

---

# WARREN SCHOOL

---

## SCHOOL TRAVEL PLAN

### Promoting Walking & Biking to School

August 2009



*Developed with federal transportation funds administered by the  
VTrans Safe Routes to School Program.*

*Maps provided by the Central Vermont Regional Planning Commission.*

Prepared by **Becka Roof, Going Green** LLC  
14 Winter St., Montpelier, VT 05602

---

## TABLE OF CONTENTS

Introduction & Goals .....	Page 3
Warren School's Walking & Biking Events.....	Page 4
Education, Encouragement & Enforcement	
Action Matrix: 2008-09 School Year.....	Page 6
Action Matrix: 2009-10 School Year & Beyond.....	Page 8
Engineering: Infrastructure Improvements .....	Page 10



### Appendices

1. History & Background of Safe Routes to School
2. Warren Safe Routes to School Team
3. Pre-Program Conditions
  - a. Levels of Walking & Biking: Classroom Tallies
  - b. Barriers to Walking & Biking: Parent Survey
4. Maps & Traffic Counts
  - a. Warren SRTS Map including Traffic & Speed, Sidewalks
  - b. Approximate Distribution of School Students' Homes
5. School Bus Routes – Walk / Bike to the Bus Stop
6. School Site Analysis
7. Related Documents
  - a. Presentation to Town Boards, July 2009
  - b. Warren Village Pedestrian Enhancement Plan, August 2004
  - c. School Newsletter Articles

# INTRODUCTION & GOALS

---

## INTRODUCTION

This school travel plan lays out the ways in which the Warren School currently supports walking and bicycling to school and its plan to actively promote walking and bicycling through the 5 E's: Education, Encouragement, Enforcement, Evaluation, and Engineering. This plan was developed as part of the school's participation in the VTrans Safe Routes to School Program.

In order to put the most important part of the plan – the action matrices and potential infrastructure improvements – at the start of this document, background and historical information appears as a series of Appendixes.

---

## PROBLEM STATEMENT

Warren School is located just outside the village of Warren, within easy walking distance of the center of town. Co-located with the school are other community resources: the recreation fields, tennis courts, a skate park, and a fitness/hiking trail.

Most village streets in Warren do not have sidewalks. Throughout the village, what were once narrow dirt roads are now wider asphalt streets. Over the years, the speed and volume of traffic have both increased, so that the village is no longer a safe place for students to walk along the sides of the street. Brook Road, used as an east-west corridor connecting Route 100 to Roxbury Mountain Rd. and thence to Route 12A, has a particularly high volume of traffic. Even School Road is designed with motorists as the primary users; there are no sidewalks or bikeways.

Families in Warren would like to walk or bike to school, but village traffic feels unsafe – especially for elementary school-aged children. Village residents report that traffic speeds in the village are a deterrent to a walkable community. Some families have relocated within town to get away from the village traffic. Other families have relocated into the village in order to be closer to the school and adjacent recreation fields, the library, and the general store, and would like to be able to walk or bike to these destinations.

---

## GOALS

The Warren Safe Routes to School team identified the following goals at a meeting in October 2008.

1. To promote a sense of community at the school and in the village.
2. To make it safer to walk and bicycle to and from both the school and the other community resources on School Rd. and throughout the village.
3. To promote life-long healthy habits among students and their families.
4. To teach students decision-making skills about traffic, weather, and route-finding.
5. To decrease Warren residents' reliance on automobiles, toward reducing greenhouse gas emissions.
6. To have fun.

Most strongly, the Warren SRTS team is interested in developing a sense of community, and making the village streets more hospitable and walkable.

## WARREN SCHOOL'S WALKING & BIKING EVENTS

The Warren School, with about 140 students in grades pre-K to 6, has held many Walk/Bike to school day events in the past several years. Usually about 30-40 students participate in the event filling the bike rack and covering the lawn with bicycles. Parents are very supportive and ride with their children to and from the school.

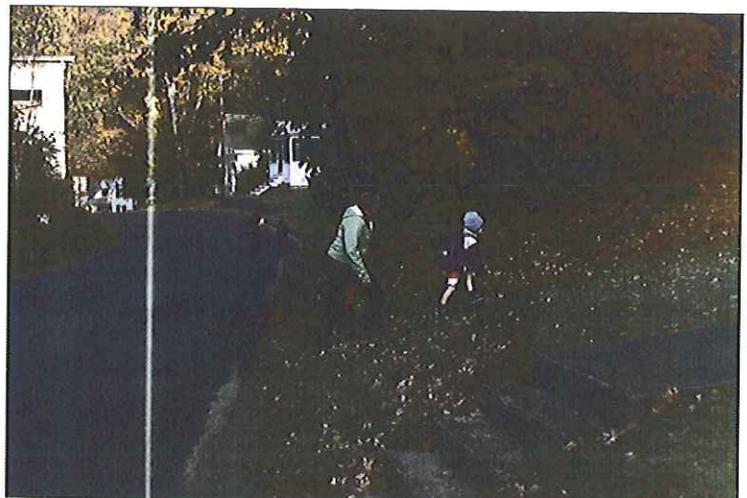
Recognizing the desire of students to walk and bike to school and the need for safer travel for walking and bicycling in the village, Select Board member and parent Kirstin Reilly led the school's successful application to the VTrans Safe Routes to School program. The school was selected for participation for the 2008-09 school year, and grant funds are available to purchase safety, educational, and promotional materials/supplies in support of the program. The School also hired a consultant to assist in the development of this School Travel Plan. Following on the education and encouragement programs, the Town of Warren in collaboration with the school will be eligible to apply for Safe Routes to School infrastructure grant funds in 2009. These grants provide 100% federal funds to key improvements identified in the School Travel Plan. No local match is required.

In the fall of 2008, the program expanded to have much broader participation by encouraging drop-off at the base of School Road. During this event 112 students participated by walking or bicycling the whole way or part way to school.

Both school buses and parents used a drop-point at the base of School Rd. and cars could turn around at the town garage. The Safe Routes to School team set up traffic cones along School Road the night before the event to create a walking zone on one side. At key crossing areas in town, advance warning signs were set up to alert motorists to kids crossing. Adult volunteers wearing orange safety vests assisted students in crossing the street. The vests were distributed via the school office on the afternoon before the event.

Volunteers were asked to be at their stations by 7:30AM. The school buses dropped off at 7:35AM. School starts at 8:00AM. Adult monitors along School Road were asked to space themselves out. A list of volunteers and stations is included in Appendix 2.

With strong interest in this event-based approach, the Warren Safe Routes Team is planning to increase the frequency in Spring 2009 to weekly events.



*Photos from Warren's  
Walk / Bike to School Day, Oct. 2008.*

## **Weekly Walk & Bike Days – Spring 2009**

Beginning the first week in May 2009 and through the end of the school year, the Safe Routes team hosted a support system of parent volunteers stationed at intersections throughout the village area. With support from the local constable and sheriff, the team promoted walking and biking, and allowed parents and school buses to drop off students at the base of School Road.

The team also used traffic cones to create a walking and bicycling shoulder at the edge of School Road. Walkers could also use the gravel shoulder beyond the edge of the pavement.

Visible "slow down" signs were put up on event days to alert motorists to the walking and bicycling activity.

# ACTION MATRIX - 2008-09 SCHOOL YEAR

*Approaches Integrated in Chronological Order*

Sept. 2008	SRTS Team Mtg	Team meeting to launch program, prepare for International Walk/Bike to School Day, other fall events.	All
Sept. 2008	Education	Team members receive training in Walk Smart/Bike Smart safety instruction.	PE Teacher School Coordinator
Sept. 2008	Evaluation	Regional planning commission (RPC) takes traffic counts including speeds.	RPC Staff
Sept. 2008	Evaluation	School conducts parent surveys to identify barriers & concerns	School Coordinator
Fall 2008	Education	Walk Smart instruction, K-2 focus	PE Teacher
Fall 2008	Encouragement	Incentive program to reward walking/biking 10 miles	School / PE Teacher
Oct. 2008	Encouragement	International Walk to School Day – broaden participation via drop-off and increasing road signage for safer travel.	School / SRTS Team
Oct. 2008	Enforcement	Town constable, volunteer fire dept. and county sheriff to assist with traffic control for SRTS event	Constable, sheriff, fire dept.
Oct. 2008	Evaluation	School site assessment and preliminary look at town roads, sidewalks, paths.	SRTS Consultant
Oct. 2008	SRTS Team Mtg	School travel plan meeting to discuss Engineering needs, confirm Education, Encouragement, Enforcement plans.	All
Winter 2009	Encouragement	SRTS team (or sub-group) to critique Walk/Bike to School Day, plan for expansion to weekly event. Develop plan for punch cards with both student and parent rewards (free cup of coffee).	SRTS Team
Winter 2009	Evaluation	SRTS team (or sub-group) to examine past village traffic calming study; bring recommendations to full SRTS team and town boards to consider / approve.	SRTS Team
Winter 2009	Education	School coordinator to work with school staff to develop project to track carbon emissions with a goal of 5% reduction.	School Coordinator
Feb. / Mar. 2009	SRTS Team Mtg	Team meeting to review / approve plans for spring events, infrastructure recommendations to town boards	All

Mar. 2009	Education	SRTS team to work with PE Teacher to develop bike repair & helmet giveaways part of bicycle safety curriculum – connections to bike shops. Etc.	SRTS team, parents, PE Teacher
Mar. 2009	Education / Encouragement	Spring press / PR for April event, especially for local newspaper.	School Coordinator, SRTS Team
April 2009	Encouragement	Spring kick-off for walk/bike to school events; school assembly, punch-card launch, climate change/carbon tracking.	SRTS Team
Apr. – Jun. 2009	Encouragement	Spring promotion for walk/bike to school, with weekly events.	SRTS Team, parent volunteers
Apr. 2009	Enforcement	Spring speeding reminder enforcement; radar speed cart; occasional participation in weekly events?	Constable, Sheriff
Apr. 2009	Education	BikeSmart instruction, Grades 2-6	PE Teacher
Apr. 2009	SRTS Team Mtg	Team meeting to finalize decisions needed for infrastructure grant (depending on due date, TBA), assess events, determine any changes needed.	All
April 2009	Education / Encouragement	Spring press / PR for May event, especially for local newspaper.	School Coordinator, SRTS Team
May 2009	Encouragement	Valley-wide Bicycle Swap at Waitsfield Elementary	Valley Moves / Health Center
May 2009	Education	Bicycle Skills Day / Bicycle Safety Fair	PE Teacher, parents
May –June 2009	Encouragement	Walk / Bike to School Days, weekly on Fridays. Parent drop-off and bus drop-off at the base of School Rd.	SRTS Team, parent volunteers, sheriff, constable.
May 2009	SRTS Team Mtg	Team meeting to plan end of school celebration, plan for continuation to next school year, and update this matrix for 2009-10 and beyond.	All
Jun. 2009	Encouragement	End of School Celebration, including recognitions in incentive contests and carbon tracking / climate change initiative.	School, SRTS Team
June 2009	Education / Encouragement	End of year press, especially related to carbon reductions tracking, overall program, steps for the future.	School Coordinator, SRTS Team

## 2009-10 SCHOOL YEAR & BEYOND

*Approaches Integrated in Chronological Order. At each SRTS Team Meeting, it is recommended to review the upcoming events on the Action Matrix.*

August	Encouragement	Plan for September Walk/Bike to school launch	SRTS Team
August	SRTS Team Mtg	Team meeting to plan for fall events.	All
Early Sept.	Education	Walk / Bike safety refresher	P.E. teacher
Early Sept.	Enforcement	Radar speed cart from the Sheriff's Department – can be transported by anyone with a trailer hitch	Sheriff / SRTS Coordinator
Sept. – 2 <sup>nd</sup> week of school	Encouragement	First Walk/Bike to School Day of 2009-10 school year (Sept. 11)	SRTS team parents, volunteers
Sept. & Oct.	Encouragement	Weekly Walk & Bike to School Days	SRTS team parents, volunteers
Sept. & Oct.	Enforcement	Position Slow Down signs on event days – this is not police-based enforcement, but puts community pressure on driving slower.	SRTS team parents, volunteers
October	Enforcement	Release Slow Down magnets and driver pledge as part of International Walk / Bike to School Day.	School
October	SRTS Team Mtg	Team meeting to critique / improve program for this year, and to evaluate whether to continue Walk & Bike to School Days until Thanksgiving based on weather patterns!	All
November	Encouragement	Possible Walk & Bike to School Days (dependent on weather).	SRTS Team
mid to late March	SRTS Team Mtg	Team meeting to plan for spring events and make any organizational changes. Evaluate whether to begin Walk & Bike to School Days in April or May based on weather patterns!	All
April or May	Enforcement	Use radar speed cart to remind drivers of the need to slow down; position Slow Down signs on event days.	Sheriff, SRTS team
May	SRTS Team Mtg	Team meeting to plan end of school celebration, plan for continuation to next school year, and update this matrix for the next year's program.	All

April or May - June	Encouragement	Weekly Walk & Bike to School Days until the end of school.	SRTS team parents, volunteers, constable
Jun. 2009	Encouragement	End of School Celebration, including recognitions in incentive contests.	School, SRTS Team

In revisiting the matrix for each successive year, the SRTS team is encouraged to consider:

- What did the team learn from the last year of the program, and what can be done to make things run more smoothly?
- What programs can be taken to the "next level" and how to do this?
- Are there parts of the program that worked very well, and should be repeated?
- How to keep the concept "fresh," and volunteers energized?
- Are there any potential safety concerns with how the program went in the past year, and what can be done to alleviate those?
- What is the ideal timing and integration of the team meetings, events, education, etc.? Should the team meet in late summer to prepare for next school year?
- How should this initiative pick up at the start of the school year? Does the team want to wait until International Walk/Bike to School day for the first event, or do it sooner? (Some schools begin walk/bike promotion the first or second week of school.)
- Without the education/encouragement funding from VTrans, how will the team obtain incentives for the program?
- What is the best way to transfer coordinating and leadership positions from one "generation" of parents to the next?

## ENGINEERING: INFRASTRUCTURE NEEDS

The Town of Warren, originally a small community with narrow dirt streets designed for low volumes of local traffic has grown into a community with a fair amount of traffic from commuters, tourists, and through-traffic from Roxbury. Children walking or biking to school through the village and on nearby roads are challenged by the lack of sidewalks, short sight distances, and high traffic volume and speeds for the village street design. Additionally, School Road itself lacks a sidewalk and has a blind curve. Students from more rural areas of town, who may be able to bicycle on their local roads with less traffic, must also pass through the village to get to school.

Traffic speed was easily the top concern for Warren School parents when asked about walking / biking to school. 84% identified traffic speed as a top concern preventing walking & biking to school. The second-highest concern (70%) was lack of sidewalks or paths. One possible approach to infrastructure improvements could emphasize traffic calming – reducing traffic speeds while also increasing driver awareness and courtesy.

### POTENTIAL SRTS INFRASTRUCTURE PROJECTS

#### 1. Traffic calming and/or paths in Warren Village.

From 2002-2004, the Town of Warren conducted a feasibility study for sidewalks and traffic calming in Warren Village. Although the project originated as a sidewalk study, the final report issued in 2004 concentrated on traffic calming for the whole village, with an estimated budget of \$306,133. The Planning Commission recommended to reduce the project scope and budget to \$185,485. Despite citizen support, the town did not pursue the project at that time due to budgetary concerns even at the lower cost, and an increased focus on waste water planning.

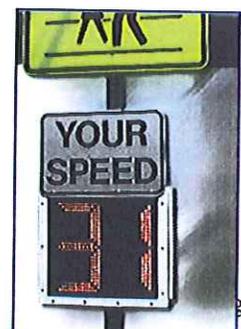
The Safe Routes to School team is now interested in picking up where the feasibility study left off by seeking construction funds for some aspects of village traffic calming. There is also renewed interest in pursuing separated paths or sidewalks.

2. **Radar speed signs.** The Warren Safe Routes to School team identified the through-connector between Route 12 and Route 100, a corridor including Brook Road and a short section of Main Street, as needing the most driver speed awareness. Radar speed feedback signs have been shown to be more effective in sustained use than simple traffic signs. Radar speed feedback signs should be placed in at least two locations on the way into Warren Village:

- On Brook Road heading downhill into the village, near the junction with Dump Road.
- On Main Street heading east into the village, with the exact location to be determined, on either the east or the west side of the Mad River.



*This speed table in Montpelier is similar to what was proposed for Warren in a 2004 study*



**Next Steps:** Include radar speed signs in SRTS infrastructure grant request. SRTS consultant to provide cost estimate.

3. **School site parking & traffic safety.** The parent pick-up/ drop-off at the school currently presents a chaotic traffic situation. With over half of the school's students being driven to and from school, students walking or bicycling on School Road must contend with a driveway bristling with automobiles and buses. Most of the parking is head-in so that departing drivers must back-up all along the school driveway.



**Next Steps:** Principal to work with a parent who is a landscape architect to create a design solution, prior to the infrastructure grant application deadline. SRTS consultant has provided a short written site analysis to assist in this discussion, see Appendix 5.

4. **Bike/ped safety on School Road, including a sidewalk, an off-road path, and/or minor / temporary improvements.** A sidewalk would be just over 1,500 feet long. If the sidewalk could be constructed on top of the existing road pavement, without adding width or affecting drainage, it may be possible to obtain construction funds from a SRTS infrastructure grant. School Road is 24' wide, with two 12' lanes. Lanes of this width are typically used on two-lane highways, such as U.S. Route 2. National standards for road geometry support narrowing travel lanes to as narrow as 10', and many cities have embraced lanes as narrow as 9'. The addition of a 5' or 6' sidewalk on top of one side of the road is a possibility. Another possibility is a trail or path connection.



The SRTS team will also pursue a shorter-term solutions for School Road, for Fall 2009:

- Use temporary paint to stripe a line on School Road to create a six-foot wide "sidewalk" on the north/west side of the street, on the outside of the curve.

Longer term, the team will seek one of two separated solutions to potentially be funded by VTrans SRTS funds. VTrans will provide traffic engineering assistance with budgetting to communities as part of the 2009-10 grant round. Even a ballpark budget on these two options may help the SRTS team to decide on the realistic cost-feasibility of these options. Because the property along the road is owned by the town, cost is the primary limiting factor.

- Bicycleable parallel path, or
- Sidewalk along the road.

5. **Path options connecting between Brook Road and the School.** There is an informal walking path connecting Brook Road in the village to the backside of the School playground. The path is currently most appropriate for walking, but could also serve bicyclists. Through increased use by the SRTS effort, one of the property owners along the path decided to post the path for no-trespassing. In follow-up by the town, it was discovered by the town through the Ancient Roads

process that this path is most likely a public right-of-way, as documented in the town records. One of the landowners along the path is contesting this right-of-way. It may be some time before this issue is resolved. Provided the path is a public right-of-way, it would likely be maintained as a dirt foot trail.

A second "hiking" path option would connect the backside of the future affordable housing development, being planned for the town garage, to the side of the school parking lot. Due to steep grades, and rocky terrain, this would most likely be appropriate for a hiking trail with rockwork steps.

- The Town of Warren might consider applying for a Recreation Trails Grant to improve these path connections to the school and town recreation fields, including privacy screening for adjacent landowners, if desired.

6. **Centerline In-Street Pedestrian Crossing Signs or other crosswalk improvements.** In addition to working with the town to restripe the crosswalks in the village (see below), consider adding in-street pedestrian crossing signs to highlight the crosswalks. These signs are most likely to survive in traffic when they are taken down at night. Work with local businesses or homeowners on an adopt-a-sign program, or possibly put out the signs only during SRTS event days. These signs may be purchased with the current SRTS grant (non-infrastructure), and cost approximately \$300 each.



## TOWN REQUESTS: MINOR PROJECTS AND MAINTENANCE

Some minor solutions to SRTS infrastructure need not wait the 2+ years for VTrans infrastructure funds. These small projects could be accomplished within the town, or with private funds:

1. **Repaint the crosswalks in the village.** Ask the town to paint or repaint the village crosswalks in the Spring to support SRTS. Signs indicating village crosswalks appear at three locations in the village; it is unclear whether there were crosswalks at those locations in the past. The town may have put up the signs without a crosswalk. These signs located on Brook Road at the junction with Flat Iron Rd.; on Main St. at the junction with Flat Iron Rd.; and on Brook Road near the junction with School Road.
2. **On-Street Parking Policies.** Consider whether on-street parking in the village could be used to aid in slowing traffic. On-street parking typically slows traffic; the town's current parking ordinance, however, allows cars to be towed at fairly arbitrary discretion of town staff.
3. **Mirror & Striping on School Road.** Ask the town to install mirrors on School Road to increase safety along the blind corner, and to assist in striping a temporary sidewalk (or walking zone) on School Road, as described above. The downside of a mirror is the possibility of being obstructed by dirt or snow.
4. **School Bus Stops/Shelters; Bike Shelters at School Bus Stops.** Examine the school bus routes for locations where a bus shelter and/or bike parking at the bus stop would support students walking or biking to the bus stop. If bus shelters or bus-stop bike racks are desired, work with Yestermorrow Design/Build School to construct the shelters as part of some of their classes.

## APPENDIX 1 : HISTORY & BACKGROUND OF SRTS

The Safe Routes to School (SRTS) movement started in the 1970s in Odense, Denmark, to address disturbing trends in traffic incidents involving students walking or bicycling to school. In the early 1990s, walking and bicycling advocates initiated a similar program in the United Kingdom, and the program then spread to other countries around the world. Pilot programs in the U.S. were initiated in the late 1990s in California and Massachusetts. Interest then spread across the country, with some states initiating programs using state funding sources. In Vermont, a pilot program was conducted from 2004-2006 with regional funding from the Chittenden County Metropolitan Planning Organization.

The national Safe Routes to School program began in 2005, when Congress incorporated funding for Safe Routes to School into the federal transportation bill (SAFETEA-LU), with small population states like Vermont receiving a minimum of \$1 million per year for five years. SRTS provides 100% federal funds, with 10%-30% of each state's allocation going to education and encouragement, and the remaining 70-90% to infrastructure projects.

The VTrans Safe Routes to School Program began in earnest in the spring of 2006, by soliciting schools to participate in education and encouragement activities. Another round of schools was selected in 2008, and the Warren School is among the schools in this second round.

Schools that are participating in the education and encouragement activities are eligible to apply for infrastructure grant funds, also administered by VTrans. In the 2007 grant round, VTrans accepted applications for projects up to \$250,000, and awarded a total of \$1.4 million.

The 2009 infrastructure grant round has not yet been announced; the criteria and total award amounts may change for the new application. Schools participating in either round of the education / encouragement program will be eligible to apply, so long as the school is actively continuing to promote walking/biking to school. As many as 60 schools could be eligible to apply for infrastructure funds in 2009.

## APPENDIX 2: SRTS TEAM

This core team is supplemented by parent volunteers who are engaged in Walk/Bike to School Days.

<u>Name</u>	<u>Title</u>	<u>Organization</u>
Kirstin Reilly	School Coordinator, Selectboard member	Warren School parent Town of Warren Selectboard
Andreas Lehner	Principal	Warren School
Mike Ketchel	Planning Commission member	Warren School parent Town of Warren, Planning Comm.
Chrissy Gilhuly		Warren School parent
Leigh Clark	PE Teacher	Warren School
John Connell		Warren School parent
Grace Holter		Warren School After School Program, parent
Laurie Jones	Administrative Assistant	Warren School
Adina Ford		Warren School After School Program, parent

---

### WALK/BIKE TO SCHOOL DAY VOLUNTEERS - OCTOBER 2008

Route 100 intersections	Washington County Sherrif Dept.
Plunkton Rd. and Brook Rd	Bill Peatman's helper
Dump Rd. and Brook Rd.	Bill Peatman (Warren's Constable)
Stickers at top of School Rd.	Leigh Clark (PE Teacher) and Suzanne Pingree
School Rd.	Liz Raddock, Caitrin Noel, Deirdre Fennelly
Top of School Rd. to the School	Colleen Mays
Brook Rd. and Flat Iron	John Connell
Fuller and Main St.	Christy Ketchel
Brook and Main St.	Grace Holter
Flat Iron and Main St.	Chrissy Gilhuly
Photos	Andreas Lehner (Principal)

*Other parents participated by walking or biking with their own children, adding to the overall adult presence on the roads.*

---

### ADDITIONAL COMMUNITY CONNECTIONS:

Miron Malboeuf, Zoning administrator  
 Jim Edgecomb, Conservation Commission member, mapping trails in town.

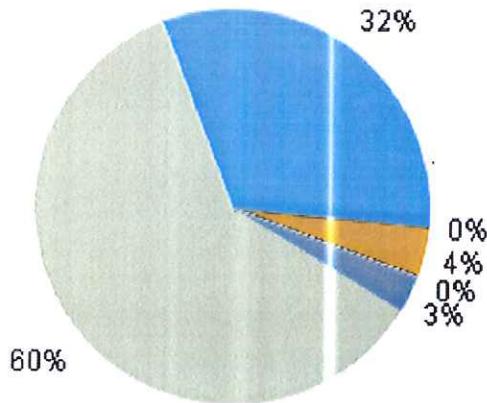
## **APPENDIX 3: PRE-PROGRAM CONDITIONS**

### **LEVELS OF WALKING & BIKING: CLASSROOM TALLIES**

Warren began promoting walking & biking to school before participating formally in the Safe Routes to School Program. In the Fall of 2008, one event was held on International Walk/Bike to School Day on October 8, 2008. The "pre" data was not really pre-program, but it provides a snapshot of typical travel modes at Warren School. It was collected in late October (week of October 27, 2008), when there was no event promotion and late fall weather was already setting in.

## TYPICAL TRAVEL WITHOUT SUPPORT / PROMOTION – FALL 2008

### Students Traveling by Each Mode (across all reported days)



The "post" data was collected in early June, when adult road monitors were available to support walking/biking to school. The data was collected Tues-Wed-Thurs. Warren's normal "walk/bike to school day" is Friday.

Despite a very rainy (pouring) Tuesday, the overall numbers still reflected many more students both walking and bicycling than in the "pre" data.

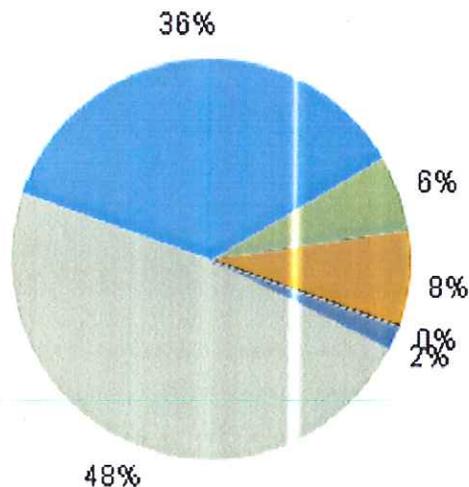
*The number of students walking doubled, overall, with nearly 15% of students walking to school in the mornings. Considerably more students walked to school, than back home. Many students are picked up from the after school program by parents on the way home from work.*

Biking to school was more evenly split across arrival and departure, with about 6% of students participating both morning and afternoon.

Anecdotally, Warren SRTS team members report even higher levels of participation on Fridays – Warren's regularly scheduled walk/bike to school events.

## SPRING 2009 – DURING WALK/BIKE PROMOTIONS

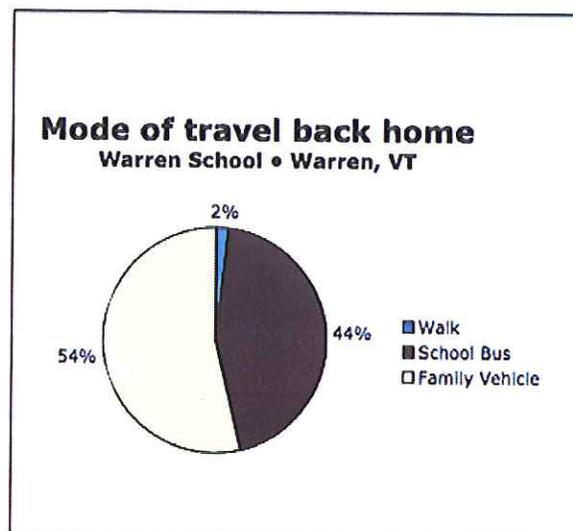
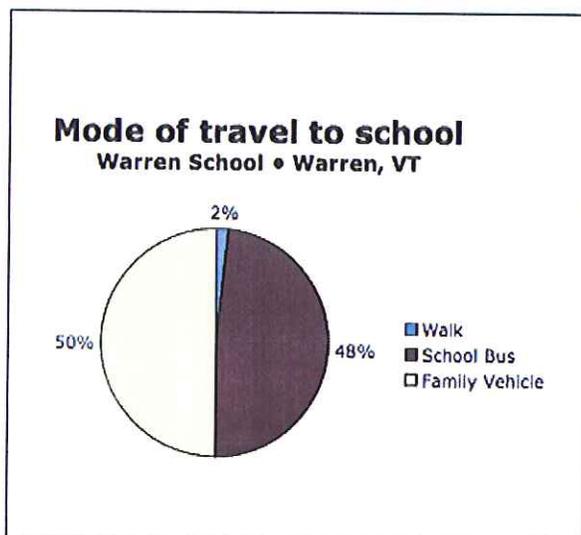
### Students Traveling by Each Mode (across all reported days)



### BARRIERS TO WALKING & BIKING: PARENT SURVEY

The initial, pre-program parent surveys were conducted in September 2008. 50 households responded to the survey, representing 83 students - or about 55% of the student body.

Only one family reported walking to school. Everyone else drives, or rides the school bus. In the comments section one family said they bike occasionally. There is no carpooling. Some kids ride the bus in the AM, but are picked up after school.

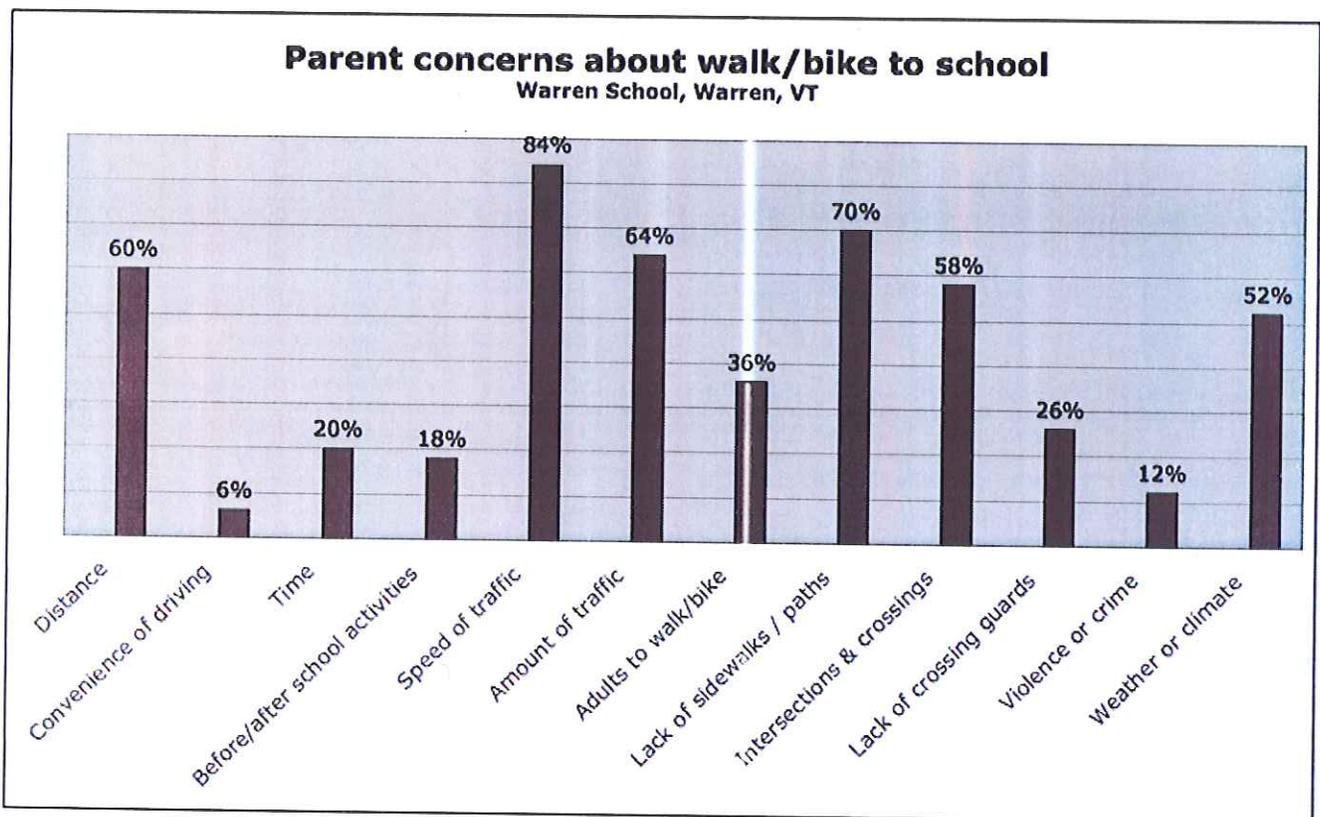


Compared to statewide averages from the schools participating in the 2006 SRTS program, Warren's numbers reflect more driving than is typical, but a healthy percentage of bus riding. Statewide, the pre-SRTS program numbers from the first round were 12% walk, 2% bike, 39% drive, 41% bus, 1% transit, and 4% carpool (numbers may not add to 100 due to rounding).

It appears that kids are interested in walking/biking - over half of them (56%) have asked permission to walk or bike to school. Parents report that they think walking/biking is very fun / fun (50%) or neutral (36%), and very healthy / healthy (84%).

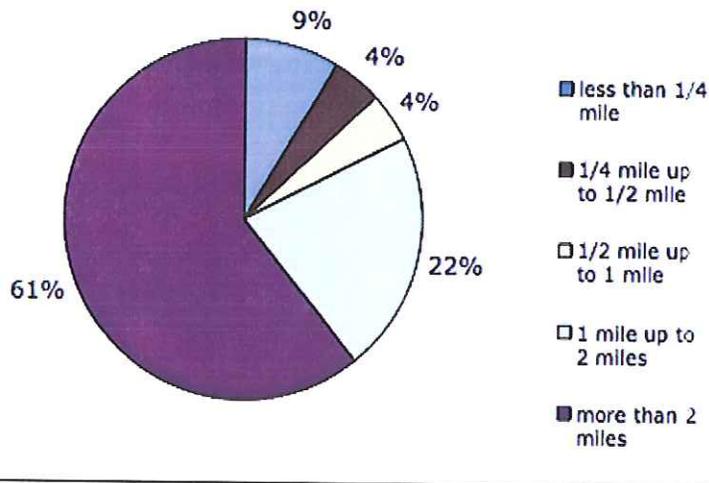
So, why aren't families walking or biking? Below is a chart of the parent concerns cited in the survey.

Typically, the primary concerns in a community come in the 60-70% range. Therefore, the top barrier – speed of traffic – at 84% is a very strong concern. Lack of sidewalks or pathways comes in a strong second at 70%. Several write-in comments also addressed the lack of sidewalks, particularly on Brook Road and School Road.



Lack of crossing guards was reported as a concern by only 26% of the households, but nearly every family that registered a concern about lack of crossing guards also said that they would let their children walk/bike to school if this situation were to be remedied. This is a higher-than-normal correlation between the concern and the solution. As each household was asked to identify the nearest intersection to their residence, an analysis was done to see if a common road crossing (such as Route 100) might be a factor. The analysis showed that the families reporting this concern lived in different parts of town: some out Brook Rd. / Plunkton / Airport; some on the other side of Rte. 100; some in the Village, and some out Fuller Hill Rd. No single crossing guard location would alleviate this concern.

**Distance from home to school**  
Warren School • Warren, VT



Distance is also a concern of 60% of the families, and this corresponds with the percentage that live more than 2 miles from school.

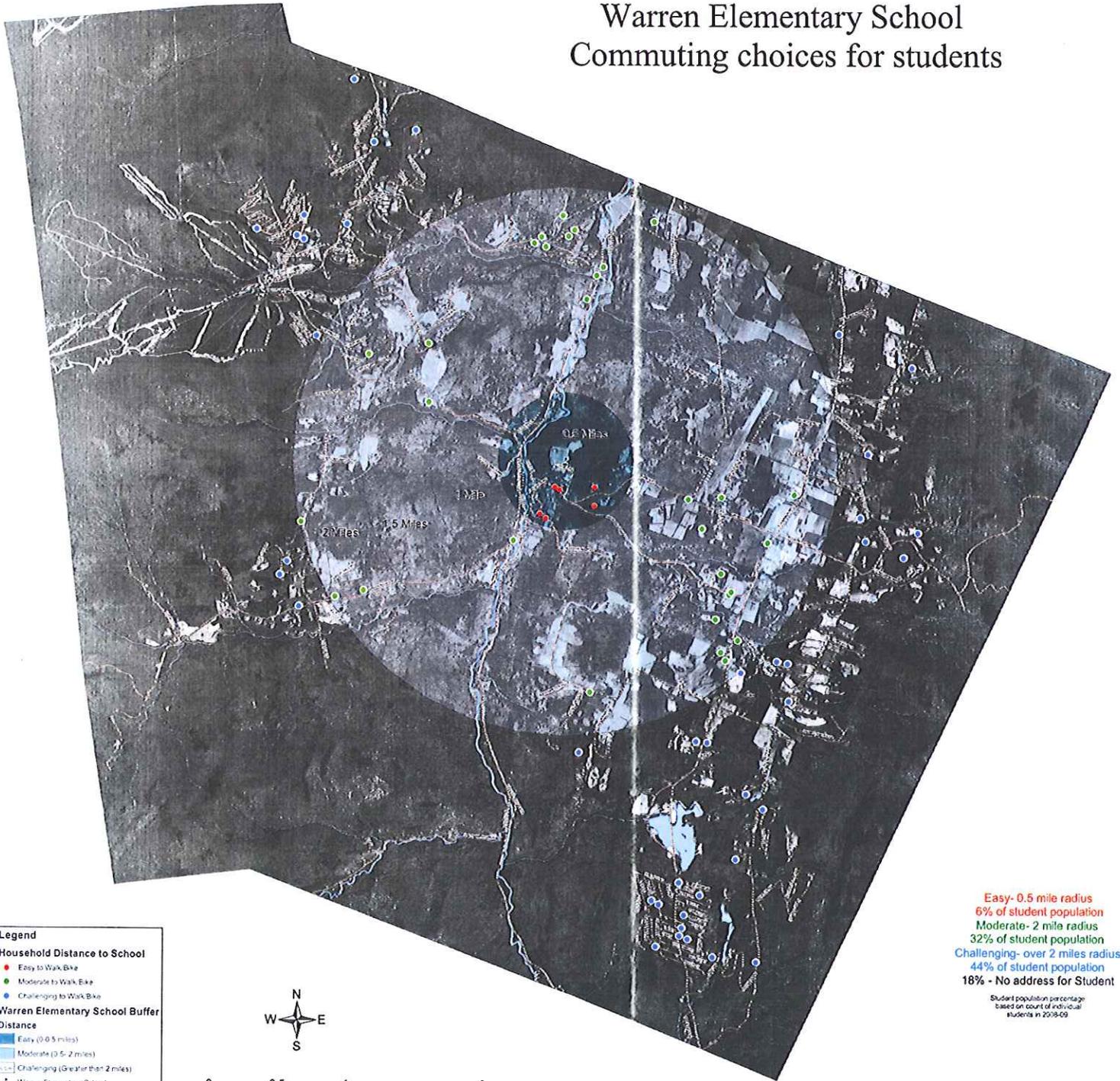
These numbers primarily reflect the rural character of Warren. (In some communities this might reflect a school in an out-of-town location.) Warren School's edge-of-the village location does remove the school by 0.5 miles from the village center, and presents a challenge in that School Rd. lacks sidewalks -- but even if the school were right in the heart of the village, still only a small percentage of students would be very nearby.

The flip side of the distance question:

40% of the parents responding the survey did not cite distance as a concern. These families represent a potential audience for walking and biking to school, if the safety factors could be addressed. Moreover, students who live further from school may be able to walk or bike part of the way – either to the bus, or from a drop-off point to school.

Vermont weather was reported as a barrier by just over 50% of the respondents, and this is typical of Vermont response to this question. The fact that it snows in February should not be a barrier to walking/ biking to school in September or May – but it likely means that families may need a little extra push, come spring, to break the habit of travel in the car.

# Warren Elementary School Commuting choices for students



**Legend**

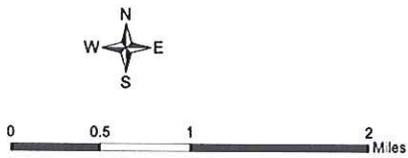
**Household Distance to School**

- Easy to Walk/Bike
- Moderate to Walk/Bike
- Challenging to Walk/Bike

**Warren Elementary School Buffer Distance**

- Easy (0-0.5 miles)
- Moderate (0.5-2 miles)
- Challenging (Greater than 2 miles)

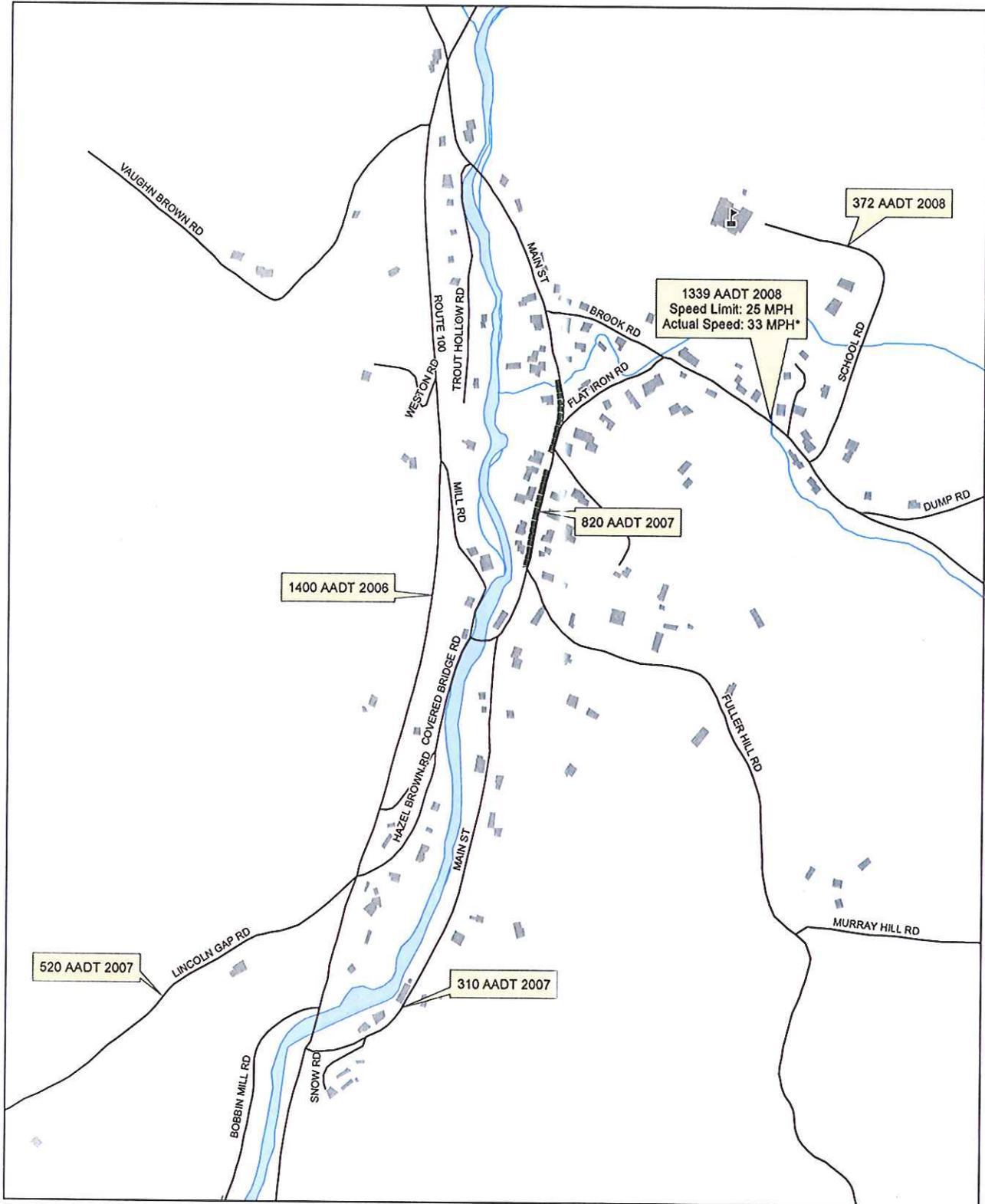
- ⊠ Warren Elementary School
- Roads



Easy- 0.5 mile radius  
6% of student population  
Moderate- 2 mile radius  
32% of student population  
Challenging- over 2 miles radius  
44% of student population  
18% - No address for Student

Student population percentage based on count of individual students in 2010-09

# Warren Village Sidewalks and Traffic Data



**Legend**

- Warren Elementary School
- Buildings
- Sidewalks
- Roads
- Rivers and Streams

0 250 500 Feet

\*The actual traffic speed was measured with automatic traffic recording equipment. The map shows 85th percentile traffic speed at certain locations. This represents the speed below which 85% of motorists travel at a specified location.

Traffic volumes are also shown on the map as Annual Average daily Traffic (AADT), which is adjusted for seasonal variations. The year for each traffic count is also shown.

Source:  
 School: E911 2007  
 Buildings: CVRPC 2007  
 Sidewalks: CVRPC 2008  
 Roads: VTrans 2008  
 Rivers and Streams: VCGI 2008

Map created 10-29-08 by CVRPC.  
 M:\Trans\Safe Routes\Warren\WarrenSidewalks\_11x17.mxd

Data is only as accurate as the original sources. This map is for planning purposes only. This map may contain errors and omissions.



## INFORMAL ROUTES TO SCHOOL

In addition to the sidewalk shown on the map (previous page), there are at least two informal routes/paths to school that should be noted. First, is the path between Brook Road and the school playground. There is also a path through the cemetery that is used by students.

The town conducted an inventory of ancient roads, but none of the ancient roads in town are near the school. Most of the ancient roads have become part of the town's current road network.

## APPENDIX 5: SCHOOL BUS ROUTES

### PROMOTING WALK/BIKE TO THE BUS STOP?

Warren School has two school bus routes: one on the east side of Route 100 and one on the west side. Each route typically has 20-30 students riding each bus. The school bus drivers are contracted directly by the school; the school owns and maintains the buses. The school buses pick up students of all ages, pre-kindergarten through sixth grade on the same run. The Warren School offers an after school program, but there is no bus service for these students. The lack of bus service for the after school program results in a higher percentage of students driven by parents for the afternoon journey home.

As part of this Safe Routes to School initiative, school principal Andreas Lehner and SRTS consultant Becka Roofl did a cursory analysis of the school bus routes to determine whether simplified routes or stops could reduce school bus route times and/or operating costs.

Due to the radial pattern of Warren's roads leading out of the village with few interconnecting roads, no easy route simplification was apparent. The school bus drivers reported that consolidation of school bus stops would be similarly challenging. Student ridership varies greatly day-to-day, and most students live far apart. As a result, the school bus drivers did not feel that consolidating school bus stops would result in a net reduction in the number of stops, or an associated decrease in the amount of fuel used by the bus. Based on this input, the SRTS team may decide not to pursue the idea of bus shelters or bike racks at bus stops.

The SRTS team has considered school bus bike racks or trailers so that students who ride bicycles to school can take the bus home. Warren is in the mountains and the bus-mounted bike racks would serve students living up some of the steep hills surrounding the village.

Bus-mounted bike racks typically hold two or three bicycle each, and are mounted on the front of the bus. A bicycle trailer behind a bus would provide greater capacity. If the team further considers this idea, the following should be determined:

- Who would put the bicycles on and off the racks? Would the bus driver exit the bus to assist a student with a bicycle? Would a trailer have a ramp, or will bicycles be lifted over the side?



*A bicycle trailer such as this one in Treuchtlingen, Germany could carry a number of student bicycles.*

- What procedures would assure student safety when loading/unloading the bicycles?
- What type of rack would work with a variety of bicycle frame sizes? Most bicycle racks for buses are designed for adult frame sizes, and would need to be tested with smaller frames.

## APPENDIX 6: SCHOOL SITE ANALYSIS

The Warren School site is a complex maze of driveways and parking areas, presenting a school entrance that bristles with cars pulling in, parking, and backing up – especially at school arrival and dismissal times. Below are some approaches the school could take.

**1. Improve safety in the parking lot area with only minor infrastructure changes through a fairly regimented system for pick up and drop off.** This change could be made with signs, striping, and driver outreach.

The school would designate different parking areas for parents, school staff, and visitors. Parents who want to come into the building would need to park in a different location than parents who want to just drop-off. A key question is how strict the school would be in asking parents, staff, etc. to use the designated areas. It is human nature to want to park as close to the destination as possible. Will whomever is asked to park in the far parking lot comply? Staff may want to park close to the school in order to carry materials. Parents may want to park close to the school because they are only running in for a few minutes. *Someone* would be relegated to the far parking lot.

Key concepts for drop-off areas:

- Separate school buses, short-term parking, long-term parking, and parent drop-off from each other, and from bicyclists and pedestrians.
- Avoid situations where student walkers or bikers must interact with motor vehicles backing up.

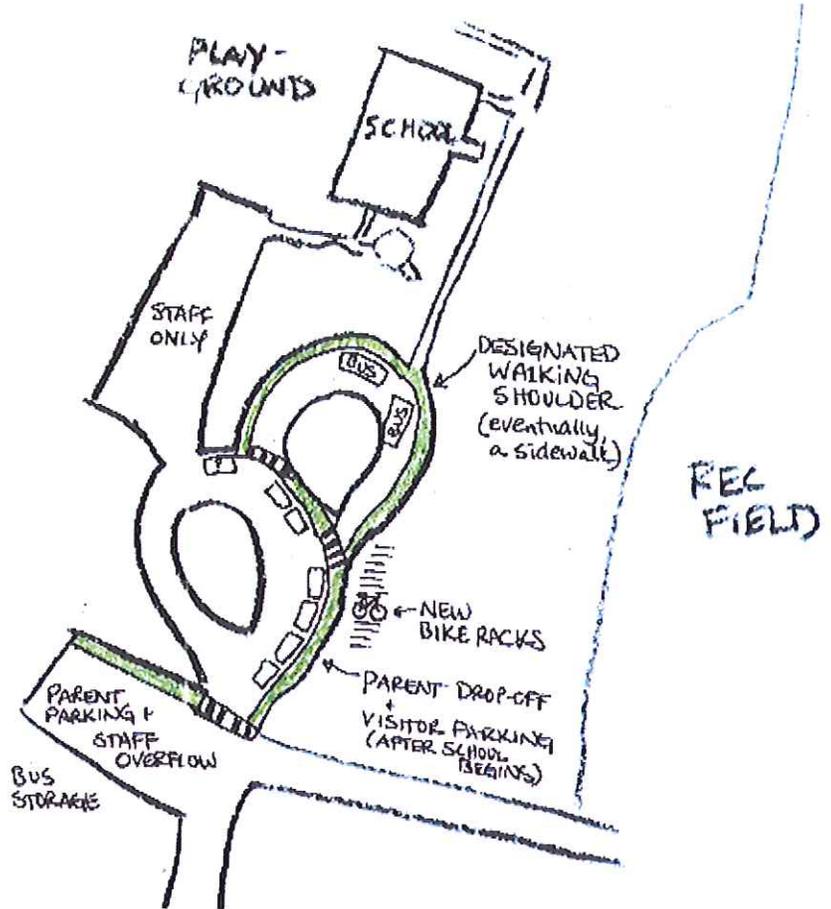
In concept, the below plan might be considered:

- Designate the near parking lot for staff parking, only. If there are more staff vehicles than spots, ask for volunteers who don't mind parking in the far lot or rotate who gets to park in which lot. Make sure the division is fair.
- Stripe a walking zone along the existing loop; eventually consider upgrading this to a sidewalk. Details of engineering would need to be worked out, including proper turn radii for buses.
- Require parents who want to drop-off along "the loop" to remain with their vehicles. Student safety patrols would assist younger students (pre-K) going into school. Students serving on the safety patrol would be given instruction, and would wear reflective sashes or vests.
- Parents who want to come into the building with their children would park in the far parking lot and use the designated walking route to reach the school.
- Access to the bike racks would be provided along the walking zone.
- Consider whether it would be acceptable to allow parents dropping off (remaining with their



vehicle) to use the school bus loop once the school buses have departed. The buses currently remain in the loop for about 15 minutes. If the buses departed sooner, this loop could be used. Even with the current school bus pattern, parents are still dropping off for 10 minutes after the buses depart.

- Consider using an in-street pedestrian crossing sign at the crosswalk between the far parking lot and the walking zone loop.
- Temporary signs to designate the different areas could be made from laminated cardstock stapled to grade stakes; in the long run, after a trial period and evaluation of the new system, the school could purchase permanent signs.



**2. Develop a separated walking / biking access to the school via the village walking path (Mobus path), provided that the path is indeed a public right-of-way.** Students walking to school via the Mobus path will avoid the parking lot entirely, entering from the back or side of the school. The school may then still wish to improve parking lot safety, but this would be less critical with the majority of students arriving via the path.

Students walking or biking to school on School Rd. in the non-snowy season can avoid the chaos by walking just north of those large boulders, where you plan to put the bike racks. Bicycling to school is the most complicated of these, and the plan is already to ask for funding for a feasibility study of a bikeable path up School Rd., which would likely continue across the area mentioned above, to connect to the north side of the school.

Winter maintenance would need to be addressed as part of that study, either as a deliberate winter experience (snowshoe, ski) or winter clearing. The school could possibly try for construction funds for the section closest to the school in this grant round - where the path would be fairly flat and simple. For a path the full length of the road, a feasibility study would be needed due to the challenges of engineering and estimating for a project with significant slopes, likely a retaining wall, and drainage.

**3. Embark on a major reconfiguration of the school front, possibly including significant re-grading / fill to create better drop-off loops and parking areas.** This approach would require a further site analysis, which would be eligible to be funded by the SRTS program. One idea would be to add more motor vehicle loop on the north side of the school; however, this would detract from the school's outdoor space.

## **APPENDIX 7: RELATED DOCUMENTS**

(placeholder to attach separate documents)