding and engineering issues associated with pedestrian safety improvements.

Developing the remedial actions requires more than just a traffic engineering handbook or pedestrian safety checklist. Some issues are technical: What's the best way to make the route safer — widen the shoulder, provide a sidewalk or pathway? Can we install a traffic signal on this busy road to allow children to cross? Is the traffic volume too high to allow an at-grade pedestrian crossing? Is a pedestrian overpass warranted? Public works staff can educate other members of the SAC about the engineering issues involved with each safety concern location and each potential solution.

Some of the issues are procedural ones: How, when and to whom is the information about deficient walking conditions transmitted? Who's responsible for remedial action once the condition is identified? What funds can be used to construct the improvements? Who's liable if something goes wrong? Many of these issues can be addressed and resolved through a cooperative effort among SAC members, with each agency or interest group participating in the solution.

In reviewing the list of problems and solutions, the SAC could take some or all of the actions discussed below.

Reach consensus on "No Action Locations"

Some pedestrian safety concerns are unavoidable or are not correctable by traffic engineering improvements. These include: students walking along high speed, high volume roadways; walking along or on roadways where it is infeasible, cost-prohibitive or simply not practical to build adequate shoulders, sidewalks or pathways; or crossing railroad tracks with high frequencies of train traffic and low volumes of students. These locations should be documented as not correctable in the foreseeable future, with confirmation from the public works department.

Some "correctable" hazards may be considered by the public works agency as not being financial feasible within the next six years (per the jurisdiction's planning cycle). Such locations should also be noted as "No Action Locations" and noted for review when the public works agency indicates that funding may be available.

MEMORANDUM

DATE: July 31, 1996

TO: Harding County Public Works Department

FROM: Transportation Supervisor, School District

RE: Identified Pedestrian Safety Concerns on Student Walk Routes to School

ENC: Inventoried Map of Safety Concerns

We are required by state law to develop walk routes for our students who walk to school. We often provide transportation for students who could walk to school if the way were safer.

We have identified locations on walk routes that have pedestrian safety deficiencies and need improvements to ensure the safety of our youngest pedestrians. The following projects rank as our highest priorities.

Problem Number: ME1
Location: Marshall Road between School and Wade Street
Description: Walking along roadway with a 3 foot shoulder

Problem Number: ME 2
Location: Wade Street at Marshall Road
Description: Crossing roadway

We are committed to working with your agency to improve any of the identified locations on the list. Call me for additional information. The district would like to be notified when you make improvements to any of the locations. Your signature on the line below acknowledges receipt of this letter for our records.

We acknowledge receipt of this letter and the list and map of locations with identified safety concerns. We will follow up with you as soon as possible.

Dated: _____

_____
Harding County Department of Public Works

Figure 31. Transmittal letter example

Identify already planned or programmed improvements

Public works or other members of the SAC may also identify some locations which are already included in planned or programmed roadway, pedestrian, bicycle or safety improvement projects. The jurisdiction's Six-Year Transportation Improvements Program (TIP) is a good source for such projects. In addition, proposed roadway improvement projects in these areas should be reviewed by public works to see if minor modifications in the planning and design stages of a project can remedy the pedestrian safety concern at little or no additional cost.

Since project implementation takes several years, the need for any interim remedial actions should be discussed with the SAC and a decision made about whether or not to continue bus transportation for students affected by the location, and whether or not to implement some temporary solution. This should be done on a case-by-case basis by the SAC.

Public works should be alerted to provide feedback to the school district when these planned or programmed improvements have been made so that the transportation director can adjust the bus routes and school walk routes accordingly.

The Six-Year TIP

State law requires that all cities and counties adopt a comprehensive transportation improvement program (or "TIP" as it is commonly called) listing its planned transportation projects for the ensuing six calendar years. The 6-year TIP identifies each proposed project, its costs and funding sources, and its schedule for implementation. Many funding sources require that projects be shown in the TIP to be eligible for outside funds, and to ensure that any local matching money will be available when needed.

Many jurisdictions include one or more broad category-type listings, such as "countywide pedestrian safety improvements" for budgeting and funding purposes, without indenting specific individual projects. Many of the remedial actions suggested in Chapter 5 can be processed under this "umbrella" category description.

Identify low cost, immediate action projects and supporting actions required from the school district

Public works and the SAC should identify any low cost, immediate action projects and develop a strategy to see that they are implemented quickly. The SAC should also identify what support is required from the school district, including funding or crossing guards. The school district and the appropriate local agency should work closely together to implement these remedial actions in a cooperative fashion. Typical immediate actions include:

- Enforcement emphasis by the local police department
- Shoulder repair or widening with local maintenance crews
- Signs and pavement markings
- Appropriate crossing guards under the supervision of the school principal and the transportation director

Prioritize remainder of remedial actions for project development

The SAC should adopt a prioritized list of the remaining remedial actions. The priorities should reflect the school district's priorities to the extent possible, but may be modified to reflect funding realities and local political considerations.

Step 5. Transmit findings and recommendations to school board

The SAC should prepare a formal transmittal to the school board of its findings and recommendations for review and action by the school board. Those remedial actions which require financial commitments by the school district, such as funding flashing beacons on state highways or local roads, providing the local matching share of state or federal grants, and providing paid adult crossing guards, probably require formal action by the school board. Likewise, the board should review and vote on the prioritized list of improvements to be sent to the local jurisdiction's elected officials to ensure that the list reflects the board's priorities as well as those of the SAC members and the school district operations staff.

Step 6. Continue efforts to implement remedial actions

The school pedestrian safety projects should proceed through the local agency's funding process which includes preparation of a project prospectus, cost estimates and incorporation into the Six-Year TIP (if appropriate). Several pedestrian safety improvements could be combined into a single line item for the Six-Year TIP covering multiple locations throughout the jurisdiction.

The public works agency should take the lead in exploring funding options for these projects, drawing on the assistance of other SAC members as needed.

The SAC members and various interest groups should continue their efforts to implement the remedial actions. Each group has a special role:

- Public works agency – administer the school pedestrian safety improvements through the TIP process and prepare grant applications for individual projects or groups of projects
- School district – provide political and funding support for remedial actions, including crossing guards at appropriate locations
- SAC – inform parents and the school district about the status of projects, educate parents, school staff and elected officials about the many benefits of these projects
- Parents – reinforce safe walking behaviors in their children and provide political support for using local tax dollars to implement these improvements

Potential Remedial Actions

This section presents an overview for school district staff, SAC members and interested parents of potential operational actions, physical facilities and safety treatments which might be used to remedy identified pedestrian school safety concerns.

Guidelines

Safety is the overarching requirement in the design of streets, highways, traffic control devices and pedestrian facilities. The entire "streetscape" should create a safe environment for motorists, bicyclists, and pedestrians. While there are many options for pedestrian safety improvements, a list of "off-the-shelf" pedestrian treatments and design standards will not produce a safer environment for children walking to and from school. Each situation is unique, and all design elements must be reviewed at a given location when considering measures which produce the safest condition for student pedestrians. This review must be conducted by the local public works agency responsible for the roadway, and must

follow accepted traffic engineering practices and apply accepted engineering design standards in each case.

Listed below are some guidelines which should be considered when implementing any remedial actions for pedestrian safety concerns:

1. **No physical improvements should be initiated without the appropriate level of engineering study and justification by the local public works agency.**

2. **Likewise, no operational measures, such as adult crossing guards or pedestrian signal timing changes, should be implemented without review by the public works agency.**

3. **The remedial actions must meet all applicable laws and standards, i.e., ADA, MUTCD and WSDOT standards.**

   There are adopted standards for the design, construction and operation of streets, roads, highways and pedestrian facilities. The most significant include the Americans with Disabilities Act (ADA) requirements, the *Manual on Uniform Traffic Control Devices (MUTCD)*, *A Policy on the Geometric Design of Highways and Streets* (American Association of State Highway and Transportation Officials), and WSDOT's *Local Agency Guidelines (LAG)*. Each set of standards has warrants and requirements for installing certain pedestrian and traffic control devices and treatments.

4. **The selected action must address a specific pedestrian safety concern in a safe and cost-effective manner.**

   The "obvious" solution is not always the best. For example, a recent study of marked pedestrian crosswalks indicated that pedestrian accident rates are higher at marked crosswalks than at unmarked crosswalks. (This study is discussed in a later section.)

5. **The school district must provide support through financial commitments, and the provision of adult crossing guards and school patrols where appropriate for safety.**

   Research on child perception has shown that children in the 5 – 9 age range lack the necessary skills and judgment to safely negotiate an uncontrolled crosswalk or traffic-signal-controlled intersection. In these cases, adult crossing guards or safety patrol should be provided in conjunction with the public works agency's improvements.

Other documents provide valuable guidance on the selection, design and implementation of pedestrian facilities; these include the FHWA *Traffic Control Devices Handbook* (currently out of print), *Planning and Design and Maintenance of Pedestrian Facilities* (FHWA, 1989), the Institute of Transportation Engineer's *Traffic Engineering Handbook*, ITE's *School Trip Safety Program Guidelines*.

If the transportation manager and public works staff conduct the field investigation together, many of these design-related issues can be accomplished during the field work and directly recorded. If the transportation manager conducts the field investigation alone, the recommended project would need to be subsequently reviewed and modified as necessary by public works.

Roadway improvements

The range of potential actions which could be considered along roadways without adequate shoulders or sidewalks are shown in Table 9.

Roadside Pedestrian Safety Improvement
Gravel Shoulders
Separated Gravel Path
Paved Shoulder
Separated Paved Path
Curb/gutter/sidewalk

Table 9. Potential roadway pedestrian safety improvements

Shoulders

A shoulder is that part of the roadway which is adjacent to but outside of the travel lanes for use by pedestrians and bicyclists, and by stopped vehicles in temporary or emergency situations. Shoulders may be paved or unpaved, and may exist on one or both sides of a roadway. Shoulders are not parking lanes, which are paved or unpaved areas of the roadway meant primarily for short or long term parking of vehicles.

Design standards for shoulders vary among jurisdictions, and between urban and rural areas in many jurisdictions. The WSDOT *Local Agency Guidelines* lists minimum shoulder widths for new construction from 3 feet (roadways with less than 400 ADT) to 8 feet (rural major collector above 2,000 ADT and urban minor arterials). Shoulder improvements should meet the standards of the local public works agency.

At a minimum, shoulders which are part of a designated school walk route should be at least 5 feet wide if provided on both sides of the road, and at least 8 feet wide if constructed on only one side of a roadway. The extra width for the 8-foot shoulder allows students to walk safely off the roadway in either direction; with 5-foot shoulders, students should walk on the left side of the road facing traffic. Gravel shoulder improvements are illustrated in Figure 32 and Figure 33.

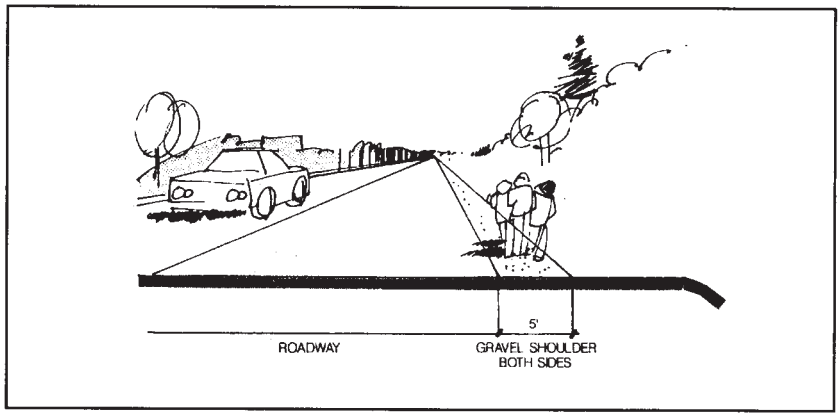


Figure 32. Illustration of five foot wide gravel shoulders

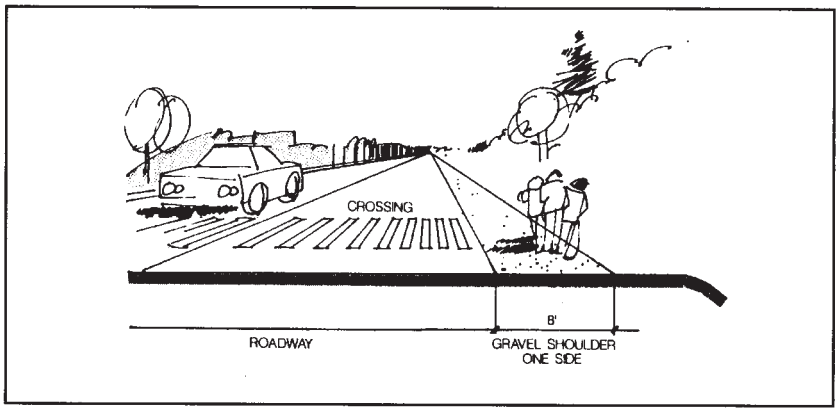


Figure 33. Illustration of an eight foot shoulder on one side only

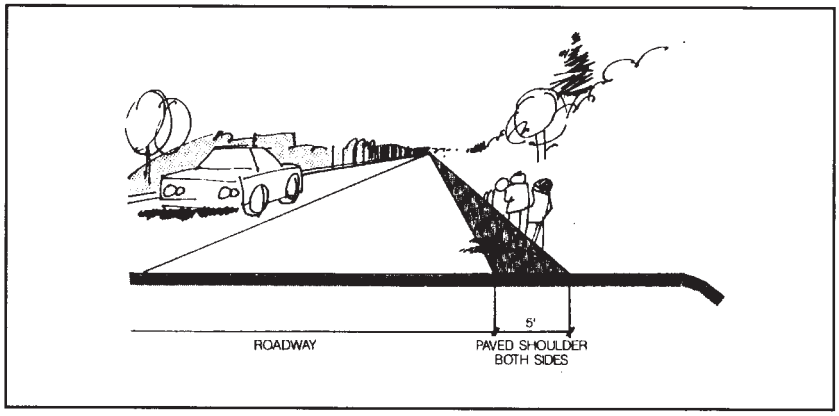


Figure 34. Five-foot paved shoulder

Paved versus gravel shoulders. It is desirable that the color and texture of shoulders provide a high visual and tactile contrast with the travel lanes. This contrast helps define the traffic lane at all times and discourages drivers from straying onto the shoulder area. Crushed stone or gravel materials all offer excellent contrasts with asphalt or concrete pavements. On the other hand, these surfaces are less safe for bicyclists and may wear faster than paved shoulders. Paved shoulders are more expensive to install, but are less costly to maintain; they also provide an excellent all weather surface for both pedestrians and bicyclists. Most local jurisdictions have guidelines or preferences for paved versus gravel shoulders under certain conditions.

Improvements on one side vs. two sides. Typically, shoulders should be constructed on both sides of the roadway. If there is a walkway on only one side of the roadway, some pedestrians will need to cross the road to reach the walkway. This creates concerns associated with roadway crossings. In some cases, however, a shoulder on one side of the roadway may be the best solution due to physical or right-of-way constraints. One-side shoulder improvements are often preferred by local public works agencies, because they are less costly to build and maintain than two-sided improvements. Paved shoulder improvements are shown in Figures 34 and 35.

If the slope of the roadway edge is particularly steep on one side of the roadway but fairly level on the other, constructing a widen shoulder on only one side may be the most cost-effective solution. If the slope of the roadway edges on either side of the roadway are similar, constructing improved shoulders on both sides of the roadway may be preferred.

Separated pathways

The decision to locate a pathway at some distance from the roadway versus improving a shoulder adjacent to the roadway depends primarily on three factors: local public works standards and practices; the specific characteristics of the roadway, the surrounding terrain, and adjacent land use; and the available right-of-way.

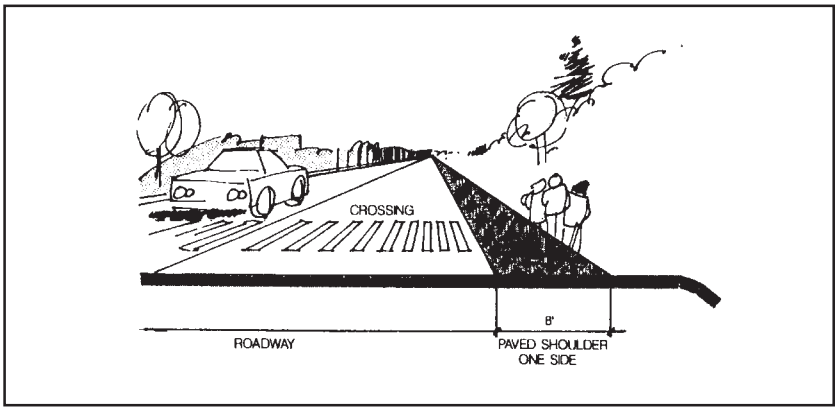


Figure 35. Paved shoulder on one side with crosswalk

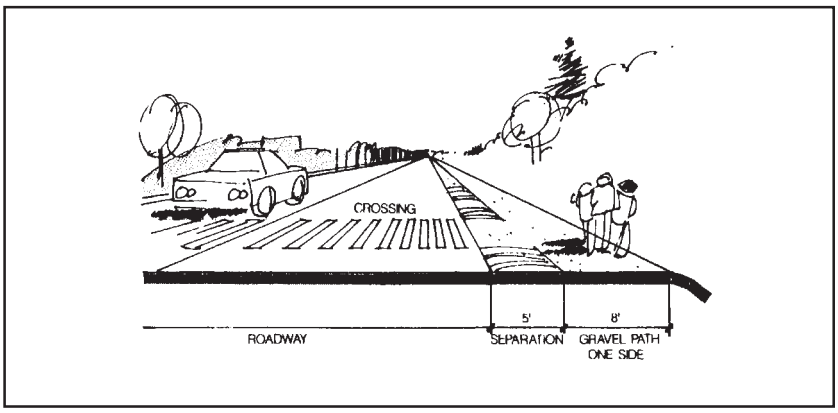


Figure 36. Gravel pathway

A typical example of a separated gravel pathway along a rural road is shown in Figure 36. **The 5-foot separation from the roadway is only a recommended minimum.** The actual separation will be influenced by the available right-of-way, cross-slope grades and the drainage considerations.

Although gravel walkways outside a drainage ditch provide safety benefits to pedestrians, they provide little benefit to other roadway users, such as motorists and bicyclists. Widened shoulders provide a breakdown area for vehicles, a safety buffer from fixed roadside objects such as ditches and power poles, and an area for bicyclists to travel without interfering with the flow of vehicle traffic. All of these factors should be considered by the local public works agency in determining the preferred walkway treatment for a given roadway.

The slope of the roadway edge may also play a role when a walkway is behind a ditch. Along a roadway with a relatively level, unobstructed area between the edge of the ditch and the right-of-way limit, it may be easier to construct a walkway outside the ditch than to reconstruct or enclose the ditch with a widened shoulder. The required earth cuts and fills associated with roadways through rolling terrain result in slopes between the roadway and the right-of-way edge which may preclude any walkway separation from the roadway.

Curb, gutter and sidewalks

In urban areas, the design of curb, gutter, and sidewalk may vary depending on the classification of the roadway and available right-of-way. Arterial standards may prescribe a sidewalk separated from the curb by a planting strip, while standards for collectors or local streets may allow sidewalks adjacent to the curb. The higher traffic volumes on arterials make separated sidewalks more desirable. Also, arterials tend to have wider rights-of-way, which usually enables sidewalks to be located further from the roadway.

As with improved shoulders, sidewalks can be five feet wide if provided on both sides of the road (see Figure 37) but should be eight feet wide if built on one side only (Figure 38).

The decision to build sidewalks instead of widened shoulders or pathways depends largely on the jurisdiction's design standards for a given roadway, drainage considerations for the road section as a whole (i.e., open ditch versus enclosed drainage, grass swale versus more complex storm water treatment facilities, etc.), and the character of the surrounding area. Sidewalks are safer for pedestrians because the curb provides a physical barrier between them and the moving vehicles, but they are also more expensive to construct.

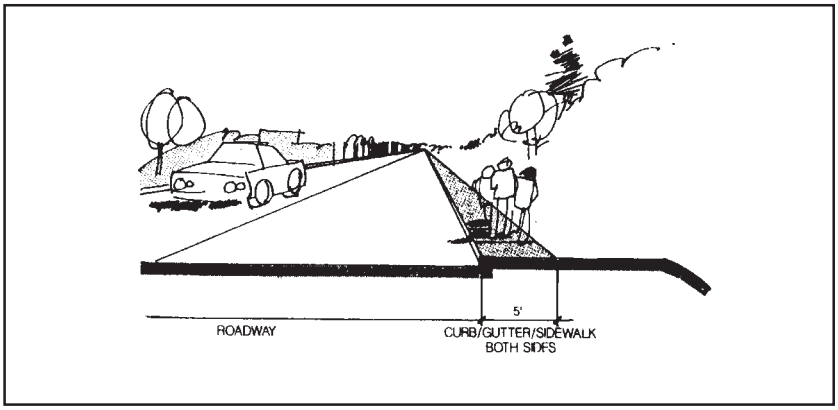


Figure 37. Curb, gutter and 5-foot sidewalk both sides

Pedestrian crossing treatments

When school walk routes must cross a roadway, it is important to make that crossing as safe as possible. A safe crossing environment is especially important at locations that have high volumes of school children, such as intersections or crosswalks near the school. Marking these locations with standard traffic control devices will help the students know where it is safest for them to cross the road and will help drivers realize that they are driving through a school pedestrian zone.

The *Manual on Uniform Traffic Control Devices (MUTCD)* bases the need for pedestrian crossing traffic control on the number of adequate gaps, or space between vehicles, in the roadway's traffic stream. It states that a pedestrian must wait for a gap in traffic that is of sufficient duration to permit a street crossing without interference from vehicular traffic. When the delay between adequate spaces becomes excessive, children may become impatient and endanger themselves by attempting to cross the street during an inadequate gap. Typically, when adequate gaps occur less frequently than an average of one per minute, some form of traffic control is necessary to reduce the potential problem. Thus, only pedestrian actuated signals or grade separated facilities have been recommended for roadways that exhibit these characteristics. There are other alternatives. Any signal can be made to accomodate pedestrians, a police officer can assist the crossing, an adult guard can also provide assistance in more complex situations.

The range of potential school pedestrian crossing treatments are presented in Table 10. When selecting the type of crossing improvement, several roadway features should be examined. The distance of the pedestrian crossing from the school is one feature that will have some bearing on the type of facility that is selected. Crossings located farther away from the school that are used by fewer children should be considered for lower cost improvements than crossings adjacent to the school. In all cases, the crossing treatment must be based on a traffic engineering study of the specific situation and must conform with standard traffic engineering practices.

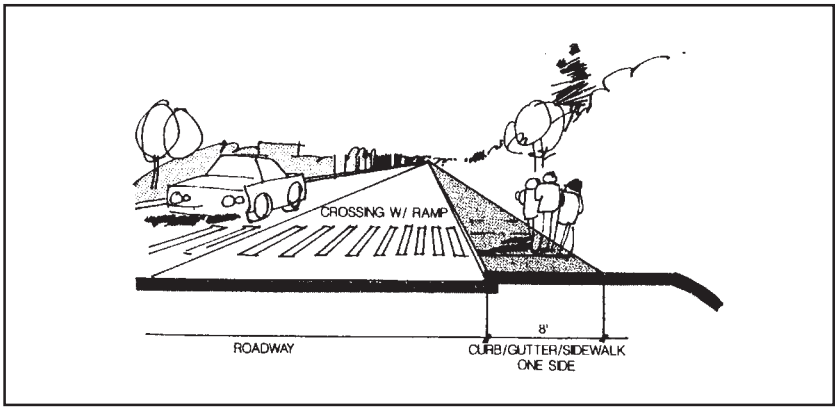


Figure 38. 8-foot sidewalk on one side only with crosswalk

Pedestrian Crossing Treatments
Uncontrolled crossing
Stop controlled crosswalk
Crosswalk with flashing beacon
School pedestrian actuated signal
Pedestrian overpass/underpass

Table 10. Potential crossing treatments

Marked vs unmarked crosswalks

Gibby, AR; JL Stites; GS Thurgood; and TC Ferrara; *Evaluation of Marked and Unmarked Crosswalks at Intersections in California*; California DOT; Sacramento, 1994.

For two decades, transportation agencies in California have been reluctant to mark pedestrian crosswalks. Limited studies had concluded that at unsignalized intersections, marked crosswalks have a higher frequency of accidents than unmarked crosswalks. This study compared the accident experiences of 380 randomly selected intersections between 1989 and 1993 using statistically valid techniques. Traffic volumes were obtained for all 380 intersections, and pedestrian counts were taken at 55 locations. The major results were: (1) at unsignalized intersections, marked crosswalks clearly had higher pedestrian-vehicle accident rates than unmarked crosswalks; (2) for signalized intersections the results were inconclusive; and (3) there is no compelling reason for Caltrans to change intersection crosswalk marking policy.

Marked versus unmarked crosswalks

Marked crosswalks are meant to guide pedestrians to cross at the safest location; they are not safety devices to protect pedestrians from vehicles. A recent study of 380 intersections in California found that marked crosswalks at unsignalized intersections experienced **higher** pedestrian accident rates (in terms of both vehicles and pedestrians using the intersection) than unmarked crosswalks at comparable unsignalized locations. Pedestrian accident analysis results at signalized intersections were inconclusive.

Therefore, marked crosswalks should only be installed after a traffic engineering analysis determines that a marked crosswalk is the best solution for that location. Typical candidates include signalized intersections, locations with a school patrol or adult crossing guard and locations where pedestrian and traffic volumes meet warrants for pedestrian signals specified in the *MUTCD*.

As a general rule, marked crosswalks should not be installed along school walk routes unless the school district commits to providing either an adult crossing guard or school safety patrol during the times students will be walking to and from school. Marked crosswalks must be accompanied by advance warning signs and pavement markings which meet the standards of the MUTCD. Figure 39 illustrates a typical crosswalk layout near a school with advance warning signs, reduced speed zone and marked crosswalk.

To function safely marked or unmarked crosswalks should provide an unobstructed visual field between motorists and pedestrians. Street furniture, such as utility poles, mailboxes, telephone booths and trees should not hide the pedestrian from view. Parked vehicles (even momentarily) are also visual obstructions, especially for children, wheelchair occupants and people of small stature. RCW 46.61.570 prohibits parking within 20 feet of a crosswalk. Additional parking restrictions should be considered at all crosswalks.

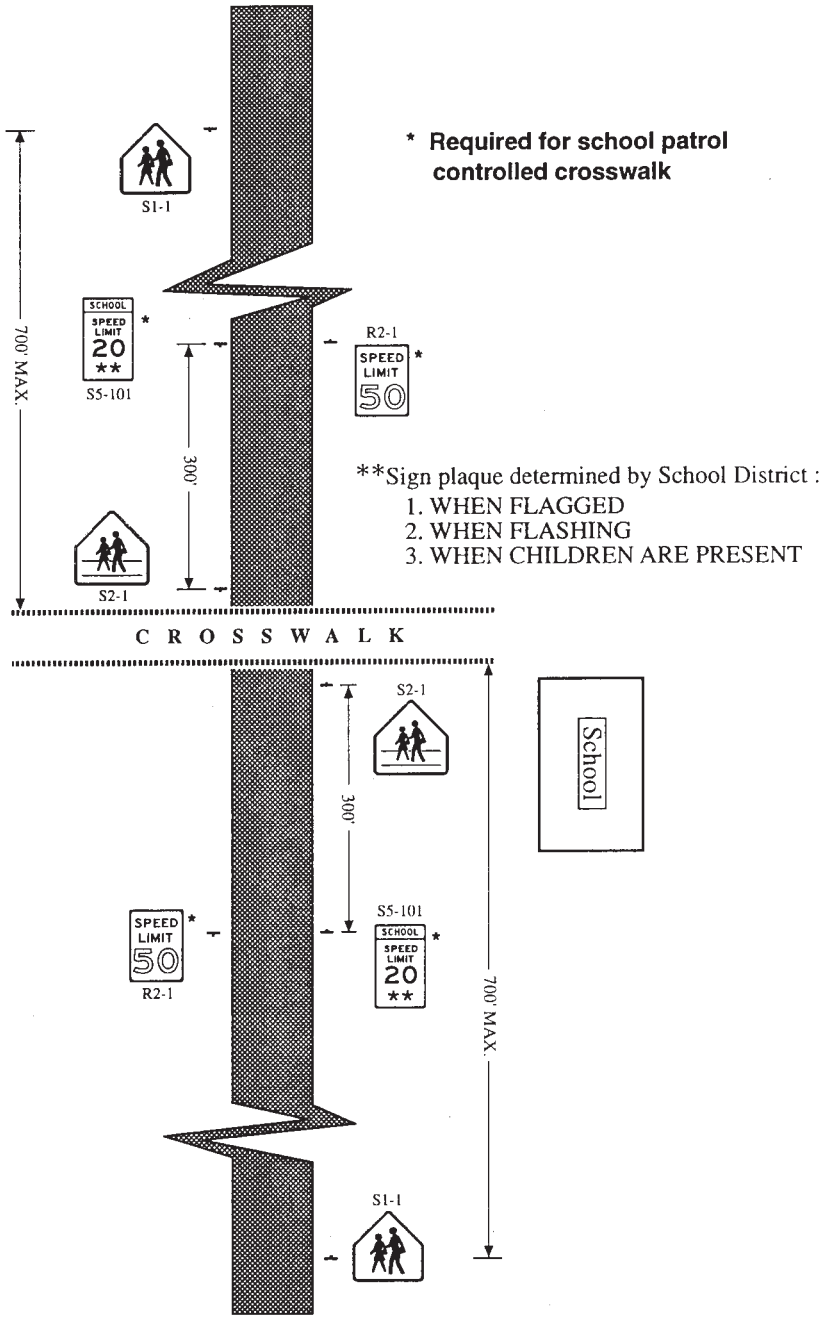
Marked crosswalks are required under WAC 392-151-030 at locations which are controlled by school patrol members. The relevant portion of this regulation is quoted below.

> **WAC 392-151-030 Controlled crossings**. School patrol controlled crossings shall not be operated unless proper traffic control devices are in place as depicted in Washington state department of highways, *Sign Fabrication Manual* and *Manual on Uniform Traffic Control Devices*, as now or hereafter amended. As a minimum, these shall consist of: (1) school crossing warning signs (S1-1 and S2-1), (2) marked crosswalks, and (3) school speed limit sign [i.e., 20 mph]. Contact shall be made by school authorities with the governmental agency having jurisdiction over the street or highway in question in order to secure the necessary signs.

The *MUTCD* and WAC 392-151-035 provide for a variety of standard signs and pavement markings to be applied near schools. These include signs alerting drivers to the presence of a school or school crossing ahead, and 20 mph speed limits in school zones. Some were shown previously in Figure 39 to support a marked crosswalk location. Other signs are listed in section 7B of the *MUTCD*.

Uncontrolled crossing

Uncontrolled, unmarked crossings represent the least-cost treatment for pedestrian crossings. An appropriate example would be where only a few children are crossing a local street that has low traffic volumes and low traffic speeds. These facilities are likely to be more appropriate at crossing locations that are farther away from school, though in certain situations, they may also be appropriate at crossing locations near the school.



See MUTCD Section "Traffic Control for School Areas" for sign spacing

Figure 39. School crosswalk signs and markings

An uncontrolled, ***marked*** crosswalk with a school patrol crossing guard would be appropriate for locations near a school that experience a higher volume of children crossing a road with low speeds and a low to moderate volume of vehicular traffic. An uncontrolled crosswalk with an adult crossing guard would be appropriate for locations near a school that experience a higher volume of children crossing a road with moderate speeds or a moderate to high volume of vehicular traffic.

School crosswalks attended by a school crossing guard (student or adult) which are not controlled by a traffic signal or stop sign are defined as "school patrol controlled" crosswalks. School patrol controlled crossings shall not be operated unless proper traffic control devices are in place as depicted in WAC 392-151-030, Washington State Department of Transportation, *Sign Fabrication Manual* and *Manual on Uniform Traffic Control Devices*, as now or hereafter amended.

Stop controlled crosswalk

Stop controlled crosswalks, consisting of stop signs and stop bars, with or without actual pedestrian crosswalk markings, provide the added protection of having all vehicles stop at the crossing. However, the *MUTCD* defines warrants for installing stop signs at intersections, and the warrants focus on traffic movements rather than pedestrian needs. Therefore, a stop controlled crosswalk should not be installed unless a traffic engineering study has determined that this is the best remedial action for the given situation. A typical stop controlled crossing is shown in Figure 40.

Since vehicles must stop for the stop signs, there is less need for paid adult crossing guards or school patrols at stop controlled crosswalks. However, this additional protection should be considered at intersections where pedestrian volumes are high, and traffic volumes are moderate. Stop controlled crosswalks are not appropriate for midblock locations, but may be used at driveways to major pedestrian attractions, such as at the school, or at the entrance to a park or play field.

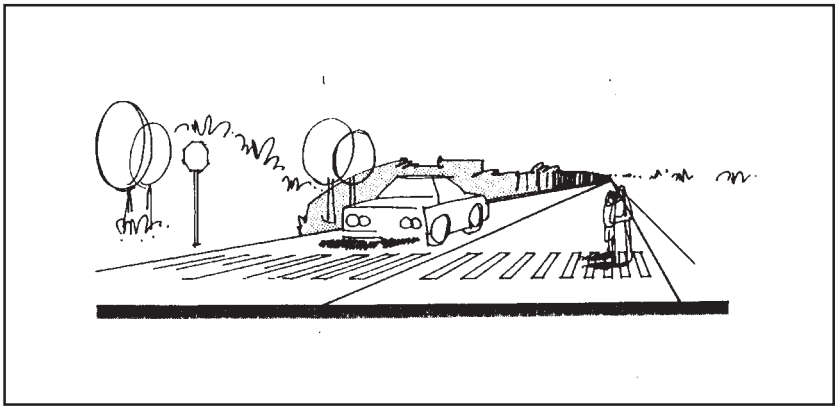


Figure 40. Stop controlled crosswalk

Crosswalk with flashing beacon

A crosswalk with a flashing beacon provides an optional, relatively low cost treatment for a mid-block pedestrian crossing. These devices are authorized under sections 4E-1, 4E-5 and 4E-6 of the *MUTCD* relating to hazard identification beacons, and a mid-block crosswalk is one of the specific applications noted for this device. The flashing light alerts drivers in advance to the potential of pedestrians without forcing them to stop. This sort of control is more versatile than a stop controlled crosswalk because it can be used on roadways with higher vehicular volumes without causing any undue delay to drivers.

WSDOT's *Traffic Manual* lists the following standard for overhead school crosswalk signs with flashing beacons:

> An overhead SCHOOL CROSSWALK sign is not contained within the *MUTCD* and, thus, is an extraordinary traffic control devices. They are only installed at locations where school authorities request supplemental traffic control for marked school crosswalks and only after a traffic engineering analysis that considers other traffic control measure prior to installing this sign.
>
> Although their use is generally discouraged, when installed the signs should include flashing lights which are on only at the time school children use the crosswalk. Because these signs are an extraordinary device, all associated costs for their installation and maintenance are to be the school authority's responsibility. The school district should also be responsible for ensuring that the flashing lights are on only when school children use the crosswalk. (WSDOT *Traffic Manual*, page 2-10)

A crosswalk with a flashing beacon may be appropriate where moderate volumes of children are crossing a street that exhibits low to moderate traffic volumes and low to moderate traffic speeds. These facilities are likely to be more appropriate at crossing locations that are near the school, though in certain situations, they may also be appropriate at crossing locations further away from the school where significant other pedestrian activity takes place.

A crosswalk with a flashing beacon and a student patrol would be appropriate for locations near a school that experience a higher volume of children crossing a road with low to moderate speeds and a low volume of vehicular traffic. An adult crossing guard would be appropriate for locations near a school that experience a higher volume of children crossing a road with moderate speeds and/or a moderate volume of vehicular traffic.

Pedestrian actuated school signal

Most new and recent traffic signals in Washington state provide marked crosswalks, pedestrian indications (symbolic walk/don't walk indications) and pedestrian actuation buttons.

Pedestrian actuated signals may be appropriate for roadways that have high traffic volumes and/or speeds or have a cross-section of four lanes or more. Because these signals only operate in the presence of foot traffic, they do not cause undue delay to vehicles during periods of low pedestrian volumes. Pedestrian actuated signals are considerably more expensive to provide than other facilities and should only be considered in locations where pedestrian volumes are high enough to warrant the expense, such as where high pedestrian volume walk routes cross major arterials or other high volume or high speed facilities.

The *MUTCD* defines the warrants for a school crossing traffic signal as shown below:

> A traffic control signal may be warranted at an established school crossing when a traffic engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at the school crossing shows that the number of adequate gaps in the traffic stream during the period when the children are using the crossing is less than the number of minutes in the same period. (i.e., when the frequency of adequate gaps is less than one per minute.) MUTCD, section 4C-6 Warrant 4, School Crossing

Therefore, signals should not be installed for school pedestrian crossings unless justified by a traffic engineering study which has considered other traffic control measures.

Pedestrian actuated signals may be used at both intersection and midblock locations when warranted by a traffic engineering study. Intersections are the preferred location for these facilities, however, to preserve the continuous flow of traffic along the corridor.

Pedestrian overpass or underpass

In cases where vehicle speeds and/or volumes are excessively high, or where the roadway's cross section is exceptionally wide, such as freeways and principal arterials, the installation of a pedestrian overpass or underpass should be considered. Because these facilities are very expensive compared to other solutions, they should only be considered in areas where a large number of children will benefit from their construction. Figure 41 shows an example of a pedestrian overpass.

For example, a pedestrian overpass or underpass would be appropriate if a large neighborhood is separated from the school grounds by a freeway, and no pedestrian-friendly crossings are located in the vicinity. If the pedestrian overpass or underpass were constructed, all the children in the neighborhood would be able to walk safely to school. If no facility were built, all the children in the neighborhood would have to be bused.

Generally, overpasses are more cost effective and do not have the security problems associated with underpasses. There are several considerations to be examined prior to the construction of a grade separated facility:

Figure 41. Pedestrian overpass

- Neighborhood and school demographics change, so a study should be conducted to determine if a permanent need for the facility exists.
- The location should lend itself to easy access so pedestrians will not continue crossing the street at-grade. It may be necessary to construct fencing or other barriers to prohibit pedestrians from crossing at the street level.
- An acceptable alternative (route change, boundary change, etc.) to a grade separation does not exist.
- The location must provide for practical construction. Suffi cient space must exist for ramp access, sidewalks, utilities, lighting, and other related needs.
- Certain federal or state standards may require barrier-free design for wheelchairs and bicyclists.

Since pedestrian overpasses or underpasses provide a long-term and costly solution to the school crossing problem, it is suggested that their use be considered only when justified by all the criteria listed above.

If a pedestrian overpass or underpass is selected, the following steps should be taken by school and traffic authorities to assure proper use of the structures by school children, as well as by other pedestrians:

- Consider the installing fence barriers to force children to the overpass, thus preventing them from avoiding the structure by using other routes.
- Maintain adequate sanitary conditions, particularly in underpasses.

- Provide adequate policing and illumination of the structure to ensure people and property are safe.
- Instruct the users in orderly conduct, particularly to prevent objects being thrown from overpasses and cause damage to vehicles passing beneath. In some instances, this may require enclosing the structure.

Crossing Guards

Used in conjunction with the crossing treatments listed above, adult crossing guards or school patrols provide inexpensive way to increase the safety of the facility for school-aged pedestrians.

Adult crossing guards

There are no specific state regulations governing the actions of paid adult crossing guards, such as school teachers or administrative assistants who serve as crossing guards in addition to their other duties. WAC 392-151 deals only with school patrol members, either students or adults, who serve without compensation, except for school patrol supervisors who may be paid but whose duties do not include actually directing students or traffic at crossings. There are guidelines for both adult crossing guards and school patrol members in section 7E of the *MUTCD*. Therefore, the information presented in this subsection should be considered as advisory guidelines rather than specific rules for paid adult crossing guards.

School Safety Patrol Manual

The state SPI has developed a manual to help school districts set up school safety patrol programs. The manual provides step by step guidance including training suggestions, hours of duty, legal requirements and recognition options.

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It is recommended that all adult crossing guards be given adequate training in monitoring traffic and directing the movements of children through the crossing area.

Adult crossing guards assist students across streets by providing or lengthening a gap in traffic. They should be uniformed and carry a handheld flag so that motorists and pedestrians can recognize them and respond to their signals. They should not direct traffic in the usual police regulatory sense, but rather, they should pick opportune times to create a safe gap in traffic. Their presence in the roadway serves notice that children are about to cross. When all traffic has stopped, the adult guard allows children to cross.

When considering adult crossing guard as the form of control to provide adequate gaps at school crossing, the following procedures should be adopted:

- A traffic engineering analysis should be made to determine the need for adult crossing guards. The potential demand for this type of control makes it essential that this procedure be strictly followed if crossing guard assignments are to be held to a minimum.

- The school district, in conjunction with the traffic enforcement and public works agencies, should be responsible for the training, supervision, and assignment of adult crossing guards.
- Crossing guards should take advantage of their assignment to properly instruct the children in safe crossing behaviors, and develop in the children the ability to take care of themselves at any pedestrian crossing. They should not relieve children of all crossing safety responsibility at school crossings.
- A police officer should be used to protect school crossings only when no other means as well suited can be found. Their use for school crossing protection diverts resources from other essential police assignments. If police officers must be used in extreme cases, such use should be only temporary until another remedy for the safety concern can be developed.

School safety patrols

School safety patrols are authorized under RCW 46.61.385 and are guided by the regulations in WAC 392-151. The purpose of school patrols is to control the movement of children, not traffic. They should be used to direct and patrol children at crossings near schools where there is no need to create adequate gaps in traffic, at signalized intersections where turning movements are not a problem, and as assistants to adult guards in the control of children at crossing locations used by large numbers of children. Student patrols should be children from the 5th grade or higher.

WAC 392-151-030 requires that crossings controlled by school patrol members must be marked and signed in accordance with the *MUTCD*. In addition, student school patrol members may assist student pedestrian movements at crossings controlled by a police officer, an adult school patrol member or a traffic signal. (WAC 392-151-130) It is unclear whether or not a marked crosswalk is required in all situations governed by WAC 392-151-130.

When a program using a student patrol is undertaken, the following procedures should be followed:

- The school superintendent has the responsibility of initiating a school safety patrol program. The principal of each school, or his/her designee, is responsible for organizing, training, and supervising the school patrol. In addition, they should seek the assistance and the cooperation of the appropriate law enforcement, traffic engineering, and traffic safety agencies in this program. (WAC 392-151-015)

- The Safety Advisory Committee discussed in Chapter II of this *Guidebook* is important in the development and support of school patrol policy, and should approve locations where school patrol members are assigned. (WAC 392-151-010-017)
- Members of the school patrol should not be permitted to direct vehicular traffic. The duty of the school patrol is to direct or control children at the curb and permit them to cross the roadway only when there are adequate gaps in the traffic stream for a safe crossing maneuver. The traffic engineering authority should determine those locations where traffic gaps and other conditions will permit the safe assignment of the school patrol.
- The school patrol should only be assigned to crossings in the vicinity of the school grounds. Assignments at a consider able distance from the school cause excessive loss of school time for the patrol member, and poor supervision may result.

Railroad Crossings

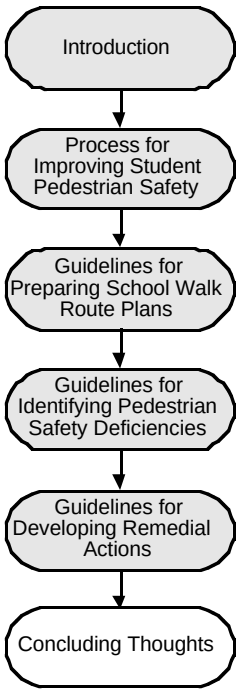
Railroad crossings present a special situation for school walk routes. They differ from roadway crossings because, when a train reaches a crossing, it always has the right of way and cannot stop to avoid a pedestrian. Fortunately, the frequency of trains at a rail crossing is far less than the frequency of vehicles at a roadway crossing. However, since most rail crossings have only a few trains each day, children (and adults) tend not to view the situation as a potential safety problem, and may use less caution when crossing the tracks than when crossing a road. If a train does come with a pedestrian on the tracks, however, there is little the engineer can do to avoid the pedestrian.

There are three general types of railroad crossing protection: those with crossbucks only, those with crossbucks and flashing light signals and those featuring automatic gates in addition to the flashing light signal and crossbuck sign. Crossbucks are a passive warning sign to alert motorists and pedestrians that identify and direct attention to the road crossing a railroad track at grade; pedestrians should stop, look and listen for an approaching train. Flashing light signals warn motorists and pedestrians when a train is approaching or is stopped near the railroad crossing. The automatic gates swing down to stop both vehicle and pedestrian traffic when a train approaches.

The pedestrian safety improvement options for train crossings are limited. Since stopping the train is not a viable option, the only recourse to improving pedestrian safety is to improve the method of stopping pedestrians or grade-separating pedestrians from the tracks. The least expensive solution is to place adult crossing guards or student patrols at the crossing, if the crossing is near the school. Otherwise, the only other options are to upgrade a crossbuck crossing to one with active protection, or to construct a pedestrian overpass.

The school district should also make a special effort to educate children about the safety concerns at railroad crossings. One approach is to periodically invite representatives from the railroads to discuss with children the proper crossing procedures at railroad crossings. Burlington Northern's *Operation Lifesaver* is one example of a program developed by a railroad operator for this purpose.

Always do right - this will gratify some and astonish the rest.
Mark Twain



Chapter 6
Concluding Thoughts

This *Guidebook* has presented many ideas and resources for successfully creating safer walking conditions and producing school walk route maps for school districts throughout Washington state. It is a "guide" book rather than a "cook" book — each school district has differing pedestrian needs, and the preferred walk routes must respond to the unique conditions in each neighborhood and along each roadway. Readers are encouraged to consult the references listed herein for more detailed information about how to deal with various pedestrian safety concerns and issues.

Getting kids to and from school, like other education issues, can no longer be viewed in isolation. Community pedestrian safety efforts that benefit schools and children also benefit other pedestrians regardless of age or activity. By combining resources, skills and support services of community agencies, the efforts to secure limited funding for improvements and programs are multiplied.

This *Guidebook* was developed in conjunction with WSDOT's school pedestrian improvement grant program (1995-1996). Over 200 potential improvements for school walk routes totaling $40 million were identified by local agencies and submitted to WSDOT for funding consideration. School staff, parents and public works agencies attended hearings throughout the state to secure dollars for the grant program. As a result of these combined efforts, over $3 million in state matching funds will be distributed to communities throughout the state for sidewalk, crosswalk and road shoulder improvements to make school walk routes safer.

The 1996 State Legislature passed Senate Bill 6684 which set a new direction in funding pupil transportation services. State transportation dollars for students living close to their neighborhood schools are no longer based on the existence of a hazardous walking condition but are distributed on a per pupil basis. The money can be spent for bus transportation, for crossing guards, and for matching funds for local and state transportation projects intended to mitigate pedestrian safety concerns. This change encourages communities and school districts to combine resources to improve walk routes.

The ultimate goal of this *Guidebook* is that communities will use it to establish a long-term, comprehensive, self-sustaining student pedestrian safety program. There are already a wide variety of community organi-

zations that develop and implement various strategies — public information and education programs, law enforcement, the adjudication of cases involving pedestrians and motorists, traffic engineering improvements, changes in laws and ordinances, school patrol and crossing guards, etc. This *Guidebook* can be used to implement or improve such on–going actions, and to develop a monitoring plan to evaluate the success of individual strategies, make mid–course corrections and achieve a cost–effective safety program.

The Guidebook emphasizes partnerships among various groups concerned about school pedestrian safety. Through these partnerships, each member becomes more aware of the other members' concerns, resources and constraints. For example, school board members need to consider the community's transportation network when siting new schools; public works agencies need to consider the impacts of road improvements on schools. Each needs to listen to the others concerns and foster a spirit of cooperation among all concerned. The ability to cooperate and use limited funds to achieve multiple goals will enhance the safety of not only our youngest walkers, but the entire community.