Pedestrian safety policies: The school district should set policies regarding school safety patrols, school walk routes, and pedestrian safety education. These pieces may be part of a large trip safety program that includes school bus route plans and the policy for providing bus transportation for students living within a one-mile radius of the school. The district should have an efficient and equitable process to address parent requests that bus transportation be provided for their child even though their child lives within a one mile radius from school.

Establishing and documenting pedestrian safety policies is one way to reduce potential liability for injuries sustained by students or employees. Washington Administrative Code (WAC 392-151-020) discusses issues of liability and suggests that the establishment of specific policies is one way to reduce possible liability.

Chapter Three, “Student Pedestrian Safety Educational Programs,” describes the elements of a good elementary student pedestrian safety program. Appendix A, “Ideas and Resources for Student Pedestrian Safety,” lists of resources dedicated to improving student pedestrian safety, encouraging walkable communities, and funding school walk route improvements.

Fostering Community Partnerships: School districts should take the lead in developing community relationships for improving student pedestrian safety. District administrators, or even the school board, need to clearly assign responsibilities to some entity—be it a department, person, or committee—that will have the authority to oversee pedestrian safety issues and the development and maintenance of walk routes. The authority needs to ensure that community partners are contacted and consulted with the goal to ensure that a community’s resources and knowledge are pooled to provide a comprehensive approach to pedestrian safety issues. Once identified, such an authority could:

- Oversee school walk route development and endorse school route maps;
- Prioritize and coordinate multi-agency, district-wide engineering pedestrian safety improvements;
- Act as mediator, hearing appeals regarding school walk route assignments; and
• Advise the school board or the district superintendent on recommended policies (or changes in policies) on pedestrian safety issues.

Please see, “Working Together,” on page 26 for more information on this topic.

Schools

School administrators are responsible for overseeing the school’s walk route and safety patrol programs. They should play an active role in student pedestrian safety education and training of crossing guards. School administrators are the primary contact for educating parents on the schools drop off and pick up procedures, or other school specific parking lot controls. They should encourage parents to model good pedestrian safety skills for their children by sharing student pedestrian safety education materials with them. The principal should review the programs yearly and oversee adjustments according to changes in the environment, such as new construction or increases in traffic volume. Schools are responsible for distributing walk route maps to parents and students, annually.

Local Governmental Jurisdictions

City, county, or state agencies will need to be involved with school pedestrian safety depending on who maintains the roads near the school. Build partnerships with city public works, county planning, or state department of transportation agencies. These agencies are responsible for designing, installing, and maintaining traffic control devices and other pedestrian facilities. A traffic engineer can work with school administrators to address pedestrian safety concerns and provide suggestions on possible fixes.
Local jurisdictions also administer zoning and building permits and in some locales, collect school impact fees from private developers. As mentioned under School District Responsibilities above, school districts and local governments need to keep each other aware of planned developments within the school district’s service area, as well as plans for improvements to the roads and pedestrian facilities within the district.

Local Law Enforcement Agencies

Local law enforcement officers may be able to offer school pedestrian safety education or may be available to train school patrols, both adults and students. Many agencies in Washington State practice community policing, assigning the same officer to answer all the calls from one set of schools. School principals can call their local law enforcement agency to see if this is the case and obtain the officer’s name. Then the principal can invite the officer to school functions or ask the officer to provide training. If dangerous driver behaviors are plaguing your walking routes, increased presence of a law enforcement officer during school commute times can go a long way towards correcting the problem behaviors.

Parents/Guardians

Parents of school children can make strong allies in promoting student pedestrian safety. Not only will their attitudes towards pedestrian and bicycle safety strongly influence their children, they also are likely to compose the majority of drivers around a school during pick up and drop off times. Parents should review pedestrian safety educational materials that come home with their child and remember to model ideal pedestrian behaviors. When the school walk route comes home, parents need to travel the route with their children and ensure that the child practices and understands safe walking behavior.

Parents also serve in leadership roles with Parent-Teacher organizations or as members of a school site council team. These roles often find parents at the forefront of improving safety for their children.
Drivers

Perhaps the greatest responsibility for school pedestrian safety lies with the individual driver. Pedestrians have the right-of-way in a crosswalk, marked or not, and driver’s must stop to allow a pedestrian to cross. Motorist must exercise extreme caution in school zones and along the route to school.

By building community partnership, unsafe driving behaviors can be addressed by a variety of solutions. Please see Chapter Seven, “Improving Safety On School Walk Routes,” Figure 11: Solving Unsafe Driver Behaviors on page 58, for a description of methods to improve driving behaviors along the walk route.

Students

A 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. Children develop life-saving pedestrian skills and awareness through practice under the supervision of educated adults who model safe pedestrian behaviors.

Other Governmental Agencies and Non-Profit Organizations

There may be other public agencies who are responsible for sections of the roadway along the walk route such as: parks department, cemetery district, port district, fire district, drainage district, utility division, railroad district, irrigation district, Department of Natural Resources, or Forest Service. Even private owners of easements such as power company, water company, neighborhood associations, or railroads could be affected by pedestrian improvement along school walk routes.

The Washington Traffic Safety Commission, the Washington State Department of Health, and the Kids Walk to School Program are just some of the resources available for improving student pedestrian safety. Please consult Appendix A, “Ideas and Resources for Student Pedestrian Safety,” for a list of resources dedicated to improving student pedestrian safety, encouraging walkable communities, and funding school walk route improvements.

Also, remember to contact elected officials and let them know about any student pedestrian safety concerns that occur in their district. They control the budgets and their support can be critical in funding solutions.
Working Together

As noted in Chapter Two, WAC 392-151-017 recommends that each school district establish a Safety Advisory Committee to aid in the development of school walk route plans and that committee members include school administration, law enforcement, traffic engineering, and school-parent organization.

While each school district may or may not actually have a Safety Advisory Committee comprised of such representation, the role and authority that such a committee would have needs to be clearly assigned by the school district. In districts around the state, this authority can be given to an existing community safety or security committee, can be assigned to a transportation department, given to the educational service district’s the risk manager; charged to the community site councils at individual schools; or doled out to any other individual, department, group, or committee that suites the district’s size and environment.

Tasks for Overseeing Pedestrian Safety and Walk Route Development

Once assigned, such an entity should work with community partners, either through a community-based committee, or through informal meeting to coordinate activities. The following is a list of possible tasks for such an entity:

- Advise the school board or superintendent on recommended policies on student pedestrian safety issues, including school patrol policies and placement at intersections, and school walk route development.

- Oversee walk route development and maintenance at each elementary school. Include middle school, junior highs, and/or high schools, if needed.

- Coordinate the receiving, reviewing, and resolution of suggestions and concerns about student pedestrian safety. Examine available collision and injury data to stay alert to any concerns along the walk route.
• Serve as the contact for local planning agencies (or include local agencies representatives on a committee) to receive notification of planned development, review development plans, and respond to any plans or environmental reviews within the school district’s service area.

• Provide input on city/county decisions about street and pedestrian improvement plans.

• Prioritize pedestrian safety concerns throughout the district and work with community partners to suggest solutions. Explore solutions that rely on parent education, enforcement, low cost signage or striping, as well as engineering solutions.

• Recommend actions to be taken and work with the school district and community partners to fund and coordinate improvement.

• Provide input to the decision process for new school location and design.

Although the cooperative process is ideal and necessary to maximize the use of public resources, each agency is legally responsible for measures within its jurisdiction as defined by local ordinance and state law. Any recommendations from a pedestrian safety committee or group should be evaluated for conformance with adopted engineering standards, for availability of funding, and for legal considerations by the implementing agency. The pedestrian safety committee should be sensitive to these issues in making their recommendations to local and state agencies. Active participation by local traffic engineers, public work staff, and the rest of the mentioned community partners should minimize infeasible recommendations.
Chapter Five
Ten Steps for Developing and Maintaining School Walk Routes

This chapter provides guidelines and step-by-step procedures for preparing walk route plans for schools in Washington. The information will provide an explanation of the principles that will guide in the selection of specific walk routes and steps necessary to end up with a map that presents the walk routes in a clear and concise manner and avoids extraneous information.

Ultimately, however, no guidebook can cover all situations, nor can it replace the need for common sense application of safe walking principles as applied to specific situations. Working collaboratively with traffic engineers, law enforcement officers, and other community professionals will provide the best results.

A School Walk Route Map

A school walk route map recommends a walking route to school based on considerations of traffic patterns and existing traffic controls such as crosswalks, traffic lights, or school safety patrol posts. The chosen route should seek to limit the number of school zone crossings in a way that encourages students to cross streets in groups, allowing only one entrance-exit from each block to and from school. A walk route should cover a one-mile radius from the school, excluding areas outside the school service area. A walk route does not need to cover neighborhood streets. A walk route should seek those routes that provide the greatest physical separation between walking children and traffic, expose children to the lowest speeds and volumes of moving vehicles, and have the fewest number of road or rail crossings. An example of a school walk route map is shown in Figure 2.
Process Overview
Following the step-by-step procedure for developing, implementing, and maintaining school walk route plans will result in creating clear and concise maps to show parents and children the preferred route to school. These steps are:

- Step 1: Assign responsibility
- Step 2: Prepare base maps
- Step 3: Inventory existing walking conditions
- Step 4: Inventory traffic characteristics
- Step 5: Design the walk routes
- Step 6: Prepare the draft walk route map
- Step 7: Review the route maps with district and community officials
- Step 8: Distribute and explain the maps
- Step 9: Evaluate the program
- Step 10: Maintain the program

Step One: Assign Responsibility
The first step is for the school board, superintendent, or their designated body to assign responsibility for developing school walk route plans. Some suggestions for this responsibility include the district transportation supervisor, the principal or site management council at each school, the security department, other existing safety committees, or even a person outside the district hired on contract to develop walk routes.

As discussed in Chapter Four, “The Partnership Approach to Student Pedestrian Safety,” the school district may have assigned the authority to oversee walk route development to a department, community-based committee, or individual. If that is the case, this entity will be overseeing walk route development, although, it may not be responsible for developing individual walk routes.

Whoever is assigned the responsibility for developing walk routes should review the information in the proceeding chapters to gain an overview in the laws and liability issues associated with walk routes, an understanding of childhood developmental limitations as it relates to their pedestrian skills, and the importance of utilizing community resources to provide the best possible solutions to walk route design concerns.
Step 2: Prepare Base Maps for Each School

A base map is a street map that covers a one-mile radius of the area around the school. It is a current, clear, and concise map drawn to scale. It will show only the streets, street names, street widths and the school location. The base map becomes the backbone of the school walk route map and so it is important that conveys only the essential information needed to communicate the suggest route to school to students and parents.

It is essential that the final walk route map be easily understood. Therefore, start with a very simple base map. Do not use an existing map that is complex, covers too large an area, or shows more than the streets and the school. Using a detailed map and drawing the designated the walk route over it will cause more confusion and problems than it will solve.

Maps can be obtained from city or county planning or public works agencies. Many 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. If this is the case, ask for one simple map that only contains existing streets, street names, and the school, and a separate map that shows traffic and roadway data which will be useful for Step 4: Inventory Existing Traffic Conditions. The city or county planning agency may be able to produce the final route maps, as well.

Figure 3, “Base Map,” on page 32, illustrates a clear and simple base map.

Make and keep several copies of the base map to use in the following steps. Walking conditions and traffic characteristics will be marked on the base map to create a map version to assist in route selection. A fresh base map will be used for marking the selected route and creating the final route to school map.

Step 3: Inventory Existing Walking Conditions

The next step is to identify existing walking conditions through a field inventory—by walking or driving through the area and recording the needed data directly on the base map. Begin this step by eliminating the areas within the one-mile radius base map that are:

- Outside the school service area;
- Qualify as neighborhood walkways (neighborhood walkways need not be included in the route to school map);
Figure 3: Base Map

This sample base map is clear and simple, showing only the school and major street names. The base map, developed during Step 2, is used as the “bottom layer” of the other maps that will be developed during school walk map development. Make several copies of the base map.
• Areas where students receive bus transportation instead of walking;
• Areas that are excluded for some other reason.

Figure 4, “Walk Route Study Area,” on page 34, shows a base map that has eliminated the areas that do not apply to the walk route. Eliminating these areas before conducting the field survey will save time.

The goal of the field inventory is to assess existing pedestrian facilities that can aid students walking to and from school. (Check with your local public works to see if they have already collected pedestrian information, through photographs or video recording for their traffic engineering records, or if they have equipment that could help log the needed information.)

Collect and record (or check existing records for) 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 traffic lanes
• parking areas and restrictions
• posted speed limits and warning signs, including the school zone speed limit signs and the type of school zone signage.
• crossing guard or 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, noting
  - condition and width of sidewalks and shoulders
  - shoulder material (paved, gravel, grass, non-existent)
  - distance of walkway from traffic or existence of planting strip or other means of separating pedestrians from moving traffic
  - the location of drainage or irrigation ditches
• high noise areas and other environmental obstructions to safe walking
• major line of sight obstructions as measured from the height of a child
• other relevant pedestrian safety factors observed in the field, such as the existence of potentially dangerous dogs whether loose, fenced or restrained in other ways; or commercial business that may use environmentally hazardous chemicals
• bicycle lanes or paths

Chapter Five  Ten Steps for Developing and Maintaining School Walk Routes
Figure 4: Walk Route Study Area

This map shows areas that have been eliminated from the base map because they are outside of the school attendance boundary or they are considered neighborhood walkways. The remaining streets will be evaluated for use as school walk routes. Eliminate such areas from the base map (beginning of Step 3) before conducting the walking condition field inventory (result of Step 3 shown on next page).
Figure 5: Pedestrian Inventory Map

This map shows the base map with the pedestrian inventory data noted, as the map would look at the end of Step 3. This map notes speed limits, cross walks, sidewalks, shoulder width, and other collected pedestrian information useful in determining the school walk route.
Figure 5, “Pedestrian Inventory Map,” on page 35, shows an example of what the base map will look like after the pedestrian inventory is completed and it features noted.

**Step 4: Inventory Traffic Characteristics**

The next step is to conduct an inventory of traffic characteristics. As you gather traffic data, simply add this data to the field inventory map that was developed during Step 3. This allows designers to see the “full picture” when they begin the task of designing the walk route. Figure 6, “Traffic Characteristics Map,” on page 37, shows a sample of how the map will look at the end of this step.

To begin, work with your local traffic engineer or public works department to:

- Identify high volume streets within the walking area;
- Collect data on traffic volumes and speeds on major streets within the school walking area; and
- Provide information on planned road improvements, high collision locations, and any know pedestrian safety concerns in the area.

Special attention should be paid to the streets adjacent to the school grounds. Collect data on traffic volumes and speed the streets close to the school grounds to determine the magnitude of potential conflicts at crossing points. Ideally, this school specific data should be collected during school commute times (before and after school).

Consider the type of traffic that travels the streets within the walking area. Heavy truck traffic along the walk routes pose safety concerns because large trucks require a greater turning radius, restrict sight while parked, and need greater distances and time to stop. Truck drivers may also have a greater difficulty seeing students immediately in front of, along side, or behind their vehicles. Therefore, note streets that carry heavy truck traffic and avoid routing students along or across these streets, when possible.

Also, work with the local law enforcement agency to determine if they have any information on safety concerns near the school walking areas. Concerns could include drug-trafficking activities, areas with a history of illegal or violent activity, identified sex offenders living or working along the routes, or even reports of dangerous dogs along the route. Mark these concerns on the map, as well.
Figure 6: Traffic Inventory Map

In this version of the map, traffic characteristics have been noted, as discussed in Step 4. This map is a base map with the pedestrian inventory and the traffic characteristics both noted on it. Collected traffic data includes traffic volumes, types of vehicles using the roadway, and known accident history.
Step 5: Determine the Walk Routes

Armed with the information gathered and noted on the Traffic Characteristics Map, it is time to begin choosing the actual routes students should be directed to take between their neighborhood and the school.

The objective in selecting a school walk route is to minimize roadside and roadway crossing conflicts to the extent possible. When choosing routes, remember that children may have to walk farther in order to follow the best route, but avoid making a child walk more than a block or two out of his way or he will likely ignore the selected route.

Begin by walking the streets and neighborhood near the outer limits of the mile radius from school and work inward to school. Plot drafts of walk routes on fresh copies of the “base maps” (the clear, concise map developed in Step 2), using sequential arrows indicating the direction of walking and the side of the street to be used. Consider that children walk from their neighborhoods to school, and then from school to their neighborhoods, noting different routes for coming and for going, if conditions require.

Use the guidelines to help make decisions about selecting the route. Note, however, that these are only guidelines and do not take the place of professional judgement in choosing the best walking path at a specific site.

Form Children Into Groups: Develop walk routes that form children into groups of larger numbers so that they cross street together. More children at a crossing helps increase driver awareness and increases driver’s compliance with crosswalk laws. If large numbers of children will be gathering at crossings, chose the intersections that provide the best refuge (large shoulders or sidewalk areas) while they are waiting to cross.

Use Sidewalks, Wide Shoulders: Select routes that use sidewalks or paths, where available. Direct students to walk on the left side of the road, facing traffic on streets, whenever feasible. As a rule of thumb, have students walk the shortest possible distance on streets without sidewalks or wide shoulders. Since this is situation can be cause for concern, if no sidewalk or adequate shoulder exists, please see, “Special Considerations,” at the end of this discussion.

Select Safest Roads: Direct the walk route along the roads with the slowest speeds, the lowest traffic volumes, and the least volume of trucks. Use the information gathered from the public works departments to determine this, as well as information gathered from a visual inspection.

Consider Easements and Shortcuts: Use easements with walkways through parks or other available areas only after evaluating safety.
Check the information from the local law enforcement agency to ensure that the area is not known for drug trafficking or other illegal activity. Physically walk the route to ensure no other concerns are present on the route. Do not endorse a “student short cut” through private property.

Select the Safest Crossing Location: Determine the safest place for children to cross by visiting each potential crossing location. Check the information gathered on pedestrian features and traffic characteristics to help determine the best crossing location. Watch traffic during school commuter times to determine if natural gaps in traffic occur more frequently at one location than another. Consider what can actually be observed about visibility, speed, and parking conditions, as well as hard information already gathered when making your choice. Choose the location that offers:

• Lowest traffic speeds and volumes,
• Least amount of heavy truck traffic,
• Best sight distance.

Avoid using crossings where roadway curves interfere with sight distance. Choose the a place free from shrubs, parked cars, or other obstacles that would interfere with the pedestrian’s view of traffic and the driver’s view of the pedestrians.

Maximize the Use of Existing Pedestrian Crossings Protections: Whenever possible, direct students to cross at intersections that have existing stop signs, marked crosswalks, traffic signals, pedestrian signals, or school safety patrol posts. Check that timing and displays are adequate for children’s skills and speed. Recommend the use of the school safety patrol to compliment existing crossing controls within the school zone, if necessary.

Limit the Number of Crossings: Limit the number of crossing points within the school zone. Minimizing the number of crossing will help group children together for crossing, and provide less exposure to potential conflicts with vehicle traffic. Keeping the number of crossings to a minimum also reduces the resources needed for crossing protections such as stop signs, lights, safety patrol posts. Driver awareness and compliance is also increased by keeping the number of school zone crossing points to smallest number possible.

Avoid Mid-block Crossings: Mid-block crossing should be designated only if they are either signalized or supervised by an adult member of the school patrol. Proper pedestrian crossing signs and enforced curb parking restrictions are necessary to assure sufficient visibility in a mid-block crossing area.
**Consider Hours of Darkness, Inclement Weather:** If children will be walking routes during dark hours of the morning in winter, consider selecting streets that offer lighting. If no lighting exists, consider reminding parents and children about wearing light colored or reflective clothing when walking at dawn or dusk. Remember that rain, hail, sleet, and snow change sight distances and stopping requirements for vehicles.

**At the School, Keep Pedestrians Separate From Traffic:** Carefully select the location where the walking route terminates at the school. Keep it well separated from car and bus loading and unloading zones. Direct student around parking lots, never through them. Cars backing out of parking spaces pose a threat to small children.

**Shoulder/Sidewalk Considerations**

A concern raised by many tasked with designing school walk routes 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 the roadway, the volume and speed of traffic, sight distances along the roadway and at crossing points, and the walking distances involved. In general, consider the following:

**Sidewalks:** On roadways with sidewalks on one or both sides, direct students to walk along the sidewalk facing traffic, or to cross the street, if necessary, to reach the sidewalk if it exists on only one side. Students should be directed to cross at the safest crossing.

**No Sidewalks, Shoulders Same Width on Both Sides:** In general, on roads without sidewalks, students should be directed to walk facing traffic. This allows them to observe on-coming vehicles and move as far to the left away from traffic as they can. However, students may be allowed to walk on the shoulder on the side of traffic for a short distance if it significantly reduces the number of road crossings they must make.

**Adequate Shoulder on One Side, No Shoulder On the Other:** Another situation exists when, as on some suburban and rural roads, one side of the roadway has an adequate (at lest five feet wide) shoulder on one side, but a narrow or no shoulder on the other side. In these situations, the walk route designer must decide whether it is better 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 the narrow shoulder facing traffic. For help deciding, consider traffic volumes:

- On roads with moderate or high traffic volumes, walking on a five-foot shoulder in the same direction as traffic flow would probably be better than walking in the traffic lane facing on-coming traffic without a safe refuge to retreat to when meeting a vehicle.

- On low volume roads, it may be better to direct the students to walk facing traffic, even if it means walking on the roadway if drivers are usually able to encroach into the other lane of traffic to avoid a pedestrian because the low traffic volume means that is less likelihood that the driver would meeting an on-coming vehicle and a pedestrian at the same time.

The walk route selected using the criteria listed above will show the suggested path between a student’s neighborhood and the school, and while it may not be perfect, it should reflect the best choice given the existing walking conditions and alternates routes available. Despite efforts to make the best choice for the walk route, some routes may still present pedestrian concerns. The process of selecting a school walk route will help identify concerns so that addressing them becomes the next step. Chapter Six, “Identifying Needed Pedestrian Safety Improvements,” provides the walking condition evaluation form to help walk route developers get an overview of a route’s ability to serve a student population. Chapter Seven, “Implementing Improvements to School Walk Routes,” provides tips on using education programs, enforcement activities and engineering tools to improve safety on school walk routes.

A Final Check: After completing a draft version of the walk routes on a base map, “field check” the route one more time, walking the selected route keeping in mind a child’s viewpoint (36 inches above the ground). Crouch down at intersections to ensure a child’s sight lines are unobstructed. Also, consider a driver’s vantage point in terms of the walk route and the visibility of students to drivers. Consider “field checking” the route by walking the route with a few children.

Finally, be sure that all signals, signs, and crosswalks are functional and in the proper location. Note if signs need cleaning or if crosswalks need fresh paint and contact the traffic engineering or public works department to notify them if this is the case.
This map is a combination of the pedestrian inventory, traffic characteristics, and walk route selection information all noted on a single map. This a sample of how the map will look at the end of Step 5. However, this map would be too complicated to distribute to students and parents. The next step is to convey walk route directions in a clear and simple form.
When the walk routes have been selected, marked on the base map, then you'll have a map that looks similar to Figure 7, “Walk route Selection Map,” on page 42.

**Step 6: Prepare the Walk Route Map**

Now that the routes to school have been selected, the next step is to create a map that presents the routes to school in a clear and concise manner. Once this map has been approved, this is the map that will be distributed to students and parents. Figure 9, on page 44, shows a route to school map that is ready to be distributed.

Start with a fresh base map and indicate the selected routes to school. Use arrows, colored lines, different line weights, or whatever means to illustrate clearly the selected route and the direction of travel along the road. Keep the map simple and uncluttered. Be sure to indicate which side of the road to walk along coming and returning for those roads without sidewalks or adequate shoulders on both sides.

Along with the selected routes, the map will need to illustrate features along the walking route that walkers need to pay attention to, such as:

- The school
- Entry point to school
- Crosswalks
- Traffic control devices (traffic lights, stop signs, yield signs)
- Adult and student safety patrol posts
- Other important features such as railroad tracks and crossings

Use symbols to note the features and provide a key to the symbols on a corner or the map. Figure 8 illustrates a key for a school walk route map.

If fitting all of the routes on one map makes the map too complicated, an alternative is breaking the map into sections and producing several different maps, one for each neighborhood or direction of travel.
Figure 9: School Walk Route Map

Here’s a sample of what the final school walk route map will look like at the end of Step 6. Only the directional route information is left on this map. It’s clear, simple, and should be easy to students and parents to understand. Combined with a letter to parents, (see page 46 for a sample letter) a map like this is ready to be distributed once it has been approved.
Each map should be sent home with a letter that explains the map and provides instructions on how to use it. Mention any particular features of the walk routes, such as safety patrol posts and the importance of following patrol’s instructions for crossing the street. Ask parents to review the map with their children and walk the route with them at least once, pointing out to children any potential concerns such as business driveways, alleys, railroad tracks, or other features. Include pedestrian safety rules, such as those in Chapter Three on page 15, and ask parents to review the rules with their children. The letter should direct parents to tell their children to use the same route each day. It can include a tear off signature slip for parents to sign and return to school indicating they received the map, discussed it with their children, and walked the route together. A sample letter is shown in Figure 10 on page 46, Sample Walk Route Instructions.

**Step 7: Review the Walk Route Maps**

Before sending the map and letter home with students, seek a review process to ensure the map and instructions are clear. If the routes have been developed using the partnership approach to student pedestrian safety, then include appropriate community members in the review process. At the very least, ask the local school principal, the local police department, and local traffic engineering staff to review the information. Consider including the PTA and asking a trial set of parents and students to try out the instructions and follow the route. Depending on how the walk route program is set up in the district, the routes may need to be approved by the superintendent, the school board, or their designated representative.

Incorporate review comments into the final school walk route map and instructions before continuing on to Step 8.

**Step 8: Distribute School Walk Routes to Students and Parents**

Before distributing the maps and instructions to students and parents, decide exactly what will be expected. If you’ve asked parents to return a form saying they’ve received the map, then build a system to ensure that the returned forms are received. If you’ll encourage parents to report any concerns they observe along the walk route, be sure to have a person for them to contact who will keep them updated on how the concerns are being resolved.

Distributing maps in the fall may also be a good time to remind parents of expected driving behaviors in the school zone and to tell them about...
Figure 10: Sample School Walk Route Instructions

Dear Parents:

Walking to school each day can be part of a good exercise program that keeps your child healthy, fit, and ready to learn. Children who walk to school also help minimize parking lot congestion at our school. We have developed this school walk route to encourage walking and safe pedestrian behaviors.

This school walk route map shows the route for your child to use walking to and from school each day. By following the arrows, you will be able to find the best route between your neighborhood and the school. Mark the route from your neighborhood to the school with a colored pen or crayon.

The walk route plan has been developed based on traffic patterns and traffic controls such as cross walks, traffic lights, and safety patrol posts. The route limits the number of street crossings children will make and seeks to group children together to increase their visibility and safety. Therefore, the route may not the be shortest way to school, but it is important that children follow the route, even if they have to walk a little farther to do so.

Please help your child become familiar with this route by walking it together. Teach your child to cross the street only at the locations indicated on the map. Practice good pedestrian behaviors with your child when walking the route together by following these safety rules:

- Do not cross the street alone if you’re younger than 10 years old.
- Stop at the curb before crossing the street.
- Walk, don’t run, across the street.
- Cross at corners, using traffic signals and crosswalks whenever possible.
- Look left, right and left again before crossing.
- Walk facing traffic.
- Make sure drivers see you before crossing in front of them.
- Watch out for driveways, alleys or other places where cars may have trouble seeing you.
- Wear white clothing or reflectors when walking at night.
- Cross at least 10 feet in front of a school bus.

Safety patrol members will be posted before and after school at the cross walks as indicated on the map. Remember to tell your child to follow the patrol member’s instructions.

This route will be reviewed yearly and may change as conditions along the route change. Please contact (individual school’s contact’s name) if you have any concerns regarding the walk route. Together we can work to make your child’s walk to school an enjoyable part of his or her day.

Sincerely,
Your Principal and PTA

Return to your child’s teacher:
I have received the school walk route map and discussed it with my child

Parent or guardian signature ________________________________
any school parking lot regulations the school has designed. Explain drop off and pick up locations and times, if necessary.

The *School Zone Safety Curriculum Kit and Resource Guide* produced by the Washington Traffic Safety Commission and distributed to each elementary school in fall of Fall 2001, contains the Parent’s School Zone Safety Tips handout (available in seven languages). The start of school may be a good time to use this handout or another tip sheet reminding parents to drive slowly near school and stop for students and other pedestrians crossing the street.

Whether school walk routes and instructions are sent home with students or mailed directly to student’s houses, there are many ways school administrators and teachers can help ensure students understand the importance of following the suggested route to school. Here are some ideas get you started on how best to ensure the directions are followed:

- The principal can hold a special “walk to school” day in the fall where he or she meets with students as they emerge from their neighborhoods and walks with them to school following the map.

- Teachers can help students identify the route on the map that they will take from their home to school and mark the way in a bright color on their map.

- Teachers can have each student create a map of their route to school as a project. (Even students who ride buses can participate in this activity.) Students should show they understand the suggested route to school and can develop their own set of symbols to note landmarks on their maps.

- Teachers can use the maps to launch their student pedestrian safety education unit, highlighting the reasons children must follow the route and cross the streets only at the locations specified.

**Step 9: Evaluate the Program**

After the maps have been distributed to the students and parents, the program should be evaluated to determine whether parents and students are properly using the maps. This evaluation can be conducted through direct observation, through a phone survey, or through a written feedback form, or some combination of these.
For a direct observation, station evaluators along the routes to school at both school start and end times. Have the evaluators watch the children as they walk and note whether or not the recommended routes are being used and good pedestrian safety skills practiced. Evaluators can observe how the student pedestrians interact with traffic. Record the observations and, if needed, make changes to the walk route or conduct further student and parent education.

Another practice for obtaining feedback is to conduct either a written or a phone survey. It is not necessary to question every parent and student—a sample of 10 to 25 percent should be sufficient. Written surveys could be mailed out with the maps, or sent later to the student’s homes. Questions to evaluate the program’s effectiveness might include:

- Did you receive and understand the school walk route map?
- Could you read and understand the map? If not, what was confusing?
- Were the instructions provided with the map easy to follow? Why or why not?
- Did parents and children discuss the map together and walk the route together?
- Are children using the designated route each trip to school? If not, why not?
- Do you have any concerns about the designated route? If yes, please describe them.

Be sure that the feedback obtained through your evaluations is recorded and used to create future editions of the school walking route maps.

**Step 10: Maintaining the Walk Route Program**

Developing and distributing the school walk route maps 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. Despite efforts to make the best choice for the
walk route, some routes may still present pedestrian concerns and further action must be taken to improve conditions on these walk routes.

Feedback on the maps and routes may provide further action steps that need to be taken:

- unsafe pedestrian behaviors by children may point to the need to conduct further safety education
- unsafe drivers along the walking route may point to the need to conduct parent or community outreach, or increase law enforcement activities
- lack of wide shoulders or sidewalks, fast traffic speeds, limited sight concerns may point to the need for engineering improvements.

Please see Chapter Seven, “Improving Safety on School Walk Route” for more information on actions that can be taken to improve walk route safety.

Annual Review: The designated walk routes for each school should be reviewed annually prior to opening school and sending the map home. Routes should also be reviewed whenever changes in the environment warrant it, such as changes in traffic patterns, start of road construction projects, new development, or changes to the school’s attendance boundaries.

When reviewing the walk route, be sure to conduct a field survey and note any changes on the route. Make sure crosswalks and curb paint is clean and fresh, and signs along the route are not blocked by shrubbery. Be sure weeds are not encroaching on the shoulder of the road creating a challenging walking condition. Contact your city public works department or the county planning department to correct any noted conditions.

During the annual review, be sure to check that all road signs are clean and not blocked by shrubbery. Contact your public works or county planning if needed.
Review of the status of noted concerns along the walk route. Chapter Seven outlines ways to work with the community to resolve any walk route concerns. Be sure to communicate with any parents or community members who have expressed concerns and let them know the status of what’s being done to address the problems.

Request new traffic engineering data such as traffic counts, traffic controls, sidewalk construction plans, changes to the street network, plans for new construction in the service area and make sure the walk route reflects any changes noted from these reports.

Once the review has been conducted, be sure that updated route maps are distributed to students and parents each fall as school opens to help establish safe walking patterns and habits that will hopefully carry throughout the school year.
Chapter Six
Identifying Pedestrian Safety Concerns

The process of developing and distributing walk route maps may have uncovered a few concerns about the walk route's ability to adequately serve the student pedestrian population. Ideally, all walk routes would have complete sidewalk systems where walk ways were separated from low volumes of traffic by planting strips, where adult safety patrol members managed all-way stop intersections with clearly marked crosswalks, and where all driver's were cautious, calm, and alert along the roadways. However, in reality, no school walk route is completely free from pedestrian safety concerns. The question is: When does a less than perfect environment cross the line between acceptable and unacceptable?

There is no universally accepted definition of what makes one walk route safe and the other hazardous. High speeds of traffic along a walk way does not automatically mean all children need to be bused until traffic calming measures are in place; just a low traffic volume doesn’t automatically ensure a walk route will adequately meet student pedestrian needs. Rather, it takes professional judgement examining a variety of factors that should determine when safety measures are needed and how different needs should be prioritized. With this in mind we strongly recommend two things:

• Examine all concerns that surface.
• Work collaboratively with community partners to evaluate concerns and seek solutions.
Identify Concerns

Develop a system to document and track pedestrian walk route concerns as they arise. Note any concerns discovered during walk route development. Encourage parents to report any concerns to school administrators. Ask local law enforcement agencies to keep school officials up-to-date on changing situations along the walk route, such as increased accident rate or any pedestrian collisions. Work with local city/county planners to identify new developments, road construction project, or pedestrian improvement plans along the walk routes.

In order to track walk route concerns, it would be helpful to establish contacts at individual schools as well as a contact at the school district level. School districts are given money to fund “transportation services” for students living within a one-mile radius of the school. This money can be used to provide bus service, fund crossing guards, or provide matching funds for local or state transportation projects intended to mitigate hazardous walking conditions. By providing district-wide coordination for walk route concerns, the district can prioritize funding improvements along the various schools’ walk routes.

Walking Condition Evaluation

Once concerns have been identified, it may be useful to apply a set of criteria to help evaluate the severity of the concern. Applying a consistent set of criteria may be useful to:

- Help identify concerns when asking traffic engineers for assistance.
- Discuss the problem with parents and community members.
- Discuss funding needs with elected public officials.
- Determine if bussing students is needed in the short term until other solutions can be implemented.
  Help prioritize numerous projects along multiple walk routes.

While applying the criteria will result in a way to prioritize pedestrian improvement projects, even lower priority concerns should be addressed. Remember that no set of criteria can cover all possibilities or combinations of conditions. Therefore, remain flexible in establishing criteria, adding and subtracting categories as determined by the individual situation.
**WALKING CONDITION EVALUATION**

This form evaluates conditions according to a scale where the points to the left indicate a preferred environment for walking and those points closest to the right indicate a riskier environment. Use this evaluation form to get an overall picture of the walk route’s ability to serve the student population and to help define the degree of the problem.

<table>
<thead>
<tr>
<th>Key:</th>
<th>preferred environment</th>
<th>riskier environment</th>
</tr>
</thead>
</table>

### Age of Pedestrians

- 9th to 12th grade
- 7th or 8th grade
- kindergarten to 6th grade

### Number of Students Affected

- Few students affected
- many students affected

### Distance from School

- Site further from school
- site close to school

### Posted Speed Limit

- Less than 20 m.p.h.
- 25
- 30
- 35
- 40
- 45
- more than 45 m.p.h.

### Traffic Volume (in Cars Per Hour)

- Less than 100
- 400
- 800
- 1200
- 1500
- more than 1500

### Length of Problematic Section

- .2 mile or less
- .5 miles
- .8 miles
- 1 mile or more

### Collision History In Past Three Years

- No collisions
- 1
- 2
- 3 or more collisions

### Type of Walkway

- sidewalk
- shoulder separated by curb or ditch
- shoulder adjacent to roadway
- narrow shoulder less than 2 ft. from roadway
**Evaluate Shoulder Considerations**

**Shoulder Separated from Roadway by Curb or Ditch**
- more than 8 feet from edge of roadway
- less than 4 feet from edge of roadway

**Shoulder Adjacent to Roadway**
- more than 11 feet from edge of roadway
- less than 5 feet from edge of roadway

**Narrow Shoulder (less than 2 feet wide) Adjacent to Roadway**
- For less than 350 feet
- For more than 350 feet

**Narrow Shoulder (less than 2 feet wide) WITH Bridge or Underpass**
- For less than 50 feet
- For more than 50 feet

**Crossing Considerations**

**Crossing Width**
- 2 lanes
- 3 lanes
- 4 lanes
- 4 lanes with turn lanes

**Crossing Controls**
- all way stop
- two-way stop
- traffic signal
- not controlled

**Safety Patrol Posts**
- adult patrols
- students only
- no safety patrol posts

**Natural Gaps in Traffic**
- greater than one gap per minute
- less than one gap per minute

**Stopping Sight Distance**
- clear view
- curves, obstacles block view
Railroad Crossing Consideration

**Number of Tracks**

- one
- two
- three or more

**Type of Protection**

- active protection
- crossbucks only

**Speed of Trains**

- Slower than 10 m.p.h.
- 40 m.p.h. or greater

**Number of Trains During School Commute Times**

- 0
- 1
- 2
- 3
- 4

**Driver Behaviors**

It is important to also observe and evaluate driving behaviors along the walk route. In a recent survey of Washington State elementary school principals, unsafe driving behavior tops their list of concerns. Education, enforcement and engineering solutions can be found to solve many problems along the walk route that involve unsafe drivers. Please note if any of the following driving behaviors are consistently observed along your walk routes:

- Speeding on walk route
- Speeding in school zone
- U-turns (middle of road, turning into private driveways)
- Parking too close to or on crosswalk
- Parking on shoulder when it blocks walking path
- Parking where it block sight distant at crossing points
- Failure to stop for pedestrians waiting to cross
- Vehicles encroaching on crosswalks before pedestrians are one and a half lanes away
- Inattentive driving
- School parking lot congestion
- Vehicles parking in the bus pick-up and drop-off zone
- Vehicles lined up in the street at drop-off and pick-up times

After marking each scale that applies to the section of the walk route, look to see if many of the marks fall far to the right, indicating more risk for student using this route to school. Some risks can be balanced by other more ideal conditions, for instance a crosswalk without any crossing controls can be made safer with the addition of a safety patrol post and the existence of adequate gaps in traffic. See Chapter Seven, “Implementing Improvements to School Walk Routes,” for a discussion on developing solutions to these concerns.
Once walk routes have been developed and pedestrian concerns identified and evaluated, it's time to seek appropriate solutions. Some conditions along the walk route can be addressed by low-cost solutions, while some may require long-term, more expensive resolutions.

Solutions to walk route safety concerns fall into three categories: education, enforcement, and engineering, and some of the best solutions employ all three. That is why it is so important to work on finding solutions with a broad-based community partner approach. (Please see Chapter Four, “The Partnership Approach to Student Pedestrian Safety,” for a full discussion on identifying and working with community partners.)

**Education Programs**

Teach pedestrian safety to students as part of their classroom curriculum. (Please see Chapter Three, “Elements of Student Pedestrian Safety Education,” for details.) Provide information to parents about their responsibilities to model good pedestrian behaviors. If a school has developed drop-off and pick-up areas or other parking lot or school zone procedures, make sure parents are reminded of what's expected of them. If bad driving behaviors plague the walk route, educational outreach to parents often goes a long way towards improving behaviors. Figure 11, “Solving Unsafe Driving Behaviors,” on page 58, provides an example of a low cost solution to improving safety in the school zone through an education campaign.
Figure 13
Solving Unsafe Driving Behaviors

“School Zone Safety Curriculum Kit and Resource Guide,” published by the Washington Traffic Safety Commission, recommends the following steps for dealing with unsafe drivers:

1. Size up the situation. Contact local law enforcement officer. Observe typical problem behaviors and ask for advice.

2. If many of the unsafe drivers are parents, conduct a parent education outreach. The “School Zone Safety Curriculum Kit and Resource Guide” contains, “Parents’ School Zone Safety Tips.” This master, which comes in English and six other languages, is designed to be copied and sent home to parents. It reminds them of the laws: 20 m.p.h. in a school zone, stop for pedestrians in crosswalks, stop for school buses. It can be used to launch an educational campaign.

3. Develop a plan for confronting unsafe drivers. An adult staff member could let a driver know when they have broken a rule. The adult should approach the driver (when stopped) and describe the problem: “You stopped in the crosswalk to let your child out of the car,” and the desired behavior: “Next time please let your child out in our designated drop off area. When drivers stop on or near the crosswalk it creates a hazard and makes it hard for me to safely cross the students who walk.” It is important to let drivers know when they didn’t follow the rules, whether they broke a law or just school policy. By confronting the problem driver you let other drivers know what’s not acceptable.

4. Work out an enforcement plan with a law enforcement officer. In many areas, adult patrol members or other staff members fill out a report on unsafe drivers that lists the license plate number, the car description, the day, and the time; and describes the problem behavior. If a car is speeding through the school zone and is not a part of the school community, this method may be the only way to reach the driver. The report is sent to the officer who checks that the license and vehicle description match and then sends a letter to the registered driver regarding the complaint. If the officer receives a second complaint with the same vehicle, then the officer makes personal contact with the vehicle’s owner to issue a warning.

5. Communicate with parents again. Send another letter home to parents describing the ongoing problem and letting them know what measures are being taken to solve the problem. Let them know who has been assigned to talk with unsafe drivers and that the school will be sending reports to law enforcement.

6. If these steps do not improve driver behavior, ask the district law enforcement officer to make his presence known before and after school. Consider an engineering improvement to help with the problem.
Enforcement Activities

Enforcement efforts can go a long way towards improving safety for students along the school walk routes. 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. Enforcement activities which contribute to better student pedestrian safety include:

- Enforcing parking restrictions near schools to prevent traffic jams caused by illegally parking during pick up and drop off times, ensuring that parked vehicles do not block sight lines for pedestrians or other drivers;
- Strictly enforcing speed limits along the streets near schools and in school zones;
- Enforcing Washington’s crosswalk law that requires drivers to stop and remain stopped to allow a pedestrian to cross the road in a marked or unmarked crosswalk; and
- Warning pedestrians to cross at crosswalks.

Many law enforcement jurisdictions have established neighborhood “speed watch” programs. These programs are designed to educate, remind, and warn drivers of reduced speed limits in neighborhoods or school zones. The program provides volunteers with a speed limit sign, radar gun, and a speed reader board which shows the approaching vehicle’s speed. Although not enforcement per se, these activities can be effective in reducing vehicle speeds through school zones and demonstrate another way to build community partnerships.

The City of Lacey Police Department practices community policing—sending the same officer to answer questions and provide enforcement at the same schools each time. Here, Traffic Officer Don Arnold provides school safety patrol training to new recruit Andrew Baldwin.
Engineering Solutions

A variety of street design techniques can reduce traffic volumes, decrease speed, and improve safety. Some engineering solutions, moreover, don’t require large expenditures, such as posting signs, re-timing lights, or re-painting crosswalks and bike lanes. While new engineering techniques for improving pedestrian safety are continually being developed, the following list provides some examples of techniques that can be used.

Traffic Calming: Measures designed to reduce traffic volume and speed through a neighborhood area are generally called traffic calming measures. These steps can include curb extension, roundabouts, curb radius reductions, modified intersections, refuge islands, full medians, narrowing the width of the road, or many other measures. The idea with traffic calming is to take a holistic approach to the entire area, not just to move traffic off one street only to impact a different street.

Speed Humps or Tables: Unlike their predecessor the speed bump, humps and tables are parabolic or trapezoidal in shape, longer, not so noisy, and easier on cars. Speed tables, when used as a raised crosswalk, bring the crossing up to the level of the sidewalk, slowing traffic and increasing pedestrian’s visibility.

Barriers: Traffic diverters, medians, islands, and other barriers can discourage or eliminate through traffic on selected streets along a designated school walk route.

Crossing treatments: Curb extensions, high visibility markings, enhanced signing, traffic signals, in-pavement pedestrian activated flashing lights, and angled crossings are examples of crossing treatments that could improve pedestrian safety at some crosswalks.

This partial list of possible engineering improvements is provided only to give an idea of what type of treatments might be available to address a particular concern. A traffic engineer can discuss what treatments would provide the best solution and be the most cost effective.

Listed below are a few guidelines to consider when implementing engineering improvements:

- No physical improvements or operational measures should be initiated without the appropriate level of review, engineering study, and/or justification by the local public works agency.
- Actions taken must meet all applicable laws and standards.
- Selected actions should address specific pedestrian safety concerns in a safe and cost-effective manner.
School districts must provide support through financial commitments and by providing adult crossing guards where appropriate for safety.

**An Example:**
**City of Bellevue’s School Crosswalk Enhancement Project**

The City of Bellevue’s School Crosswalk Enhancement Project provides an example of how education, enforcement, and engineering solutions can improve safety in a school zone. In a two-year project, the city worked with schools to identify traffic concerns. The first year of the project focused on changing driver behaviors through education programs, enforcement activity, signing, and pavement marking. In the second year, physical engineering improvements were installed if the problem behaviors had not improved. At Somerset Elementary and Bennett Elementary the city installed raised crosswalks, curb extensions, and bollards. At both schools there was a history of drivers speeding through the school zone and parking on or near the crosswalks. The raised crosswalk acts like a gentle, smooth speed bump to reduce vehicle speeds and to make students more visible as they cross. Curb extensions, or curb bulbs, bring a semicircle of sidewalk out into the crosswalk. This shortens the pedestrians’ crossing distance and eliminates parking on or near the crosswalk providing an unobstructed view for the pedestrians. The bollards (three foot posts) are positioned back from the edge of the curb extensions to keep pedestrians a safe distance back from the road. Plaques were installed on the bollards with tips on how to safely cross the street. These improvements reduced average speed through the school zone and eliminated parking near the crosswalks, making a safer pedestrian environment.

**Five Steps to Develop and Implement Pedestrian Improvements**

School administrators can use the following five steps to develop and implement pedestrian safety improvements along school walk routes. Please modify and assign responsibility for overseeing this process as fits your district and situation.
1. Identify safety concerns along the school walk routes.

2. Work with community partners to identify possible solutions and prioritize issues.

3. Divide concerns into categories: long-term project, short-term project, project already in-progress, and “no action” location.

4. Assign responsibilities and timelines

5. Seek public support for solutions and funding

**Step 1: Identify safety concerns along the school walk routes.**

Chapter Six, “Identifying Pedestrian Safety Concerns,” provides methods for identifying and evaluating pedestrian safety concerns along the school walk route. As concerns are gathered, develop a list of the location and type of each one. Use the school walk route maps to indicate each location in question. If there are many locations, it may be helpful to develop a numbering system to identify each location. Document the location, description and extent of the concern, number and grades of children affected, and any special considerations.

**Step 2: Work with community partners to identify possible solutions and prioritize issues.**

Gather representatives from city public works, county planning, and/or state department of transportation (depending of who maintains the road in question) as well as representatives from local law enforcement agencies, school administrators, and parents (especially any who have expressed concerns about pedestrian safety issues). There may be other public agencies who are responsible for sections of the roadway along the walk route such as: parks department, cemetery district, port district, fire district, drainage district, utility division, Department of Natural Resources, Forest Service. Even private owners of easements such as power company, water company, neighborhood associations, or railroads could be affected by pedestrian improvement along school walk routes. Be sure to have representation from what entities could be affected by plans. Hopefully, your community partners have been involved with student pedestrian and trip safety plans from the beginning.

Together go over the concerns. Discuss possible education, enforcement and engineering solutions. Some solutions may be immediately obvious, such as developing a parking lot flow plan, educating parents about expected driving behaviors, or providing greater visibility enforcement. Others may
require further studies be conducted.

Seek to implement the easy fixes, such as directing students to take a different route (not likely if walk route was designed recently and updated yearly), adding adult safety patrol posts, or sending information home to parents.

Decided who will study solutions to the more complex problems and set a timeline for these solutions to be presented.

**Step 3: Develop a plan**

As possible solutions surface, develop a plan that prioritizes and categorizes the solutions. Consider dividing the concerns into categories: long-term project, short-term project, project already in-progress, and “no action” location.

**Long-term projects:** Engineering solutions to pedestrian safety concerns sometimes involve projects that will take a long time to implement and will require funding sources. Therefore, the concerns that require such long-term solutions need to be clearly prioritized by the school district to reflect their priorities, available funding, and local political considerations.

**Short-term projects:** Low cost, immediate actions projects can be identified and implemented quickly to improve pedestrian safety. These types of projects can include:

- Developing a system to confront dangerous driving behaviors (See Figure 11: Solving Unsafe Driver Behaviors, on page 58).
- Enforcement emphasis patrols by local law enforcement officers coupled with notes home to parents informing them of increased enforcement efforts.
- Shoulder repair or widening with local maintenance crews.
- Signs, pavement marking, fresh paint.
- Creating safety patrol posts. (Note: any new locations for safety patrol posts should be evaluated for adequate lines of sight and, if uncontrolled by traffic light or stop signs, for adequate traffic gaps.)

**Projects already in-progress:** Public works representatives can identify locations where planned pedestrian or roadway improvement projects will affect the pedestrian concern being discussed. The jurisdiction’s Six-Year Transportation Program (TIP) is a good source for such information. If such a
case exists, the proposed roadway improvement project can be reviewed to see if a minor modification is needed to remedy the pedestrian safety concern at little to no additional cost.

If it will take several years before the planned project will be implemented, the need for any interim remedial actions should be discussed.

**No Action Locations:** Some rare pedestrian safety concerns are unavoidable or are not correctable by education, enforcement or traffic engineering solutions. These could include:

- Walking along high speed, high volume roadways
- Walking along too narrow or non-existent shoulders where building adequate shoulders is infeasible, impractical, or cost-prohibitive.
- Railroad tracks with a high number of trains that effect only a limited number of students.

Sometimes engineering solutions are not financially feasible in the next six years (per the jurisdiction’s planning cycle). When many different locations are being addressed, it may be helpful to concentrate on those where solutions are practical and assign these difficult locations to the “no action” category for the time being. As other concerns are addressed, revisit the locations in this category periodically to see if new funding sources have become available or if new engineering solutions have been developed. In the near term, discuss if such situations require students be bussed.

**Step 4: Assign responsibilities and timelines**

As the plan for improving student pedestrian safety begins to take form, it will probably be obvious who will be responsible for which parts. Be sure to decide how progress will be communicated.

Actions which require a financial commitment by the school district could include:

- funding flashing beacons, or other small engineering improvements
- providing a local matching share for federal or state grants, or
- providing paid adult crossing guards.

Such actions will probably require action and approval by the superintendent or the school board. Make sure they have been kept informed of plans and had a chance to provide input on the prioritized list of improvements and that their priorities are reflected in the list.
**Step 5: Publicize and seek support for solutions and funding**

Public input on proposed solutions to pedestrian safety concerns is an important step to continue the cooperative effort among the school and local agencies. For grants using federal funds, there are often specific requirements for public involvement during the project development. Community comments would be especially useful for capital improvements such as new sidewalks or pedestrian overpasses—which benefit the entire community, not just school children. In addition, local elected officials usually give preference for funding projects with broad, visible community support. Plan to publicize proposed solutions to the community and seek their input. Be sure to contact public elected officials, seek their support for the project and keep them informed as the project progresses.

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 are 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 injuries, lower medical and health care costs, and lower insurance premiums for community members.

Funding consideration 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.

Considering the rapidity of change in transportation funding, explore as many options as possible for tapping a variety of sources, such as Washington State Department of Transportation grant programs, Washington Traffic Safety Commission, County Road Administration Boards, Transportation Improvement Boards, metropolitan planning organizations, and local health and safety organizations. (Please refer to Appendix A, “Ideas and Resources for Student Pedestrian Safety,” for a list of potential funding resources.)

School districts receive funding from the state based on the number of kindergarten through fifth grade students in the district living within a one-mile radius of their school. These funds can be spent by the district for additional buses, for crossing guards, or as matching funds for local and state transportation projects intended to improve pedestrian safety.
Appendix A
Ideas and Resources for Student Pedestrian Safety

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.
- A catalog of materials developed by HIPRC is available.
- Materials available at no charge or cost of production and distribution. A catalog of materials is available.

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

- Grants available to Washington schools to develop pedestrian safety programs.
- Pedestrian program materials such as brochures, video, fact sheets, and promotional items at http://www.wa.gov/wtsc.
- 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) 789-2306

- 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 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.

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

- 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.
- Safe Routes to School/Safe Streets Toolkit download available.

Office of Superintendent of Public Instruction
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 audiovisual materials Monday-Friday 9am to 5pm.
• http://www.bikewalk.org

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 a child’s developmental level.

Walkable Communities, Inc.
320 South Main Street
High Springs, FL 32643
386-454-3304 or 386-454-3306 FAX
www.walkable.org

• A variety of publications on walking, traffic calming, and crossings available as downloads.

Partnership for a Walkable America, National Safety Council
1121 Spring Lake Drive
Itasca, IL 60143-3201
(630) 285-1121 or (630) 285-1315 FAX
www.nsc.org/walkable.htm

• Walk Our Children to School Day Information
• Walkable America Checklist

Puget Sound Regional Pedestrian Safety Coalition
Meets Quarterly at the Washington Traffic Safety Commission
(360) 664-8426, (360) 586-6489 fax

• Groups interested in traffic and pedestrian safety meet quarterly to share resources.
• Publishes the Relative Risks of School Travel: A National Perspective and Guidance for Local Community Risk Assessment.

School Bus Information Council
(888) FOR-SBIC or (888) 367-7242
http://schoolbusinfo.org/

• School Bus Information Reports
• Key Safety Equipment Requirements
• School Bus Facts

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
Appendix B
Practical Tips for Opening a New School

The Beginning

1. Give preference to sites that are easily connected to existing pedestrian systems.

2. Notify appropriate governmental agencies at the very beginning of the school planning process that walkways will need to be developed.

3. Work with school planners to develop building access from yet-to-be-developed walkways and sidewalks, keeping in mind pedestrian safety. Look for ways to separate bus zone locations from other vehicle traffic. Consider pick-up and drop-off zones that won’t interfere with traffic flow and will allow children to exit onto a sidewalk or pathway.

4. Meet with your community partners (schools, local government jurisdictions, local law enforcement agencies, parents, and others). Discuss student pedestrian safety needs and concerns. Brainstorm innovative ways to ensure pedestrian and walk route safety. Consider alternative pathways such as from an apartment building to a back entrance at the school. Discuss signing, signals, safety patrol posts, lighting, and sources for funding. Outline needed education, enforcement and engineering improvements initiatives.

5. Prioritize and set time lines for goals that result from meeting with community partners.

6. Develop school walk routes.

Spring before School is Opened

1. Meet with new school parent group to discuss the walking plan for the school. Include community partners in meeting.

2. School officials and parents can field test the walk routes, walking from the school to neighborhoods and noting any concerns.

3. Publish and distribute walking route information in letters home, newsletters or local newspaper. Collect any concerns and work
to mitigate them.

4. Discuss school walk routes, safety patrol membership, and other pedestrian safety issues at any “open houses” held prior to school starting.

When School Opens

1. Distribute school walk route maps to students and parents.

2. Continue working with community partners to implement improvements.

3. Review pedestrian safety programs yearly.
Retrofitting Local Streets with Pedestrian & Bicycle Facilities
Appendix D

The Problem of Adding Sidewalks Along Bonney Lake Local Streets

Bonney Lake has seen rapid growth and a transformation from a more rural to urban residential area. Many of Bonney Lake’s roads were constructed prior to the City’s adoption of urban street standards, and hence lack sidewalk facilities. Until the last 5-8 years, many of the new sidewalks constructed in the city have been limited to one side of the street.

The photos on these next two pages illustrate the current conditions along many collector and local, or residential, streets in Bonney Lake: lacking sidewalk facilities altogether, or sidewalks with curb and gutter facilities along one side of the street only.

Problematic today is how to provide new pedestrian facilities along City streets which are seeing much higher traffic volume. City streets with sidewalks along one side are accommodating two-way pedestrian and bicycle travel.

In early discussions of the Bonney Lake Non-Motorized Plan effort with the City Council, there was expressed interest to identify lower-cost pedestrian improvements along local streets which are currently absent of sidewalk facilities. One suggestion was to construct asphalt paths adjacent to and along one side of local streets rather than a sidewalk with curb and gutter. The desire was to provide a safer walking space, especially for student pedestrians, at a lower cost in the interim until such time as a full, urban street cross-section could be constructed (complete with curb, gutter and sidewalk on both sides of the street). In a broader and more technical context, these asphalt paths are considered “sidepaths.”

A General Definition of “Sidepaths”

In general, these one-sided pedestrian pathway facilities are considered “sidepaths” and are likely to attract two-way, pedestrian and bicycle travel, regardless of their width.

Sidepaths are typically built parallel to roadways in the usual location for sidewalks, but differ from sidewalks in that they are 10-foot-wide, designed for shared use, and require a barrier or five-foot or greater separation from the roadway. They are called “sidepaths” because local laws often prohibit bicycle use on “sidewalks”, and they are proliferating because the right-of-way is in public ownership.

Sidepaths are a design not covered in the AASHTO Pedestrian Guide, which
is used by many cities and counties as the base design guideline and policy for pedestrian facilities.

**Liability Aspects of Sidepaths**

As “sidepaths” are used by both pedestrians and cyclists, perhaps the best summary regarding liability was prepared by bicycle design and planning experts. The paper *Liability Aspects of Bicycle Environments: Bicycle Facilities and Roads*, by three notable experts on bicycle transportation, Alex Sorton, P.E., Tom Walsh, P.E. and John Williams was presented at the Institute of Traffic Engineers 1990 Annual Meeting and specifically recommends against sidewalks and sidepaths as bicycle facilities. Here are extracts from that paper:

_A commuter bicyclist was riding on a designated bikeway. This bikeway had been created on the curbside half of an existing 10-foot sidewalk. Signs and markings were used to designate the facility and parking was allowed adjacent to the curb. A driver, while making a right turn into an alley, failed to see a bicyclist on the bikeway, primarily because a parked vehicle blocked the view, and ran over him. The bicyclist was severely injured._

_The bicyclist sued the operating agency claiming negligent design. He pointed out that the AASHTO Guide strongly suggests not placing bikeways on a sidewalk adjacent to a street because of the sight obstruction created by parked cars._

Special pedestrian and bicycle accommodations should always reflect current guidelines and sound judgment. Some states, including Washington, have established their own design guidelines, which should be used where applicable. The courts and practitioners have often recognized the 1999 AASHTO Guide and the Manual on Uniform Traffic Control Devices (MUTCD) as guiding design policy. Adherence to these sources can help the City avoid possible future judgments.

**AASHTO Guide Highlights**

The AASHTO Guide is easily summarized by the following two recommendations:

- Don't put two-way bikeways on one side of a street. Such facilities cause serious conflicts at intersections and driveways. Two-way bike lane use has led to a number of fatal head-on collisions. And such facilities encourage wrong-way riding.

- Don't designate sidewalk bikeways.

**State of Washington Policy**

What does the State of Washington say regarding sidepaths? The following section summarizes relevant sections of the WSDOT Pedestrian Facilities Guide (1997) and Design Manual.

The WSDOT Pedestrian Facilities Guide provides guidelines for trails and pathways, with specific discussion on multi-use facilities next to roadways. An overriding recommendation with respect to designing such facilities includes:

When trails and pathways must be shared by pedestrians and bicyclists, they need to be designed in accordance with applicable standards (refer to WSDOT and AASHTO design requirements).

The following section cites the specific WSDOT design guide discussion for multi-use pathways next to roadways.

Multi-Use Trails and Pathways Next to Roadways

Multi-use two-way trails and pathways aligned along a street do not typically function well due to problems related to bicycle use. For example, on a multi-use two-way pathway, some of the bicyclists will be traveling against the normal flow of motor vehicle traffic, which is contrary to the rules of the road.

Conflicts at intersections and driveways are a major concern on pathways adjacent to roadways. Motorists will often not notice bicyclists coming toward them on the right, since they do not expect to see them traveling against the flow of traffic. Additional problems are listed in the AASHTO Guide for the Development of Bicycle Facilities.

The feasibility of developing a multi-use pedestrian and bicycle pathway within the right-of-way and adjacent to a roadway should be carefully considered. The following conditions should exist before determining that a multi-use pathway within the right-of-way is necessary:

- The pathway can be separated from motor vehicle traffic. Minimum horizontal separation of 5 feet is required by AASHTO standards.
- Development of bike lanes and sidewalks as an alternative to the multi-use pathway.
would not be a feasible alternative. (Bike lanes and sidewalks typically take up less space than multi-use pathways within the right-of-way and allow bicyclists to travel with the normal flow of traffic.)

- There are no reasonable alternative alignments for bikeways and sidewalks on nearby parallel routes.

- There is a commitment to provide a continuous non-motorized system throughout the corridor.

- Bicycle and pedestrian use is anticipated to be high.

- The pathway can be terminated onto streets with good bicycle and pedestrian facilities, or onto another safe, well designed pathway at each end.

- Potential driveway and intersection conflicts can be minimized or mitigated.

- There are popular origins and destinations throughout the corridor (schools, parks, and neighborhoods).

- The pathway can be constructed wide enough to accommodate all types of users, with delineation and separation techniques to minimize conflicts between users — 12 feet desirable, 14 feet optimum.

When there is no feasible alternative to locating a two-way multi-use pathway within the roadway right-of-way, adequate separation is required. The wider the separation dimension is, the better. A minimum separation of 5 feet is required by AASHTO. Recommendations for separation treatments are provided (below).

- 5-foot minimum width

- Landscaped or natural vegetation to provide buffer from noise and splash of vehicles and/or

- Drainage ditch or swale with maximum 1:3 side slopes at edge of 2-foot wide shoulder

- If less than 5 feet, a concrete barrier divider, wall and/or railing a minimum of 4 ½-feet high as required by AASHTO.

**B. WSDOT Design Manual**

**PEDESTRIAN FACILITIES**

Chapter 1025 of the WSDOT Design Manual defines shared-use paths as follows:
Shared-Use Paths are used by pedestrians and bicyclists. Pedestrian facilities differ from bicycle facilities in their design requirements and goals and they are not always compatible. A busy sidewalk might not be safe for bicycle travel and a well-used bike path might not be suitable as a pedestrian walkway. When a shared use path is determined to be in the best interests of both groups, see Chapter 102, “Bicycle Facilities,” regarding shared use paths.

Chapter 102 (Bicycle Facilities) of the WSDOT Design Manual has more to say about shared-use paths:

BICYCLE FACILITIES

Chapter 1020 of the WSDOT Design Manual categorizes bicyclists as follows:

**Category A**
Advanced or experienced riders who are generally using their bicycles as they would a motor vehicle. They want direct access to destinations with a minimum of delay and are comfortable riding with motor vehicle traffic. When touring, their vehicles are commonly heavily loaded with a tandem rider(s), children, or camping gear. They need sufficient operating space on the traveled way or shoulder to eliminate the need for them or passing vehicles to shift position.

**Category B**
Basic or less confident adult bicyclists who might be using their bicycles for transportation purposes. They prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width. Basic bicyclists are comfortable riding on neighborhood streets and shared use paths; however, on busier streets, they prefer designated facilities such as bike lanes or wide shoulder lanes.

**Category C**
Children, riding alone or with their parents, who need access to key destinations in the community such as schools, friends, recreational facilities, and convenience stores. Residential streets with low motor vehicle speeds (linked with shared use paths and busier streets with well-defined pavement marking between bicycles and motor vehicles) can accommodate children without encouraging them to ride in the traveled lane of major arterials.

**Selection of the Type of (Bicycle) Facility**

Chapter 1020 of the WSDOT Design Manual defines the various bicycle facilities as summarized in this section.

In selecting an appropriate facility, ensure that the proposed facility will not encourage or require bicyclists or motorists to operate in a manner that is inconsistent with the Rules of the Road (RCW 46.61). An important consideration is route continuity. Alternating bikeways from side to side along a route is generally unacceptable. Designing a route that requires bicyclists to cross the roadway could result in inappropriate maneuvers and/or encourage Rules of the Road violations. In addition, wrong-way bicycle travel might occur
beyond the ends of shared use paths because of the inconvenience of having to cross the street.

Many factors are involved in determining which type of facility will benefit the greatest number of bicyclists. Outlined below are the most common applications for each type.

**Shared Use Path**
The most common applications for shared use paths are along rivers and streams, ocean beachfronts, canals, utility rights of way, and abandoned railroad rights of way; within college campuses; and within and between parks. There might also be situations where such facilities can be provided as part of planned developments. Another common application of shared use paths is to close gaps in bicycle travel caused by construction of freeways, or the existence of natural barriers (rivers, mountains, and other large geographic features). Generally, shared use paths are used to serve corridors not served by streets and highways or where wide rights of way exist permitting such facilities to be constructed away from the influence of parallel roadways. Shared use paths offer opportunities not provided by the road system. They can either provide a recreational opportunity or serve to minimize motor vehicle interference by providing direct high-speed bicycle commute routes.

**Bike Lane**
Bike lanes are established along streets in corridors where there is or, in the future, might be significant bicycle demand. Bike lanes delineate the rights of way assigned to bicyclists and motorists and provide for movements that are more predictable by each. An important reason for establishing bike lanes is to better accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. This can be accomplished by reducing the number of lanes or prohibiting parking in order to delineate bike lanes. Where street improvements are not possible, improve the bicyclist’s environment by providing shoulder sweeping programs and special signal
facilities. When considering the selection of appropriate streets for bike lanes, refer to the location criteria discussed in 1020.04(4).

Do not designate sidewalks as bike lanes.

**Shared Roadway**

Most bicycle travel in Washington occurs on highways and streets without bikeway designations. In most instances, entire street systems are fully adequate for safe and efficient bicycle travel and signing and pavement markings for bicycle use are unnecessary. The region’s Traffic (sections/engineers) are responsible for determining sections of state highways where bicycle traffic is inappropriate. The State Traffic Engineer, after consultation with the Bicycle Advisory Committee, prohibits bicycling on sections of state highways through the traffic regulation process. Also, see Chapter 1420 “Access Control Design Policy”. Bicyclists traveling between cities, or on recreational trips, may use many rural highways. In most cases, rural highways are not designated as bike routes because of the limited use and the lack of continuity with other bike routes. However, the development and maintenance of paved shoulders, with or without a standard edge stripe, can significantly improve safety and convenience for bicyclists and motorists along such routes.

In general, do not designate sidewalks as bikeways for the following reasons:

- Sidewalks tend to be used in both directions, despite any signing to the contrary.
- At approaches to intersections, parked cars might impede sight distance of motorists and bicyclists. At driveways, property fences, shrubs, and other obstructions often impair sight distances.
- At intersections, motorists are not looking for bicyclists entering the crosswalk area, particularly when motorists are making a turn.
- Sidewalks are typically designed for pedestrian speeds, and might not be safe for higher-speed use. Conflicts between bicyclists and pedestrians are common, as are conflicts with fixed objects such as parking meters, utility poles, signposts, bus shelters, benches, trees, hydrants, and mailboxes. In addition, bicyclists riding on the curb side of sidewalks might accidentally drop off the sidewalk into the path of motor vehicle traffic.

Only consider a sidewalk as a bike route under special circumstances, such as on long, narrow bridges. Even then, the preferred solution is to widen the roadway to provide space for bicyclists.
In residential areas, sidewalk riding is commonly done by Category B and C bicyclists who are not comfortable riding in the street. However, it is inappropriate to sign these facilities as bike routes.

As further context, the proximity of two-way, shared-use paths (or sidepaths) to adjacent streets can cause several operational problems. The following section is excerpted from the Florida Department of Transportation Bicycle Design Guideline (1999):

- Unless shared use paths are paired, they require one direction of bicycle traffic to ride against motor vehicle traffic, contrary to normal rules of the road. This movement greatly increases certain types of bicycle crashes. The designer is often left with complex placement issues. Should the facility be placed close to the highway creating turning/merge conflicts at the intersection? Should it be placed at the back of the right-of-way, increasing detection problems at each driveway and intersection? Shrubs, other vegetation and fencing can hide the bicyclist from the motorist.

- When the path ends, bicyclists going against traffic will tend to continue to travel on the wrong side of the street. Likewise, bicyclists approaching a path often travel on the wrong side of the street to get to the path. Wrong-way travel by bicyclists is a major cause of bicycle/automobile crashes and should be discouraged at every opportunity.

- At intersections, motorists entering or crossing the roadway often will not notice bicyclists coming from the right, as they are not expecting or looking for contra-flow vehicles. Even bicyclists coming from the left (the expected direction) often go unnoticed, especially when sight distances are poor.

- Bicyclists using the roadway are often subjected to harassment by motorists who feel that, in all cases, bicyclists should be on the trail instead. Many bicyclists will use the roadway instead of the shared use path because they have found the roadway to be safer, less congested, more convenient, or better maintained.

- Bicyclists using shared use paths generally are required to stop or yield at all cross streets and driveways. Whereas, bicyclists using the roadway usually have priority over cross traffic, because they have the same right of way as motorists. This treatment is unfair to trail users and may be contrary to the Manual on Uniform Traffic Control Devices. In some cases, shared use paths may have such heavy volumes the cross street should be required to yield.

**Sidewalk Bike Paths Often Fail.**

1. Each driveway can be a conflict to bicyclists. Half of all riders come against traffic. Where does the designer place the facility laterally? Too close to the road and there are serious operational problems. The motorist blocks the path, and some bicyclists are inclined to go to the front. Too far back the turning motorist picks up speed and fails to notice the crossing. This motorist lost in court when the bicyclist was injured while going in front.
• Stopped cross street motor vehicle traffic or vehicles exiting side streets or driveways may block the path crossing.
• Because of the proximity of motor vehicle traffic to opposing bicycle traffic, barriers are often necessary. They keep motor vehicles separated from shared use paths and bicyclists from traffic lanes. These barriers can represent obstructions to bicyclists and motorists. They can complicate maintenance of facilities and cause other problems as well.
• Many bicyclists’ destinations may be on the opposite side of the street from where the bicycle path is located. This is a common situation when shared use paths are built along railway corridors or canals. In this case, the bicyclists’ desire to access these destinations must be addressed.

Using sidewalks as pathways further increases the hazards. Providing a sidewalk shared use path is unsatisfactory for a variety of reasons:
• Sidewalks are typically designed for pedestrian speeds and maneuverability.
• They are not safe for higher speed bicycle use.
• Conflicts are common between pedestrians and bicyclists. Pedestrians exiting stores or parked cars may surprise bicyclists.
• Conflicts with fixed objects (e.g., parking meters, utility poles, sign posts, bus benches, trees, fire hydrants, mail boxes, etc.) are also common.
• Walkers, joggers, skateboarders, in-line skaters and roller skaters can, and often do, change their speed and direction almost instantaneously, leaving bicyclists insufficient time to react to avoid collisions.
• Pedestrians often have difficulty predicting the direction an oncoming bicyclist will take.
• At intersections, motorists are not often looking for bicyclists (who are traveling at higher speeds than pedestrians) entering the crosswalk area, particularly when motorists are making a turn. Sight distance is often impaired by buildings, walls, property fences and shrubs along sidewalks, especially at driveways.

Sources and Further Reading

AASHTO *Guide to the Development of Pedestrian Facilities*, 2000. AASHTO. (currently under discussion)


Implementing Bicycle Improvements at the Local Level, (1998), FHWA, HSR 20, 6300 Georgetown Pike, McLean, VA.

*Implementing Pedestrian Improvements at the Local Level, 1999. FHWA, HSR 20, 6300 Georgetown Pike, McLean, VA.


Pedestrian Compatible Roadways-Planning and Design Guidelines, 1995. Bicycle / Pedestrian Transportation Master Plan, Bicycle and Pedestrian Advocate, New Jersey Department of Transportation, 1035 Parkway Avenue, Trenton, NJ 08625, Phone: (609) 530-4578.


Selecting Roadway Design Treatments to Accommodate Bicyclists, 1993. FHWA, R&T Report Center, 9701 Philadelphia Ct, Unit Q; Lanham, MD 20706. (301) 577-1421 (fax only)
Pierce Transit Bus Stop Design Manual (excerpt)
Pole Placement
On Street Parking

Bus zone locations are dictated by road conditions and parking arrangements.

In general, Pierce Transit prefers not to use pullouts unless required by law or jurisdiction. Generally speaking, it takes more time to serve a pullout than by staying in the lane of travel. The bus may get trapped as cars queue at a traffic signal and fail to yield to the bus as it attempts to re-enter traffic.
On Street Parking - continued

Location Guidelines & Pullout Characteristics

- for articulated buses, add 20'
- a larger radius is recommended for stops immediately after a right hand turn
- for articulated buses, add 20'
- a larger radius is recommended for stops immediately after a right hand turn

Pierce Transit Bus Stop Manual: July 2005
A2.2
Curb Bulbs

Note: Measurements may vary from site to site. Values shown are typical. Turning radii, lane widths, and stop distances must be field checked, using a bus, prior to final design.

Far side

Parking lane type:

Near side
* for articulated buses, add 20'
** 10 foot minimum, prefer 12'

SUGGESTED ENTRANCE TAPER 5:1,
ACCELERATION TAPER NOT GREATER THAN 3:1.
Pullout Dimension Details

Notes:

1. Stopping area length consists of 50 feet for each standard 40-foot bus and 70 feet for each 60-foot articulated bus expected to be at the stop simultaneously.
2. Pullout width is 12 feet preferred. These dimensions do not include gutter width.
3. Suggested taper lengths are listed in the table below. Desirable taper length is equal to the major road through speed multiplied by the width of the pullout. A taper of 5:1 is a desirable minimum for an entrance taper to an arterial street bus pullout while the merging or re-entry taper should not be sharper than 3:1.
4. Minimum design for a busy pullout does not include acceleration or deceleration lanes. Recommended acceleration and deceleration lengths are listed in the table below.

<table>
<thead>
<tr>
<th>Through Speed (mph)</th>
<th>Entering Speed* (mph)</th>
<th>Length of Acceleration lane (feet)</th>
<th>Length of Deceleration Lane** (feet)</th>
<th>Length of Taper (feet)</th>
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<td>60</td>
<td>50</td>
<td>1900</td>
<td>595</td>
<td>250</td>
</tr>
</tbody>
</table>

* Bus speed at end of taper, desirable for buses to be within 10 mph of travel lane vehicle speed at the end of the taper.
** Based on 2.5 mph/sec deceleration rate.
Non-Motorized Transportation Plan

Draft NMTP Review Comments

Appendix F

JULY 2007

Prepared by:
The Transpo Group
February 6, 2007

Mr. Stephen Ladd
Planning Manager/Responsible Official
Planning and Community Development
City of Bonney Lake
PO Box 7380
Bonney Lake, WA 98390-0944

Dear Mr. Ladd:

Thank you for the opportunity to comment on the determination of nonsignificance for the City of Bonney Lake’s Proposed Adoption of a Non-Motorized Transportation Plan located. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

**SHORELANDS/WETLANDS: Sarah Lukas (360) 407-7459**

Based on the information provided in the checklist, this proposal has the potential to make a substantial positive environmental impact on the Bonney Lake community. Ecology would like to encourage the City of Bonney Lake to design this proposal by trying to avoid as many environmentally sensitive areas as possible. If the City of Bonney Lake would like assistance in mitigation for unavoidable impacts please feel free to contact us.

Ecology’s comments are based upon the information provided with the SEPA checklist. As such, they do not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(AW: 07-0535)

cc: Sarah Lukas, SEA
    John Woodcock, City of Bonney Lake (Contact/Applicant)
February 7, 2007

Stephen Ladd
Planning Manager
City of Bonney Lake
PO Box 7380
Bonney Lake, WA 98390-0944


Dear Mr. Ladd:

Thank you for allowing the Washington State Department of Transportation (WSDOT) the opportunity to comment on the Bonney Lake Non-Motorized Transportation Plan. We appreciate the time and energy that this document represents. We request that the following comments be made part of the official record on this Non-Motorized Transportation Plan.

Page 4-5, Figure 4-2:
Although bike lanes are permissible adjacent to on-street parking, it is suggested that the travel lane speed limit be set no higher than 25 mph to further increase the safety of bicyclists.

Page 4-6, B. *Shared-Use Path*, 2nd Paragraph:
Reference the first sentence, “Shared-use paths primarily attract recreational users.” Our recommendation would be to not use this language as it may prohibit the use of transportation funding for shared-use paths contained within roadway projects.

As to shared use path maintenance, WSDOT suggests that consideration be given in using citizen’s adopt a trail concept for low impact maintenance activities on separated trails.

Page 4-11 *Bicycle Lane*:
Consider five feet widths for placement of bike lanes adjacent to curb and gutters. Gutter section consumes the better part of one foot, thus reducing the usable four feet bike lane to 3 feet.

Page 5-16, bullet 11, Mid-Block Crossings:
WSDOT has experienced limited success in establishing mid-block crossing facilities on multi-lane roadways such as SR 410. Actions associated to closing private driveway access at mid-block crossings have presented a substantial hindrance to accommodating crossings.
Mr. Stephen Ladd  
February 7, 2007  
Page 2

Page 6-2, B Public Pedestrian & Bicycle Systems Development, 1. State Highways:  
Within the SR 410 corridor, in the vicinity of Angeline Road and given the current  
roadway cross-section with centerline barrier, WSDOT is cognizant that the section  
does not accommodate pedestrians to the fullest extent with sidewalks. WSDOT  
does not anticipate improving this section of the corridor in the near future. WSDOT  
is not likely to be altogether supportive of an unbalanced design with pedestrian  
accommodations on only one side of the roadway unless the design fully takes into  
account the need for crossings. The pedestrian crossings should not overly impact  
the SR 410 mainline capacity throughput.

For the near term, wide shoulders along SR 410 will provide bike-pedestrian  
accommodations. Sidewalks may be considered with future improvements. For bike  
facilities along SR 410, the WSDOT design manual standards will apply.

WSDOT encourages the city to capitalize on adjacent development to fully  
participate in the establishment of non-motorized facilities and connections whether  
located adjacent to SR 410 or not. WSDOT also suggests that the City of Bonney  
Lake give further emphasis on the transit aspect of the plan. Once a rider dismounts  
the bus, they then become a non-motorized user, at times without adequate bike-  
pedestrian accommodations.

Again, thank you for the opportunity to review and comment on this document. If  
you have any questions related to this letter, please contact T.J. Nedrow of my staff  
at (360) 357-2728.

Sincerely,

Robert Jones  
Transportation Planning Manager  
WSDOT, Olympic Region

REJ:ps  
DM

cc:  Bill Wiebe (WSDOT)  47370  
     Tom Washington (WSDOT)  TB55-130  
     David Anderson (CTED)  48350
February 14, 2007

Stephen Ladd, Planning Manager
Department of Planning & Community Development
City of Bonney Lake
PO Box 7348
Bonney Lake WA 98390-0944

Dear Mr. Ladd:

RE: NON-MOTORIZED TRANSPORTATION PLAN (NMTP)

Thank you for the opportunity to review the City of Bonney Lake’s Draft Non-Motorized Transportation Plan dated September 2006. This document reflects much work and dedication to the community. We appreciate your willingness to receive these comments past the scheduled due date. Pierce Transit did not receive the NMTP with our notice and we, therefore, needed additional time to complete the review.

Pierce Transit strongly supports facilities for pedestrians, those amenities aid in access to public transportation. Our agencies routinely coordinate on development reviews and we appreciate Bonney Lake’s consideration for public transportation and transit passengers within those reviews and this plan.

The plan provides local design guidelines for Bonney Lake’s pedestrian facilities. Those guidelines are referenced in the Executive Summary (pg v) and Chapter 5. Missing from those guidelines is reference to accessible bus stop zones. In our reviews of development projects and City improvements, bus stop improvements are generally coordinated. Inadequate facilities for access to transit services is a challenge for making the community more walkable, we recommend inserting these bus stop criteria within the document. An accessible bus stop zone is a minimum 5’ x 8’ boarding pad or hard surface. Typically, Pierce Transit will request a 10’ x 10’ standard bus stop pad that functions as both an accessible boarding zone and can be improved at a later date with a shelter installation. (Plans attached.)

Chapter 6 of the NMTP discusses funding for private pedestrian and bicycle system development. On pg. 6-2, Section A, we encourage the City to continue to require improvements to transit amenities within the pedestrian environment as mentioned above. Pierce Transit routinely coordinates with Bonney Lake on review of private development applications. Where bus stops are located adjacent to private development those improvements should be required as part of the development process. Section B addresses both State Highway and City Funding Needs.
Section B. 1. references potential improvements along SR-410. Please continue to coordinate with Pierce Transit during development of these plans. We have a strong working relationship with WSDOT and will want to be an active participant in plans that could impact our transit services. Also, that section lists Pierce “County” Transit in a number of places (Pgs. 6-2 and 6-3). Please delete the term “County.” We do business and are known as “Pierce Transit.”

Lastly, Section B.2., summarizes City Funding Need. Please consider contacting us as you develop grant applications for your projects. Pierce Transit can often participate by partnering on those packages. If the project is along a transit corridor our partnership can include improvements such as shelters and benches. We can also provide information on the location of bus stops and ridership information that can be used in the grant application. Often additional points can be scored for partnerships or transit participation. Also of benefit is that the value of this participation can potentially be included as local match funds.

Thank you again for the opportunity to comment on the City’s NMTP. If you have questions or would like additional information on our comments, please do not hesitate to contact me at 253-5890-6887 or tlee@piercetransit.org.

Sincerely,

Tina Lee, Senior Planner  
Capital Development & Construction Projects

Attachments:
- Bus Stop Standards - Amenities
- Concrete Foundation Pad Specifications
Memo

Date: 1 May 2007
To: TRANSPO Group
From: Public Works Director
CC: City Engineer, Planning Manager
Subj: Non Motorized Transportation Plan (NMTP) – Final Review Comments

Based on input from various agencies, City staff, Planning Commission, and elected officials, here are the final review comments:

Attached are letters with review comments from the following agencies. The issues highlighted for each agency need to be addressed in the NMTP as follows:

   a. Bike lanes adjacent to parking. Limit speed to 25 MPH.
   b. Remove the language “primarily attract recreational users” for shared use side paths.
   c. Add “Adopt A Trail Concept”
   d. Use of five foot bike lanes adjacent to curbs and gutters.
   e. On SR-410, provide crossings only at signalized intersections.
   f. SR-410 future improvements must include pedestrian facilities. These developments may or may not be adjacent to SR410.
   g. Address mass transit rider ability to use pedestrian facilities when disembarking busses.

   a. Avoid as many environmentally sensitive areas as possible.

   a. Need to address accessible bus stop zones. Insert bus stop criteria.
   b. Add appendix showing 10’x10’ bus stop pad design and shelter design provided by Pierce Transit.
   c. Require construction of bus stop pads and shelters in Chapter 6 along all collector, minor arterial, and major arterial routes when frontage development occurs.
   d. Delete term “Pierce County Transit” and use “Pierce Transit” instead.
   e. Under funding alternatives in Chapter 6, indicate “Pierce Transit” as a grant application partner.
   f. Obtain information from Pierce Transit on bus stop locations when developing City projects or reviewing development improvements.
Emphasizing-clarifying comments made by WSDOT, Pierce Transit and DOE above:

1. Require all development adding lanes to a street to provide pedestrian-bicyclist facilities in accordance with City Design standards, even if they do not have frontage on that particular street. NMTP improvements will be on the side of the road having roadway improvements added.

2. Boarding locations for mass transit.
   a. Indicate where bus pull outs are required, the length of pull outs and their widths. Add design detail to Mass Transit Appendix.
   b. Roadway or frontage improvement projects will include bus stop pads and shelters.

3. Provide draft language for use with ordinance to adopt these design standards.

Other comments:

1. Provide table of contents with page numbers indicated. Provide Index of Tables and Figures used. Tabs for the Chapters and each Appendix need to provided. This is a very difficult document to find specific information in. Finding information referred to in one part of this document is very difficult to find in another part.

2. Indicate that this is the May 2007 NMTP.

3. **Executive Summary**:
   a. Page i. Add sentence to second paragraph, or appropriate text. “Private development must pay for their share of non-motorized transportation facilities. “
   b. Page iii. Indicate copy of GIS inventory provided to City by TRANSPO in a digitized format. Provide summary of this inventory in Appendix.
   c. Page iii. Describe difference between Local Street as defined in the Transportation Plan and Neighborhood Connector as used in the NMTP.
   d. Page iv. Update costs to reflect 2007 unit costs versus 2005 unit costs. Similar comment throughout the entire NMTP.
   e. Page v. Start off comments for Chapter 5 with statement: “The Local Design Guide contained in this chapter is suggested for use in updating and revising the City of Bonney Lake Public Works Design Standards.”
   f. Page vi. Please elaborate on “completion of a local street design option assessment”.
   g. Page vi. Address-outline funding options. Utilize text from attached document SIDEWALK PROGRAM IMPLEMENTATION. Add other funding options you are aware of. Provide details in Chapter six.

4. **Chapter 1. Community Involvement**
   a. Council Workshops: 18 Oct 05, 21 Feb 06, 4 Apr 06, 16 May 06, 5 Sep 06

5. **Chapter 2. Inventory & Evaluation**
   b. Provide digitized copy of the GIS data for sidewalk/curb inventory to the City.
6. **Chapter 3. Methodology for Prioritizing Pedestrian Projects.**
   a. Page 3-1. Redefine Neighborhood Connector at beginning of this chapter.
   b. Figure 3-1. Need legend identification of W, R, N project numbers. Need table summarizing all W and R project numbers, as well as the N projects shown on this figure. Indicate in table, title location, one or two sides, width, length, etc.
   c. Page 3-3, refer to Appendix that provides Table 9 and Figure 6 from the April 2006 Transportation Plan.
   d. Page 3-3. Add text "Bonney Lake has only one Major Arterial, the SR410 corridor. There are several minor arterial and collector classified roads as shown on Figure 6 in the Transportation Plan."
   e. Page 3-4. Define “walk to school routes”. What does this classification mean and how is the designation obtained? Are they only on collector and minor arterial streets?
   f. Add Appendix showing PPI scores and each Accessibility Indices for all projects.
   g. Page 3-5. Update cost from 2005 to 2007 unit costs. (Table 3-2, 3-5, 3-6, and Figures 3-2, and 3-3.)
   h. What is “Community Program” in table 3.5? How different from Arterial & Collector streets? Should those projects be mapped on Figure 3-1?
   i. Page 3-9. Spell out 2006 Transportation Plan versus using TP.
   j. At various points throughout the NMTP there are various sidewalk widths mentioned. Need a table showing under what condition different widths apply similar to the following; however, use your own widths/format:

<table>
<thead>
<tr>
<th></th>
<th>One Side</th>
<th>Both Sides</th>
<th>Bike Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Arterial SR410</td>
<td>12 feet</td>
<td>10 feet</td>
<td>No</td>
</tr>
<tr>
<td>Minor Arterial Commercial</td>
<td>10 feet</td>
<td>6 feet</td>
<td>Yes</td>
</tr>
<tr>
<td>Residential</td>
<td>?</td>
<td>5 feet</td>
<td>Yes</td>
</tr>
<tr>
<td>Collector</td>
<td>10 feet</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Local</td>
<td>?</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Neighborhood Connector</td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Downtown</td>
<td></td>
<td></td>
<td>10 feet</td>
</tr>
</tbody>
</table>

   k. Need to include projects for sidewalks along the entire SR410 corridor. Break into the following sections:
      Myer’s Road to Old Sumner Buckley (OSB) Hwy
      OSB Hwy to 184th Ave.
      184th Ave to 192nd Ave.
      192nd Ave to 198th Ave.
      198th Ave to 214th Ave. (done)
      214th Ave to 234th Ave.

   l. Need to include sidewalk projects for the following streets in the Downtown Plan:
      184th Ave from 192nd Ave to OSB Hwy and from OSB Hwy to SR410
      OSB Hwy from SR410 to Locust Ave.
      90th Street from 184th Ave to 186th Ave.
      186th Ave from OSB Hwy to 90th Street.
      188th Ave from OSB Hwy to 88th Street
7. **Chapter 4. Recommended Bicycle Facilities.**
   a. Need table summarizing bicycle projects just like sidewalk projects, with details on type, size, etc. to match Figure 4.
   b. Page 4-2. Copy of downtown plan too fuzzy to use. See attached version.
   c. Page 4-7. Figure 4-3 is out of date and is out of focus. Use Figure 6 from Transportation Plan.
   d. Figure 4-3 title is too vague. Use “Bonney Lake 2006 Transportation Plan (Figure 6)”
   e. Page 4-8. The before and after diagram has no meaning for Bonney Lake. Need to use actual example versus generic version from AASHTO.
   f. Page 4-9. Table 600-1 is very out of date. Did it come from the 1996 Transportation Plan? Use Transportation Plan Table 9 from the 2006 Transportation Plan, Functional Classification Definitions.

8. **Chapter 5. Local Design Guide for Pedestrian Facilities.**
   a. Page 5-21. Provide Option 3 Cross Section with a swell that has grass growing in it but no other rock walls or landscaping. Intent is to provide easily maintainable surface that provides bio-remediation of contaminated surface water.
   b. Explain the PROs and CONs of using permeable asphalt side paths and side walks.

9. **Chapter 6. Recommended Measures to Implement the NMTP.**
   a. Page 6-3. At end of first paragraph, sentence needs to be added that explains what City should do to be able to require construction of NMTP facilities whenever a road is rebuilt, a new lane added, OR frontage improvements occur. Right now, unless frontage improvements occur on adjacent parcels, do not know how to enforce this requirement.
   b. Page 6-4, General Fund section needs to be expanded with possible options. See attached document for some ideas. Please add to these as you see fit.
   c. Why is there no side path projects recommended?
   d. Table 3.5 and 6.1 are identical. Need to eliminate one or call them the same Table number used in two different places. Probably would eliminate 6.1. Should Fennel Creek Trail and 188th Ave be show in the Arterials & Collectors section?
   e. Walk to School Route Plans. Please elaborate on the process to identify streets with this designation.
   f. Need to address Bus Stops.
      i. When/where pull outs required; width and length;
      ii. Far side of intersections versus near side.
      iii. Use of Bus stop pad size per Pierce Transit designs.
      iv. Use of Bus stop shelters per Pierce Transit designs.

DANIEL L. GRIGSBY, P.E.