Planning for Safe Routes to School
Pedestrian Road Safety Audit

Bass River Elementary School
New Gretna, New Jersey

Delaware Valley
Regional Planning
Commission

March 2008

Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency that provides continuing, comprehensive and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties, as well as the City of Philadelphia, in Pennsylvania; and Burlington, Camden, Gloucester and Mercer counties in New Jersey. DVRPC provides technical assistance and services; conducts high-priority studies that respond to the requests and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues; determines and meets the needs of the private sector; and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the Commission.

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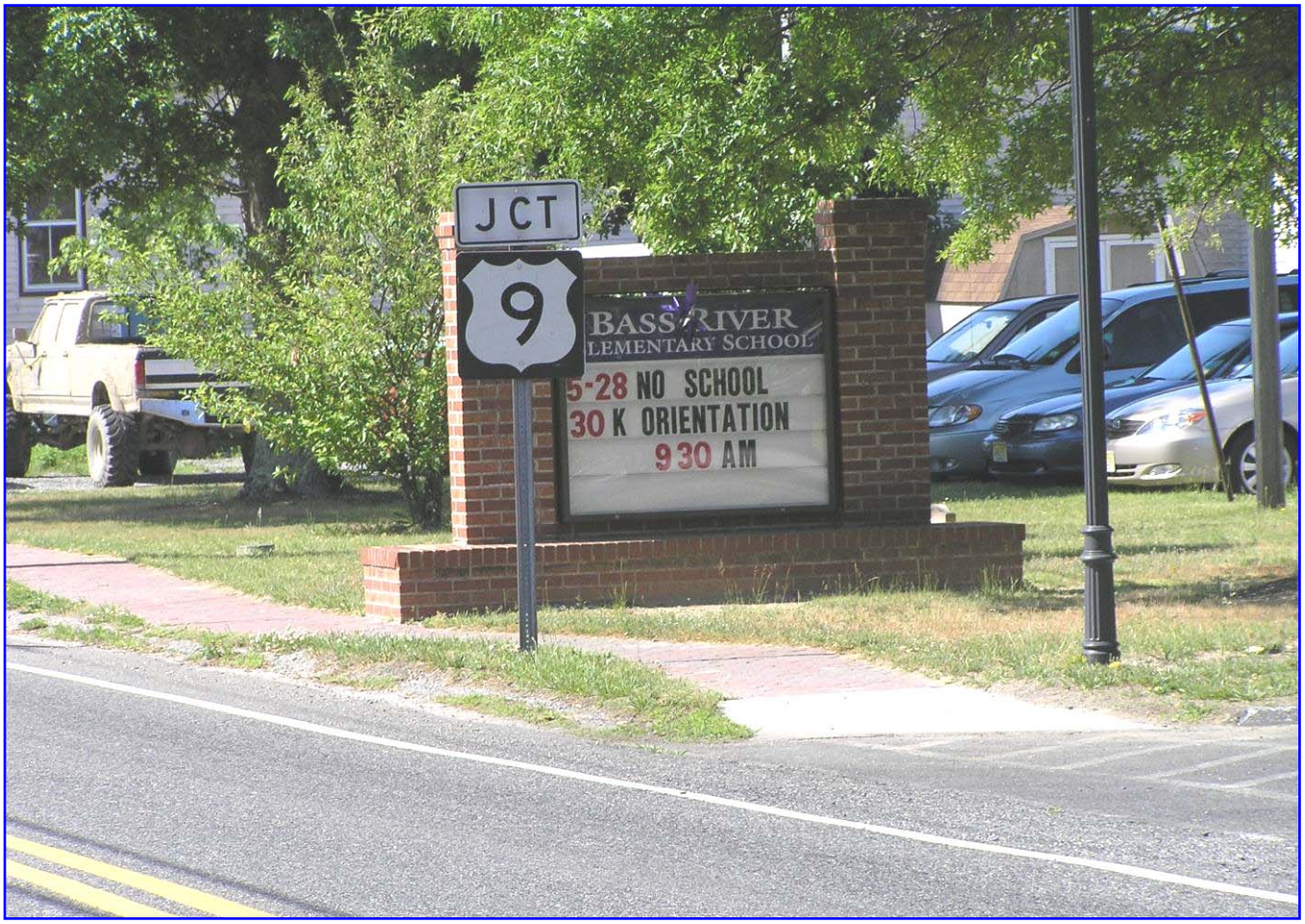
Table of Contents

Executive Summary

This report documents the process, findings, and recommendations of a road safety audit focusing on juvenile pedestrians in the vicinity of Bass River Elementary School, New Gretna, New Jersey. The road safety audit was conducted on May 29, 2007.

The audit team found deficiencies in sidewalk availability and connectivity, crosswalk visibility, and wheelchair access throughout the study area; and that vehicle speeds and visibility pose unacceptable risks to children crossing US Route 9.

Recommendations include small to moderate capital projects to remedy the deficiencies and "quick fixes" that could be implemented immediately to improve safety. Funds for capital projects may be applied for through the New Jersey Department of Transportation's (NJDOT) "Safe Routes to School" program.



Source: DVRPC, 2007

1. Project background

Over the past generation, student travel to primary school by walking and bicycling has declined dramatically across the United States: in 1970, nearly 65 percent of all children walked or biked to school, compared to less than 15 percent in 2000. Simultaneously, childhood obesity has increased to the level of an epidemic. The causal link between these two trends has become widely accepted. A growing body of research has linked the two trends with fundamental environmental changes, including suburban sprawl, an ever-increasing speed and volume of motor traffic which endangers pedestrians, and roads designed and maintained without consideration of pedestrian safety and amenity, which conspire to discourage people from walking.

An international movement dedicated to reversing these trends, called "Safe Routes to School," has succeeded in enacting legislation, at the state and federal level, to fund local projects to enable and encourage children, including those with disabilities, to walk and bicycle to school—and to make walking and bicycling to school safe and appealing. A Safe Routes provision in the most recent federal surface transportation act, SAFETEA-LU, requires a Safe Routes coordinator in every state, and provides funds for Safe Routes projects administered through the state departments of transportation.

In accordance with this federal emphasis area, the Delaware Valley Regional Planning Commission (DVRPC) has initiated a study project to assist school districts and municipalities in identifying roadway improvements eligible for funding under Safe Routes to School, while demonstrating innovative tools and techniques for Safe Routes planning that may show promise for broader application. Road safety audits (RSAs) are increasingly used by road agencies to identify and correct safety deficiencies proactively and they should prove useful in planning for Safe Routes to School.

An RSA is a type of charrette involving a team of experts in road safety who, with the aid of a checklist, identify and document conditions affecting safety found during a field view of the road being audited. A post-audit debriefing is then held, during which participants reach a consensus on problems and solutions. This project seeks to demonstrate the application of RSAs, with a sole focus on the safety of juvenile pedestrians on streets and highways proximate to primary schools, as a tool to identify projects for Safe Routes to School funding.

The principal goal of Safe Routes to School is to increase the number of walking and bicycling trips to school. Engineering improvements are an important component of a successful program, but, implemented alone, are insufficient to assure success. Successful programs also include enforcement, education, encouragement, and evaluation components. For these reasons, study sites were

sought near schools where parents, administrators and local officials are involved in an ongoing, multifaceted Safe Routes program, and have expressed interest in the audit process and the implementation of any recommendations resulting from it.

One site each in Pennsylvania and New Jersey was selected for study. Bass River Elementary School in New Gretna, Burlington County, was selected based on a recommendation from Cross County Connection Transportation Management Association. The Township passed a resolution in 2005 expressing the desire to participate in NJDOT's Safe Routes to School Demonstration Program. Subsequent contact by DVRPC staff with municipal officials confirmed a high degree of local interest in conducting the audit. The audit was conducted on the afternoon of Tuesday, May 29, 2007. The RSA recommendations presented in this report are intended for use in prioritizing improvements to be implemented cooperatively by the Township of Bass River, the Burlington County Engineering Department, and NJDOT.

2. Audit area overview

Bass River Elementary School is located at 11 North Maple Avenue in New Gretna, Burlington County, New Jersey. New Gretna is a rural village of low-density residential housing and small roadside "food and fuel" establishments. See figure 1 on page 4 for a street map and figure 2 on page 5 for an aerial photo of the study area. Although approximately 63 percent of the school's student body of 120 lives within two miles of school, only eight percent walk or bike to school.

US 9, a highway known locally as New York Road, is located within one block of the school. US 9 is a rural minor arterial that carries an average of 10,500 vehicles daily on a two-lane section with shoulders. This road, a major north-south shore route oriented east-west within the study area, conjoins with the Garden State Parkway just south of the study area limits. North Maple Avenue, County Road 679, is a two-lane rural major collector that terminates at US 9; the road continues south of US 9 as South Maple Avenue, a local street. Traffic volume data are not available for North Maple Avenue. The audit area included US 9 between Teaberry Lane and the Bass River bridge; North Maple Avenue from US 9 to West Road; and South Maple Avenue from US 9 south approximately 0.3 miles where the road makes a sharp turn westward.

Speed limits are posted at 35 mph on both North Maple Avenue and US 9, and at 25 mph on South Maple Avenue. The speed limit on North Maple Avenue increases to 40 mph just beyond the study area limit, and to 50 mph less than 0.4 miles beyond that. On US 9 the speed limit increases just beyond the study area limit to 45 mph southbound and to 50 mph northbound. None of the roads audited have on-street parking.

Figure 1: Street map of study area

The intersection of North and South Maple Avenue with US 9 is the only signalized intersection in the study area. Crosswalks at this intersection are 65 and 55 feet long across US 9, and 40 feet long crossing North and South Maple avenues. A convenience store is located on the intersection's southeastern corner. Stops are sign-controlled on all other local streets where they intersect with US 9 or North Maple Avenue.

New Jersey Transit's 559 bus line operates on Route 9 to Atlantic City and Lakewood hourly in each direction. There are no bus shelters on the route within the study area.

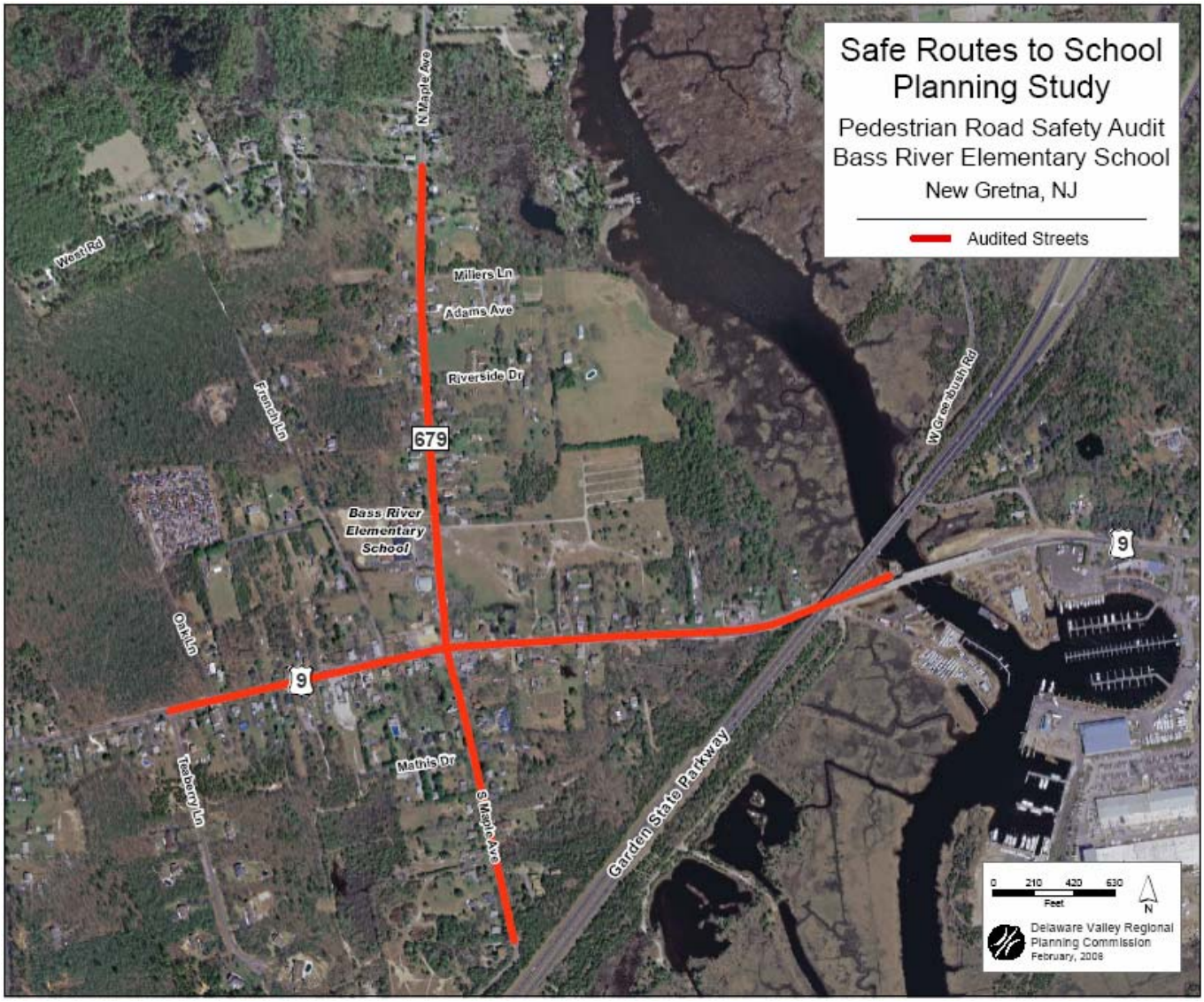


Figure 2: Aerial view of study area

There were no reported crashes involving pedestrians within the study area from 2003 through 2005. The crash data was provided by NJDOT for DVRPC's traffic safety related transportation planning and programming purposes only. The raw data remains the property of NJDOT and its release to third parties is expressly prohibited without the written consent of the Department.

3. Audit summary

The audit was conducted on Tuesday, May 29, 2007. Members of the audit team are listed in Appendix A. See Appendix B for the agenda. The weather was sunny and warm. The audit team walked each on each side of all of the streets described in section 2 and recorded conditions using

the audit tool presented in Appendix C. Between 3:00 and 3:30 P.M., the audit team observed pedestrian and motorist behavior during school dismissal on North Maple Avenue in front of the school and at the intersections US 9 and North Maple Avenue. Behavioral observations were recorded using the Pedestrian and Motorist Behavior Observation Sheet presented as Appendix D.

Photographic documentation of conditions taken before and during the audit is presented in appendices E and F.

3.1. Audit findings

Table 1 on the page 8 presents the findings and recommendations of the audit team as recorded by the facilitator during the post-audit debriefing. The audit team was asked to score, on a scale of -2 to +2, the benefit to pedestrians, the impact on other road users, cost, and local impacts (e.g., loss of parking, loss of landscaping, noise, light pollution, etc.) for each recommendation. The scoring system presumes that higher scored recommendations should take priority over those receiving lower total scores. The problems, solutions, and scores presented in table 1 reflect a consensus of the audit team. Solutions receiving a total score of +5 or higher are highlighted in blue. The scoring exercise is intended to assist the audit team in prioritizing actions.

3.1.1. New York Road (US Route 9)

The audit team found these conditions throughout:

- discontinuous sidewalks;
- highway guide signs mounted too low, obstructing the pedestrian way;
- unchannelized motor access to commercial properties; and
- excessive motor vehicle speeds.

Of primary concern to the audit team was the perceived high volume and speed of A.M. peak traffic.

While Route 9 has wide shoulders, the audit team observed drivers drifting into the shoulder inattentively, using the shoulder to overtake left-turning vehicles on the right, and parking in the shoulder. The audit team agreed that an existing shoulder taper at the intersection with Maple Avenue encourages improper passing behavior.

Some audit team members thought that the location of bus stops should be reevaluated from a safety perspective. Poor drainage at the Maple Avenue intersection was also cited as a problem, although one not evident during the audit due to dry weather.

3.1.2. North Maple Avenue (CR 679)

The audit team found these general conditions:

- discontinuous or deteriorated sidewalks on the roadway's west side;
- No sidewalk on the east side; and
- inadequate, deteriorated, and misplaced traffic control devices, including faded signs, a route marker blocking the sidewalk, a sign and a crosswalk pavement marking not conforming with the Manual on Uniform Traffic Control Devices (MUTCD), and incomplete installation of pedestrian signal actuator buttons.

The team also discovered that the southbound 25 mph school zone is marked to begin directly in front of the school.

3.1.3. South Maple Avenue

The audit team found traffic to be virtually absent during the early weekday afternoon of the audit. Despite its light traffic load and local service characteristics, this residential street is designed like a highway, with a minimum 24-foot width, a centerline, and fog lines. Sidewalks are nonexistent. In the Southbound direction, this straight road takes a sharp right curve as it reaches the Garden State Parkway right-of-way. The team was also concerned about excessive vehicle speeds.

3.1.4. Behavior

During school dismissal, vehicles stacked briefly on southbound North Maple Avenue while waiting to enter the school driveway, blocking the driveway crosswalk.

Table 1: Problems and solutions identified by audit team

Solutions with total scores of +5 or higher highlighted in blue

					Priority scores				
Street	*Location*	*Category*	*Description*	*Solution*	*Pedestrian benefit*	*Impacts on other road users*	*Cost*	*Local impacts*	*Total*
N Maple	west side	sidewalks	sidewalks stop 475 ft short of West Rd	extend sidewalk to West Rd	2	0	-1	0	**1**
N Maple	west side	sidewalks	#s 25, 35, 39: bad side-walks	replace	2	0	0	1	**3**
N Maple	in front of school	sidewalks	Rt 9 sign is an obstruction	relocate	2	0	2	0	**4**
N Maple	driveways: church, school	sidewalks	no tactile warnings	install tactile warnings	2	0	1	0	**3**
N Maple	east side	sidewalks	no sidewalks	install sidewalks	2	0	-2	-2	**-2**
N Maple	old sch bldg	facilities	insufficient crosswalks	install & relocate: north driveway of school (south side) w/ flashers	2	1	-1	0	**2**
N Maple	school zone	facilities	school zone sign not to MUTCD	replace	0	0	2	0	**2**
N Maple	Rt 9	facilities	pushbutton on south side only	install pushbutton/signal heads all around	2	-1	0	0	**1**
N Maple	Rt 9	facilities	"Do not cross" signs faded	replace	2	1	2	0	**5**
N Maple	Rt 9	facilities	poor drainage @ ramps	reevaluate at later date	2	0	TBD	0	**2**
N Maple	in front of school	around schools	25 mph zone begins at school	move back school zone	2	-1	2	0	**3**
Rt 9	various	sidewalks	lack of sidewalks most locations	install sidewalks	2	0	-2	2	**2**
Rt 9	house # 5681	visibility	fence too close to road	move fence back	2	0	0	1	**3**
Rt 9	various	sidewalks	guide signs too low	raise/relocate/replace	2	0	1	0	**3**
Rt 9	various	sidewalks	open access to businesses	install sidewalks/curbs, reconfigure driveways	2	0	-2	2	**2**
Rt 9	bus stops		questionable safety of locations	investigate bus stop loca-tions	2	1	1	1	**5**
Rt 9	post office	visibility	parking in shoulder	delineate permitted park-ing/install crosswalk	2	0	2	1	**5**
Rt 9	throughout	traffic/road	excessive speed	enforcement	2	1	1	2	**6**
Rt 9	throughout	traffic/road	excessive speed	visual cues	2	1	1	1	**5**
Rt 9	post office	visibility	parking in shoulder	gore/signs	1	1	1	0	**3**
Rt 9	CR 679	facilities	excessive speed	bulb-outs (curb extensions)	2	0	-2	2	**2**
S Maple	length	traffic/road	excessive speed	widen shoulders; eradicate centerline	1	0	0	1	**2**
S Maple	length	traffic/road	excessive speed	install speed tables	1	0	-2	0	**-1**
S Maple	curve	traffic/road	excessive speed	bigger chevrons	2	2	1	0	**5**
Rt 9	intersection	traffic/road	improper passing	eliminate shoulder taper	1	1	1	0	**3**
N Maple	school	facilities	cars blocking crosswalk	educate parents	2	0	2	1	**5**
N Maple	school	sidewalks	no walkway to bldg	construct walkway	2	0	-1	1	**2**
N Maple	school	traffic/road	stacking on N Maple	extend driveway in front of original school bldg	1	2	-2	1	**2**

Source: DVRPC, 2007

3.2. Principal recommendations

Through the scoring exercise and subsequent discussion, the audit team reached consensus on priorities for safety improvements. Capital projects in order of priority are:

- Installation of sidewalks on Route 9 and North Maple Avenue, with highest priority being the extension of the sidewalk on the west side of North Maple Avenue to West Road;
- Extension of the school driveway toward the old schoolhouse to increase vehicle holding capacity and moving the entrance northward;
- Construction of a new walkway to the school building entrance from the sidewalk;
- Installation of additional pedestrian push-button signal actuators at the Route 9/Maple Avenue intersection;
- Installation of curb extensions ("bulb-outs") at the Route 9/Maple Avenue intersection to calm traffic and decrease crossing distance;
- Management of access to commercial properties on Route 9, including definition of driveways with sidewalks and curbs; and
- Eradication of centerline and relocation of fog lines to create wide shoulders on South Maple Avenue.

"Quick fixes" identified by the audit team are numerous and include

- Installation, relocation, or replacement of various worn, mislocated, or needed regulatory warning and route signs (detailed in Table 1);
- Moving the start of the North Maple Avenue 25 mph school zone northward; and
- Installation of tactile warning devices for the visually impaired on sidewalks at the school driveway and at a nearby church driveway.

Of all the suggestions for action posed by the audit team, increased speed enforcement received the highest number of priority points.

It was agreed that the drainage problem at the Route 9/Maple Avenue intersection would have to be addressed during the next road resurfacing, which will occur a number of years from now. The possible relocation of NJ Transit bus stops will require further study.

4. Next steps

The “quick fixes” should be implemented as soon as possible by NJDOT, Burlington County, and Bass River Township. Cross County Connection has offered to conduct a bus stop location study.

A speed study on Route 9 and Maple Avenue should be conducted to provide an objective evaluation of the need for increased speed enforcement.

The most difficult, expensive, and needed improvement is the installation of sidewalks. The Township has used limited Community Development Block Grant (CDBG) funds to install sidewalks along a limited portion of the south side of North Maple Avenue, which it wishes to extend northward to West Road. It has applied for and was denied limited NJDOT Safe Routes to School funding to pay for that project. Although the application selection process is highly competitive, with no guarantee of funding, the Township should nonetheless resubmit its application for the next funding round.

NJDOT and the Township should jointly prepare an access management plan for Route 9 through New Gretna and explore funding of the plan and its implementation through NJDOT’s local aid programs.

Appendix A

Appendix A: Audit team

Name	Title	Affiliation
Elise Bremer-Nei	Safe Routes to School Coordinator	New Jersey Department of Transportation
Doug Dillon	Traffic Engineer	New Jersey Department of Transportation
Martin C. Livingston	Traffic Engineer	Burlington County Engineering Department
John Madera	Sr. Transportation Planner	Delaware Valley Regional Planning Commission
Lawrence A. Mathis Jr.	Principal	Bass River Township Elementary School
Gary Smith	Director of Public Safety	Bass River Township
Amanda S. Somes	Township Clerk	Bass River Township
Ronda Urkowitz	Program Director	Cross County Connection TMA
Chris Van Brunt	Traffic Safety Coordinator	Burlington County Engineering Department
Karen Yunk	Traffic & Safety Engineer	Federal Highway Administration NJ Division

Appendix B

Appendix B: Audit agenda

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
Planning for Safe Routes to School
Pedestrian Road Safety Audit
Bass River Township Elementary School, New Gretna, NJ

Tuesday, May 29, 2007

AGENDA

8:00 a.m.	**Meet in front of Bass River Twp. Building for A.M. observation briefing**
8:15 – 8:45 a.m.	**Observation of morning school arrival activity**
8:45 – 9:30 a.m.	**Pre-audit briefing**
	a. Welcome and introductions
	b. Project background and purpose
	c. Overview of the audit process
	d. Study area background
	e. Explanation of the audit checklist
9:30 – noon	**Pedestrian road safety audit**
	a. N. Maple Avenue to West Road
	b. S. Maple Avenue to curve
	c. US 9, Maple Ave. to Oak Ln.
	d. US 9, Maple Ave. to Bass River
Noon – 1:00 p.m.	**Lunch (provided)**
1:00 – 3:00 p.m.	**Post-audit findings review and solutions assessment**
3:00 – 3:30 p.m.	**Observation of school dismissal activity**
3:30 – 4:00 p.m.	**Discussion of activity observations; next steps**
4:00 p.m.	**Adjourn**

Appendix C

Appendix C: Audit tool

Location: US Route 9

Auditor: .....

Date: 5/29/07

Key N/A = not applicable

Note: If a deficiency in the road and/or surrounding environment is identified, the auditor should specify details of the problem and the location in the Comment column.

Issue	N/A	Yes	No	Comment
1 Land use and pedestrian context				
1.1 List the key pedestrian generating land uses along the study route.				
2 Sidewalks/walkways				
2.1 Are sidewalks provided on both sides of the street?				
2.2 How wide are the sidewalks?				
2.2.1 Are the sidewalks wide enough (a) for shared use by bicycles? (b) to accommodate persons using mobility aids (e.g., cane, wheelchair)? (c) to accommodate groups of schoolchildren?				
2.3 Are the sidewalks continuous throughout the route?				
2.4 Is the sidewalk in good repair?				
a) clear of obstructions (e.g., poles, awnings, street furniture);				
b) no broken concrete or damaged paving etc.;				
c) clean surfaces (free of litter and dog mess);				
d) limited street furniture (that does not impede pedestrians accessibility). * * Note: Visually-impaired pedestrians prefer a free zone next to the building line (if fully paved sidewalk);				
e) smooth surfaces, but 'anti-skid';				
f) no uneven surface;				
g) no protruding tree roots;				
h) clear of overhanging foliage;				
i) no discontinuities in level or type/quality of construction.				
2.5 Are vehicles parking on the sidewalk? If yes, please specify problem and location.				
2.6 Are pedestrian facilities acceptable where passengers alight, for example, bus stops, school drop-off zones, etc.? Is seating and shade provided?				
2.7 Are vertical clearances sufficient for pedestrians (e.g., road signs are not mounted too low; tree branches are cut back)?				
2.8 Are there driveways with heavy vehicular traffic (volume or vehicle type), e.g., to parking garages and shopping centers? Are these driveways at the same level as the sidewalk? Are tactile ground surface indicators provided in accordance with ADA? Is there good pedestrian and driver visibility?				

Source: DVRPC, 2007

Issue	N/A	Yes	No	Comment
3 Pedestrian facilities and accessibility				
3.1 Are there curbs? Are the curbs in good condition?				
3.2 Do pedestrians have difficulty in crossing the road safely?				
3.2.1 Are there marked crosswalks? If yes, what type (e.g., transverse, continental, gore, textured, lit in-pavement)?				
3.2.2 Are crosswalks sited where people want to cross?				
3.2.3 Are the marked crosswalks well maintained and legible to motorists day and night?				
3.2.4 Are crosswalks clearly signed to motorists by the use of pedestrian warning signs? Are the signs high-visibility florescent yellow-green?				
3.2.5 Do motorists yield to pedestrians in crosswalks?				
3.2.6 Are there in-road yield-to-pedestrian channelizing devices in place?				
3.2.7 Does the site have audio tactile devices for vision impaired pedestrians? Are they working and audible?				
3.3 Are there pedestrian signal heads? If so, which type (man/hand, walk/don't walk, audible, countdown)? Are they working and in good condition?				
3.3.1 Are they push-button actuated? Are pedestrians likely to use the actuator?				
3.3.2 Can persons in wheelchairs reach the push button at pedestrian signals?				
3.3.3 Have pedestrians been given priority at signalized crossings on bus routes?				
3.3.4 At signalized crossings, do all pedestrians have adequate time to cross the road safely?				
3.4 Are curb ramps provided on all corners?				
3.4.1 Can visually-impaired people identify the crossing, (e.g., are tactile ground surface indicators provided in accordance with ADA)?				
3.4.2 Do the curb ramps provide a smooth change in level between the sidewalk and the road pavement?				
3.4.3 Are the ramp slopes appropriate?				
3.4.4 Is there sufficient space to turn wheelchair at top and bottom of ramp?				
3.4.5 Is drainage at/near curb ramps adequate to prevent water ponding?				
3.5 Are curb extensions used where appropriate? Are they clearly delineated?				
3.6 Are signs and pavement markings installed in accordance with MUTCD?				

Source: DVRPC, 2007

Issue	N/A	Yes	No	Comment
4 Catering for pedestrian target groups 4.1 Is there a predominance of special user groups (e.g., intoxicated, seniors, youths, young children, parents with strollers, disabled, tourists)? If yes, what type? 4.2 Are there problems specific to these special user groups? 4.3 Do pedestrians regularly misuse or ignore the pedestrian facilities? Please specify.				
5 Around schools 5.1 Is there a school zone? 5.2 What is the school zone speed limit? 5.3 Is a school crossing provided? 5.4 Is the crossing supervised? 5.5 Are school entrances appropriately located? 5.6 Are appropriate advance warning signs provided? 5.7 Is there any parking (legal and illegal) that causes visibility obstruction to the crossing?				
6 Traffic and road environment 6.1 What is the posted speed limit? 6.2 How many travel lanes are on the roadway(s) (in each direction)? 6.3 Are there parking lanes (or bus lanes) on the side of the road? 6.4 Can parking be managed to maximize sight lines? 6.5 Is traffic speed or volume a problem for pedestrians? Please specify. 6.6 Are there traffic calming devices in place? If so, which type? 6.7 Do these devices impede pedestrian movement? 6.8 Are there any conflicts between vehicles (or bicycles and/or wheeled recreational devices) and pedestrians on sidewalks? 6.9 Is a crash barrier necessary between the roadway and the sidewalk for pedestrian safety?				
7 Construction zones 7.1 Are pedestrians warned of obstructions and temporary work hazards on their traveled path? 7.2 Are alternative routes that provide suitable access for all pedestrians available during construction?				

Source: DVRPC, 2007

Issue	N/A	Yes	No	Comment
8 Signing 8.1 Are street names clearly visible to pedestrians? 8.2 Is it obvious how to get to the schools, parks, or bus stops? 8.3 Are the signs visible day and night?				
9 Lighting 9.1 Are crosswalks sufficiently lit for pedestrian and motorist visibility? 9.2 Is the sidewalk adequately lit for pedestrians to see and feel safe? 9.3 Are there dark places or hiding places that present a personal security issue?				
10 Visibility/sight distance 10.1 Is driver's sight distance to crosswalks adequate? 10.2 Are pedestrians (including small pedestrians) waiting to cross the road visible to approaching motorists? 10.3 Can pedestrians, including small children and persons in wheelchairs, see approaching vehicles? 10.4 Are there temporary or permanent obstructions near the crossing facility (e.g., parked vehicles, roadside furniture, vegetation, fences, etc.)?				
11 Pedestrian fencing 11.1 Is there a need for pedestrian fencing to channel pedestrians to cross the road safely or to prevent them from crossing the road at a particular location? 11.2 Does the pedestrian fencing create a hazard to motorists? (for example, horizontal rails becoming a spearing hazard when impacted by an errant vehicle).				
12 Pedestrian amenities 12.1 Is the pedestrian environment clean and pleasant? If not, please specify. 12.2 Is antisocial behavior a problem? 12.3 Are there seats and/or rest spots for pedestrians? 12.4 Are there drinking fountains for pedestrians? 12.5 Is there sufficient shelter and/or shade against the elements? 12.6 Is the pedestrian environment integrated with the adjacent land uses?				

Source: DVRPC, 2007

Appendix D

Appendix D: Pedestrian and motorist behavior observation sheet

Location: Bass River Elementary School

Auditor: .....

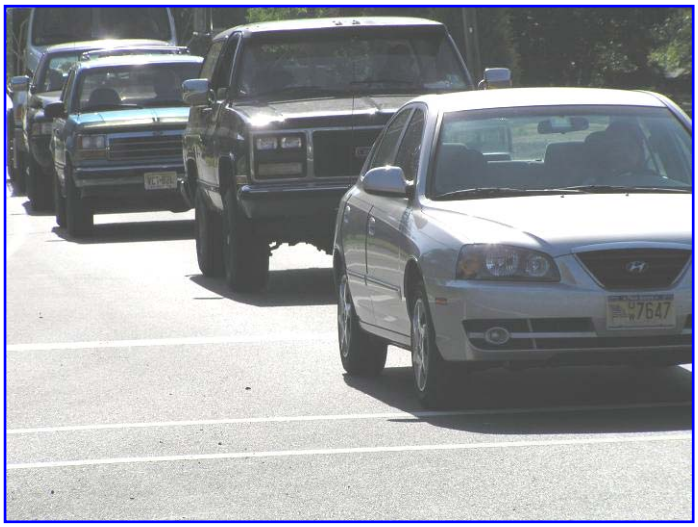
Date: 5/29/07

Issue	Yes	No	Comment
Are children walking in the street?			
Are children running across the street?			
Are children obeying the crossing guards?			
Are children entering the street from between parked cars?			
Are children entering cars from street side?			
Are drivers double parking?			
Are drivers blocking crosswalks?			
Are drivers obeying the crossing guards?			
Do unsupervised children look both ways before crossing the street?			
Do children wait for traffic to stop before crossing?			
Are adults supervising the crosswalks?			
Did you witness any conflicts, collisions, or near-collisions between motorists and pedestrians?			
Do drivers yield to pedestrians in the crosswalks?			
Do drivers obey the school zone speed limit?			
Other observations			

Source: DVRPC, 2007

Appendix E

Appendix E: Audit day photo log



New York Road (US 9)

Top and Middle: Morning traffic near North Maple Avenue.

Bottom: Vehicle overtaking on the right in the shoulder.

Source: DVRPC, 2007

Maple Avenue/US 9 Intersection

Top left: View looking southeast across the intersection. A convenience store occupies the southeastern corner. The crosswalk in the foreground crosses US 9.

Above: Crosswalk warning sign is placed beyond the crosswalk.

Top right: A faded "pedestrians prohibited" sign directs pedestrians to use the crosswalk a few feet away to the right (just out of the picture frame).

Right: The intersection has clearly marked transverse crosswalks, pedestrian signal heads, and wheelchair ramps with tactile warning devices.

Source: DVRPC, 2007

New York Road (US 9)

Top and middle left: Discontinuous sidewalk.

Bottom left: Audit team walking along shoulder where sidewalks are absent.

Above: Unchanneled vehicular access to roadside businesses creates a hazardous condition for pedestrians.

Source: DVRPC, 2007

North Maple Avenue

Top left: Brick paver sidewalk recently installed by the Township along the west side of the road.

Left: Where the sidewalk ends.

Bottom left: Narrow and deteriorated sidewalk in front of residential property.

Above: No sidewalk on east side of roadway.

Source: DVRPC, 2007

North Maple Avenue

Top left and right: Clearly marked ladder-type midblock crosswalks.

Left: Pavement markings of unknown type, possibly intended as a crosswalk between the school and employee parking.

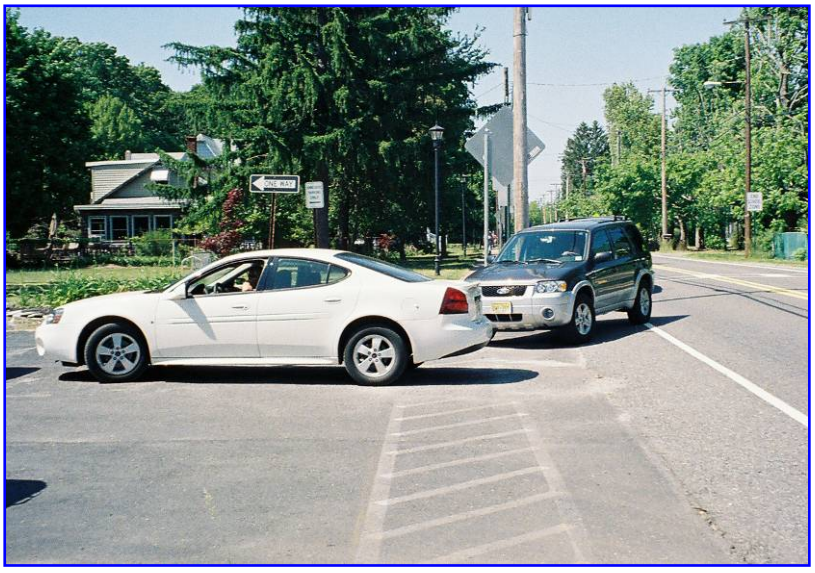
Bottom left: Faded crosswalk at school driveway.

Source: DVRPC, 2007

South Maple Avenue

The photos at left illustrate the highway-like feel of this local street.

Source: DVRPC, 2007



School dismissal

Far left: Students walking home from school

Left: A parent and child bicycling from school.

Below: Vehicles stacking at school driveway block the crosswalk.

Source: DVRPC, 2007

Planning for Safe Routes to School, Pedestrian Road Safety Audit:
Bass River Elementary School, New Gretna, NJ

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Geographic Area Covered: Bass River Township (Burlington County)

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Abstract: A road safety audit focusing on juvenile pedestrians was conducted on portions of US 9 and CR 679 within ½ mile of Bass River Elementary School, New Gretna, Burlington County. Results and recommendations are presented.

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