

# Nellie F. Bennett Elementary School Point Pleasant , NJ



## School Travel Plan August 2018

Prepared by Greater Mercer TMA



**NEW JERSEY**  
**Safe Routes to School**



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## Introduction and Goals

Using the “Six E’s” of Safe Routes to School (Evaluation, Engineering, Education, Encouragement, Enforcement, Equity), Greater Mercer TMA would like to increase the number of bicycle riders and walkers at Nellie Bennett Elementary School.

Greater Mercer Transportation Management Association, a private transportation non-profit was able to assess the current pedestrian facilities and propose the following improvements to not only increase Bennett’s green commutation, but to do so safely.

This document, a school travel plan, identifies background and context about the school, observed traffic hazards, some suggested improvements and an estimated timeline/cost breakdown.

## School Description

### Nellie F. Bennett School Description:

Nellie F. Bennett Elementary School is located at 2000 Riviera Parkway, Point Pleasant, New Jersey 08742. In the 2017-2018 school year, there were 745 students in grades Kindergarten to fifth grade. The school day runs from 8:45am to 3:20pm and students can begin to arrive at 8:20am. There are also extra-curricular programs which run before school.

### School Neighborhood

Point Pleasant Borough is a 3.49 square mile shore community. In the 2010 Census, the population was reported as 18,392 residents. The community is bounded by the Manasquan River, Beaver Dam Creek, and Metedeconk River.

Bridge Ave, an arterial, bisects the borough (east –west) 3 blocks north of Nellie Bennett Elementary, which is surrounded by residential streets. Bridge Ave is partially comprised of SR13, the Lovelandtown Bridge, a 4-lane Urban Minor Arterial, and CR632, a 2-lane Urban Minor Arterial, serving 13,760 vehicles (AADT) 2014-07-22. Bridge Ave is the primary commercial strip for Point Pleasant Borough.

Beaver Dam Rd (CR630) bisects the borough (north-south) 4 blocks west of Nellie Bennett Elementary, also an Urban Minor Arterial, serving 10,780 vehicles (AADT) 2014-09-03.

Parsons generated a Bicycle and Pedestrian Circulation Study in 2013, which included both an assessment of current conditions and potential recommendations to improve safety, through the New Jersey Department of Transportation’s (NJDOT) Local Bicycle and Pedestrian Planning Assistance Program. Point Pleasant Borough has used Safe Routes to School grants for pedestrian upgrades on Riviera Parkway adjacent to Nellie Bennett Elementary as seen in new sidewalks on the south side of Riviera from Beaver Dam to Marine Parkway. Its Traffic Circulation Plan included in the Borough of Point Pleasant Master Plan presents a vision and implementation strategy to provide for a safer, stronger, and more efficient bicycle and pedestrian network.

## Current Safe Routes to School Programming

- Bike safety education is currently performed by Ocean County Sheriff's bike patrol officers.
- Point Pleasant Borough received Bronze level Safe Routes to School Municipal Recognition

## Working Groups and Partnerships

Organization	Role/ Responsibility	Contact
Voorhees Transportation Center	Key Partner	Sean Meehan Project Manager 848.932.2860 <a href="mailto:smeehan@ejb.rutgers.edu">smeehan@ejb.rutgers.edu</a>
Greater Mercer Transportation Management Association	Key Partner	Jerry Foster Transportation Safety Educator 609.452.1491 x 227 <a href="mailto:jfoster@gmtma.org">jfoster@gmtma.org</a>  Ian Henderson Sustainable Transportation Coordinator 609.452.1491x237 <a href="mailto:ihenderson@gmtma.org">ihenderson@gmtma.org</a>
Point Pleasant Police	Community Partner	Lt Leon Downs Administrative Services Commander <a href="mailto:ldowns@ptboropd.com">ldowns@ptboropd.com</a>
Point Pleasant Borough Council	Community Partner	Frank Pannucci Borough Administrator <a href="mailto:FPannucci@ptboro.com">FPannucci@ptboro.com</a>  Pamela Snyder, Councilwoman <a href="mailto:councilmembersnyder@ptboro.com">councilmembersnyder@ptboro.com</a>
Consulting Borough Engineers	Community Partner	Remington and Vernick Engineers  Brandon Bielat <a href="mailto:Brandon.Bielat@rve.com">Brandon.Bielat@rve.com</a>  John LeCompte <a href="mailto:John.LeCompte@rve.com">John.LeCompte@rve.com</a>
Point Pleasant Borough Complete Streets	Community Partner	Kathleen Ebert Parent Champion <a href="mailto:ppbcompletestreets@gmail.com">ppbcompletestreets@gmail.com</a>

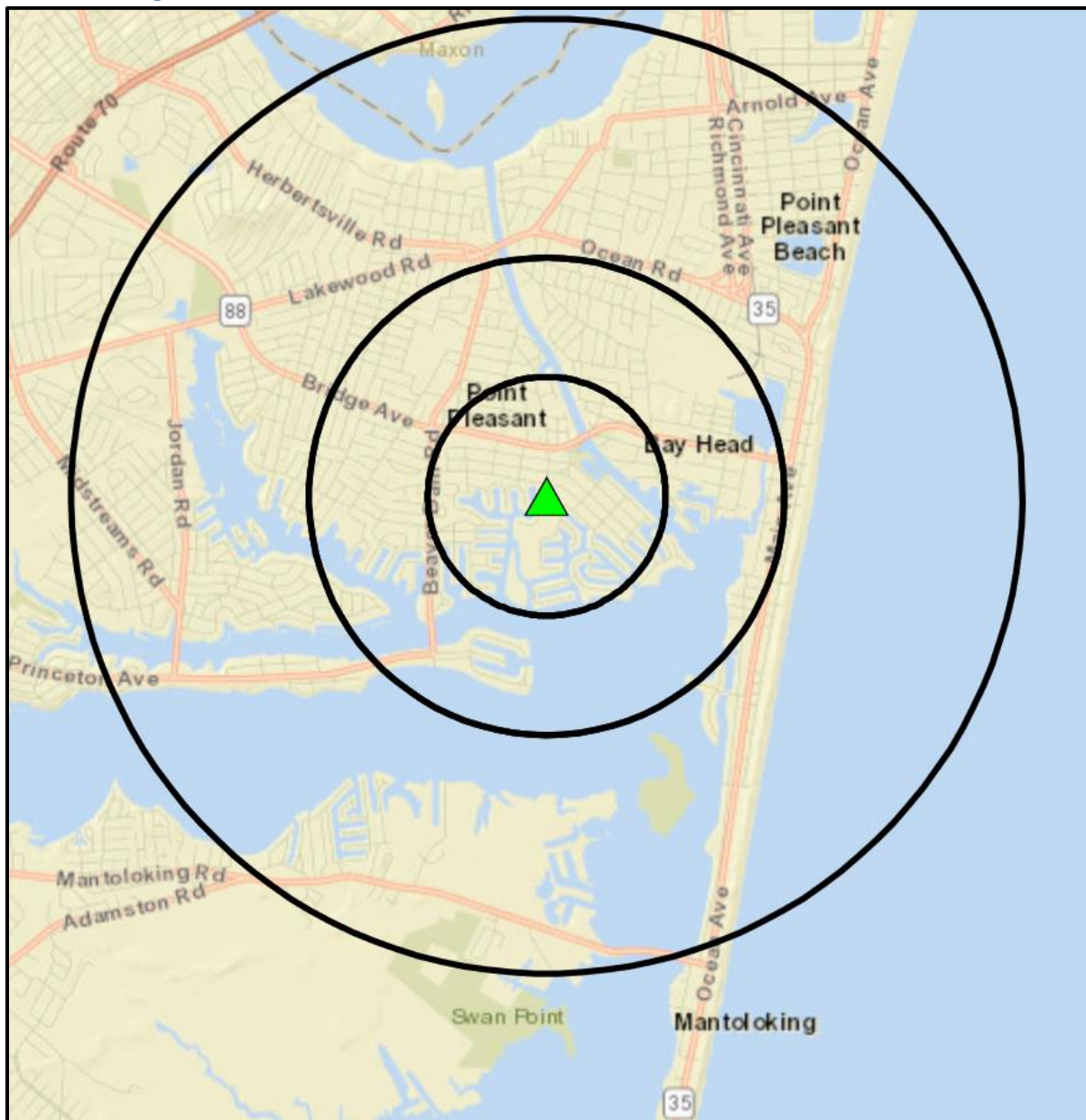
## Partnerships

- Point Pleasant Borough Council
- Point Pleasant Police Department
- Point Pleasant Complete Streets (advocacy)

# Maps

## School Neighborhood

Figure 1. School Neighborhood Buffers

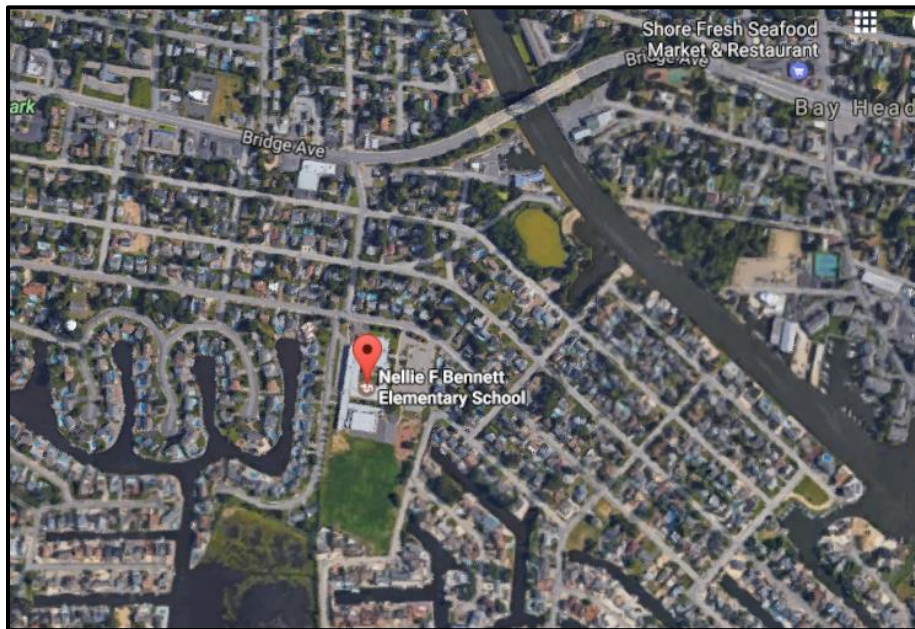


2 miles, 1 mile, .5 mile Buffers

Nellie F. Bennett Elementary School is located 2000 Riviera Parkway, Point Pleasant, New Jersey 08742 (green triangle) in the map above.

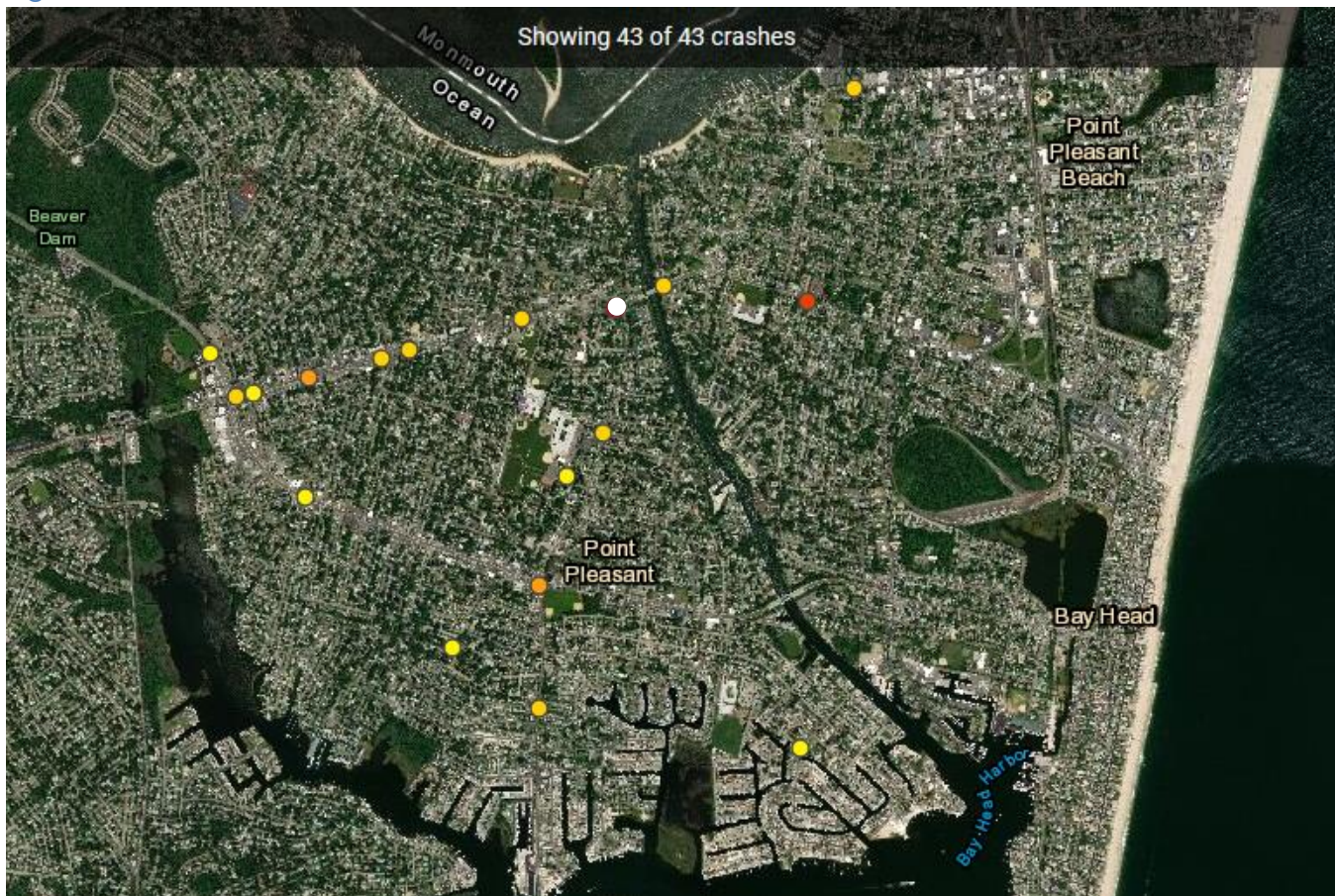


Figure 2. Immediate Vicinity



Immediate vicinity of 2000 Riviera Parkway, Point Pleasant, New Jersey 08742, Nellie Bennett

Figure 3. Numeric Pedestrian Crashes 2006-2016



Yellow=Property damage, Orange=Moderate Injury, Red=Incapacitating Injury, White=Fatality

See Appendix B for specific crash details.



Figure 4. Numetric Bicyclist Crashes 2006-2016



Yellow=Property damage, Orange=Moderate Injury, Red=Incapacitating Injury, White=Fatality

See Appendix A for specific crash details.



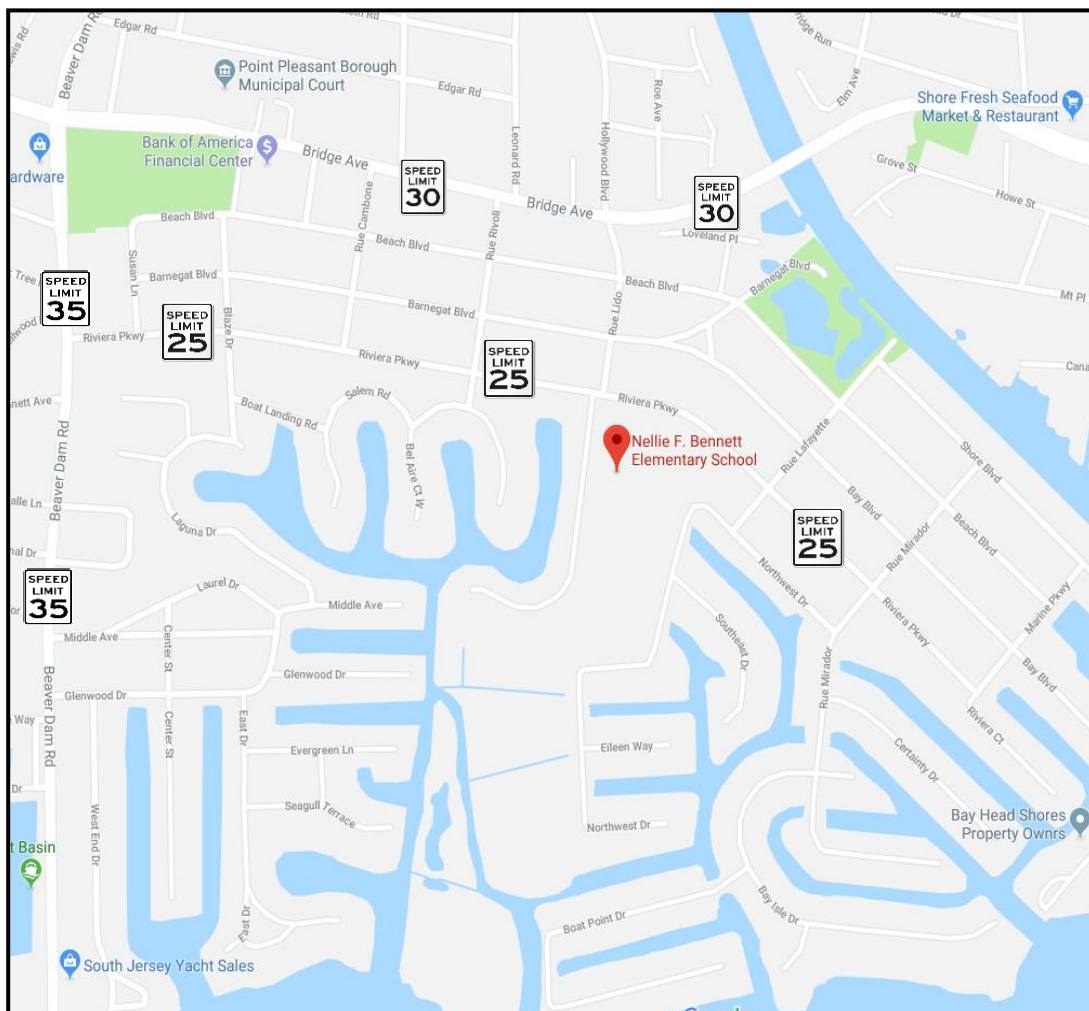
The map shows the location of Point Pleasant Memorial Middle School and Point Pleasant High School. The school district is outlined in blue, and the bridge area is outlined in red. The map includes a yellow tiger logo and various street names and landmarks.

An aerial photograph of Nellie F. Bennett Elementary School. The school building is a large, light-colored structure with a central courtyard. To the north of the building, along Bayberry Ln, is a designated area for bus drop-off and bicycle racks, indicated by a yellow arrow and a text box. To the south of the building, near the intersection of Northwest Dr and Riviera Pkwy, is a parking lot designated for parent drop-off and walker entry, also indicated by a yellow arrow and a text box. A red location pin with a school icon is placed on the school building. The surrounding area includes a green field to the west, a baseball field to the southwest, and residential neighborhoods to the south and east.

## Crossing Guards

- Check with Point Pleasant Borough Traffic Safety Officer Leon Downs

Figure 7. Speed Limits



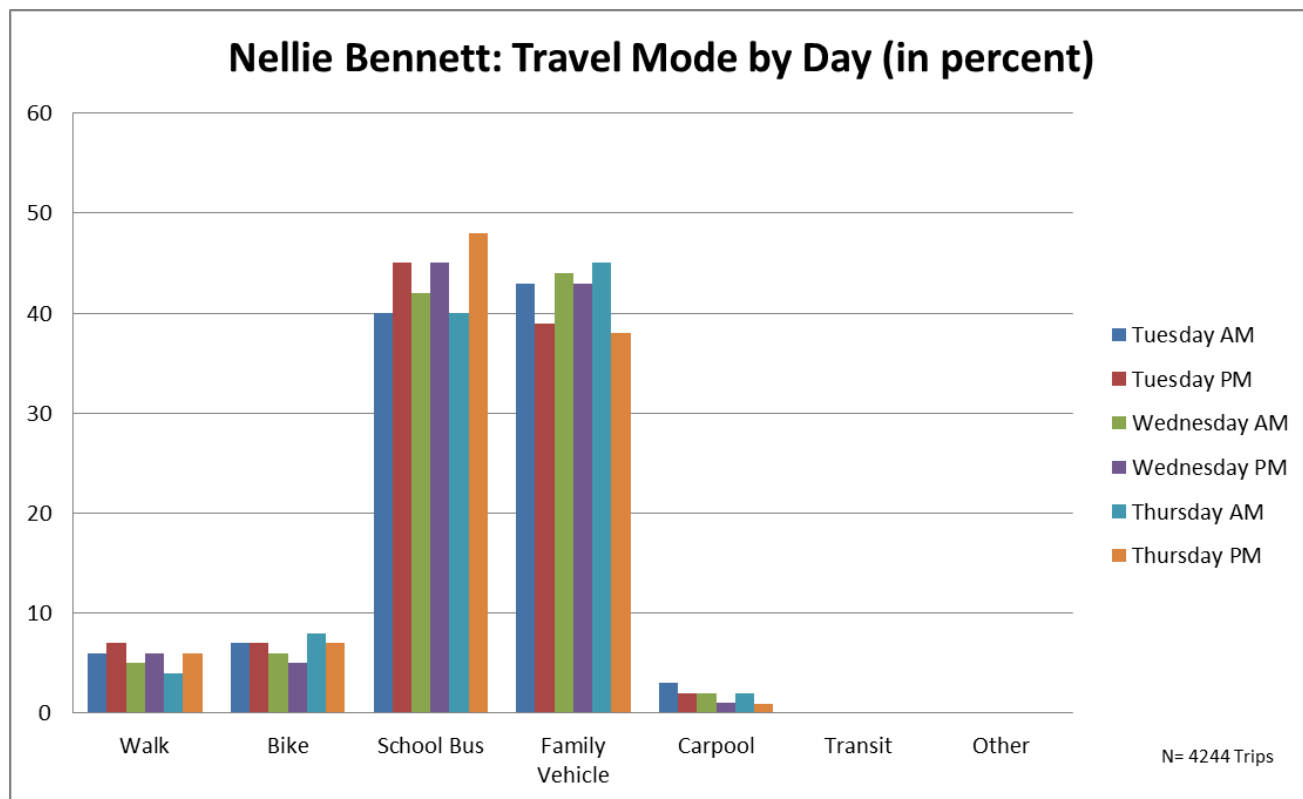
## Walk/ Bike Barriers and Opportunities

### Travel Tallies

In June 2016, travel mode tallies were taken in classrooms at Nellie Bennett Elementary School. For three days (Tuesday, Wednesday and Thursday) of one week the students were asked “How did you arrive at school today?” and “How do you plan to leave for home after school?” The students then raised their hands and were counted for each travel mode: walk, bike, school bus, carpool, take a family vehicle or other. Over the three days percent of students travel modes were recorded and the results can be found in the charts below.

The data shows that majority of students take a bus or ride to and from school. Approximately 12% walk or bike and another few carpool.

Table 1. Travel Tallies



	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other	Count of trips
Tuesday AM	6	7	40	43	3	0	0	720
Tuesday PM	7	7	45	39	2	0	0	694
Wednesday AM	5	6	42	44	2	0	0	723
Wednesday PM	6	5	45	43	1	0	0	691
Thursday AM	4	8	40	45	2	0	0	720
Thursday PM	6	7	48	38	0.9	0	0	696

## School / Transportation Policies

For students in grades 1 through 5, local district policy stipulates that transportation is provided for those residing outside of a 0.75 mile radius from the school. Additionally, all Kindergarten level students are eligible to receive courtesy transportation. This surpasses the state definition of remote locations (greater than 2 miles away from the assigned elementary school).

Students in grades 3 to 5 are permitted to ride their bicycles to and from school following written parent or guardian permission. Scooters and skateboards are not permitted. Those who stay after school for activities must be picked up by a parent or guardian rather than returning home via bike. Students in all other grade levels are not permitted to travel by bike at all.

## Complete Streets Policies

Point Pleasant Borough adopted a Complete Streets Ordinance on June 21, 2011, see:

<http://njbikeped.org/services/complete-streets-policy-compilation/>. NJDOT adopted a Complete Streets Policy December 3, 2009.



### **SRTS inclusion for those with disabilities:**

- Maintenance of current ADA-compliant pads and addition of pads to sidewalks to enable access during Walk to School events
- Adjust safety presentation styles for those with learning obstacles
- During schoolwide walk audit events, tailor routes for special needs students
- Train the Trainers approach- Pass along safety education to the aides dealing with individual student plans
- Look into funding sources for purchasing specially-tailored bicycles for disabled.

### **Concerns/Identification of Problem Areas**

There have been numerous pedestrian and/or cyclist crashes along the major roads (Bridge Ave, Beaver Dam Rd and/or SR 88) within the past 11 years (See below. Crash details in Appendix A). In just the past year there was a crossing guard, a teen pedestrian and a teen cyclist hit. Review of traffic calming and bicycle and pedestrian facilities, including bike lanes, sidewalks, pedestrian signals, ADA-compliant pads, crosswalk striping, and pedestrian signage should be revisited.

Concerned residents organized two walkability audits; one was held on October 25, 2017 (Memorial Middle School/Nellie Bennett) and another on July 14, 2018 (Bridge Ave). Greater Mercer TMA and municipal and school officials joined the local residents in conducting the audits. Route locations are outlined in the “Maps” section of this document. The audits informed the assessments below.

## Goals and Actions

- Increase sidewalk and bicycle facility connectivity
- Increase intersection and crossing safety
- Expand Safe Routes to School educational programming

Figure 8. Leonard Rd and Bridge Ave



Bridge Ave (CR632) shows high visibility crosswalks at Leonard / Rue Rivoli, with a speed display sign and an in-street pedestrian crossing sign (MUTCD R1-6a)

This is a good example of infrastructure, signs, and signals.

The following images were taken on the aforementioned walkability audits. Observations were used to provide recommendations found accompanying each image.

## Bridge Ave

Figure 9. Leonard Rd and Bridge Ave



The Lovelandtown Bridge (SR 13) currently lacks bicycle lanes, and traffic was observed failing to yield to pedestrians in an unmarked crosswalk, see picture above. It should be considered for a lane reconfiguration, e.g. two travel lanes, a center turn lane and bike lanes. The proposed road diet is a Federal Highway Administration proven safety countermeasure (see Appendix C) that results in a 19-47% reduction in crashes (SR 13 had 4 bicyclist crashes with injury 2006-16). Since the 4 lane configuration has excess capacity, serving only 14,709 vehicles (AADT) on 2015-08-24, according to NJDOT's Traffic Monitoring website (<https://www.njtms.org/map/>), and both ends of the bridge are 2 lane roads, no capacity issues are expected. "A Road Diet can be a low-cost safety solution when planned in conjunction with a simple pavement overlay, and the reconfiguration can be accomplished at no additional cost." [https://safety.fhwa.dot.gov/provencountermeasures/road\\_diets/](https://safety.fhwa.dot.gov/provencountermeasures/road_diets/)

Bridge Ave traffic was observed failing to yield to pedestrians in an unmarked crosswalk (see picture above) – the crosswalk should be marked with high visibility pavement marking, and a pedestrian-activated rapid-flashing beacon should be considered.



Figure10. Bridge Ave Bike Lanes



1. Bridge Avenue currently lacks designated bike lanes, but rather has shoulders (see picture above), which are problematic, both legally and operationally. Legally, the NJ Supreme Court ruled in *Polzo v. County of Essex* (2012), “a bicycle rider is directed to ride on the furthest right hand side of the roadway, not on the roadway’s shoulder.”
2. Operationally, motor vehicles were observed to (illegally) pass on the shoulder to the right of cars waiting to turn left, creating potential conflicts with bicyclists and pedestrians on the shoulder. For example, one citizen on the August 2018 walkability audit is the parent of a teen who was struck by a vehicle 6 weeks prior, which was passing on the right of another vehicle, which had stopped to let the teen cross in a marked crosswalk, at Beaver Dam and Panther Path.
3. Another operational issue is bicycling against traffic on the shoulder (see pic below) which, since it is not a travel lane, has no directionality. Striping designated bike lanes, which are legal travel lanes with directionality, would resolve these legal and operational issues, and prevent or mitigate conflicts, especially if flexible bollards are used to protect the bike lane outside of driveway crossings.



Figures 11,12. Bridge Ave Pedestrian Signals



1. The pedestrian signal across Bridge Ave at Beaver Dam (see picture above) should be upgraded to include a pedestrian countdown display. In addition, a leading pedestrian interval of 3 seconds should be considered, a

FHWA Proven Safety Countermeasure (see: [https://safety.fhwa.dot.gov/provencountermeasures/lead\\_ped\\_int/](https://safety.fhwa.dot.gov/provencountermeasures/lead_ped_int/)), possibly in combination with a trailing left turn only phase.

Figure 13. Bridge Ave/Duff Place



During a walkability audit, seven motorists and one bicyclist did not stop for a waiting pedestrian in this crosswalk.

One part of the solution is increased motorist education and enforcement of pedestrian safety laws, such as Street Smart and Cops in the Crosswalk programs,

Other measures would include engineering changes such as narrower

lane widths (within the flexible range provided by the standards) and slower travel speeds due to traffic calming measures, see: [https://safety.fhwa.dot.gov/speedmgt/traffic\\_calm.cfm](https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm)

### Riviera Parkway

Riviera Parkway recently received sidewalk and curbing improvements so that a continuous sidewalk now reaches on the south side for the entire length of Riviera Parkway. Long term, sidewalks might be added to the other side of the street.

### Rue Lido

Rue Lido should receive sidewalks to connect Nellie Bennett Elementary School's Riviera Parkway sidewalks with Bridge Avenue's sidewalks.



Figure 14. Rue Lido



### Rue Rivoli

Rue Rivoli should receive sidewalks to connect Nellie Bennett Elementary's Riviera Parkway sidewalks with Bridge Avenue's sidewalks, see picture below.

Figure 15. Rue Rivoli and Bridge Ave



## Beaver Dam

Beaver Dam (CR630) should be striped with designated bike lanes south of Bridge Ave, and curb extensions should be considered at school crossings like Riviera Parkway, to shorten crossing distances and prevent cars passing on the shoulder, see picture below from Bridge Ave in Bay Head.

Figure 16. Bay Head Curb Extension Sample





Alternative design options can be tested using low cost materials, see pictures below.

Figures 17,18 Bollard Samples





## Action Plan:

This plan of action is intended to increase safety for students on their walk to and from school and when appropriate, encourage more students to walk. The table below identifies those actions, a responsible party for implementing them, a time frame, and a level of cost. Many actions identified as “short-term” and “low cost” can make a big difference in a short time and can be accomplished with the help of local partners.

Cost estimates are for planning purposes only – a professional engineer should prepare the actual estimates used for grant application. These estimates were prepared using the SRTS Implementation Cost sheets prepared in 2017 to support the grant application process.<sup>1</sup>

Tables 2-6. Cost Estimates

Engineering			
Action	Responsibility	Time Frame	(Estimated) Cost+Labor
Pole-mounted driver feedback sign	Ocean County	Medium	\$10-12K each
School Crossing Words - Thermoplastic	Ocean County	Short	\$200/word
Various Crosswalks - Thermoplastic	Ocean County	Short	\$2K/crosswalk *30- \$60K
Sidewalks 5 ft.- 100 ft. long	Ocean County	Medium	\$6K
Street Trees	School	Medium	\$900 each
Raised Crosswalks	Ocean County	Medium	\$8,200
Curb Ramps and ADA domes	Ocean County	Medium	\$1-2each
Covered bike parking structures	School	Medium	\$3.5-15K
Pedestrian curb extensions for intersections	Ocean County	Medium	\$6K
Pedestrian crossing signals with 4 lamps/lane for 3-lane crosswalk, push button activator	Ocean County	Medium	\$31-53K

<sup>1</sup> <http://www.saferoutesnj.org/wp-content/uploads/2013/07/SRTS-Costs-August-2017-update.pdf>

Education			
Action	Responsibility	Time Frame	Cost
Educate students, family members, bus drivers and school employees about drop-off/ pick up zones. Make sure everyone knows the best way to keep students safe and to quickly dismiss students from school.	School, School District	Short Term / Ongoing	Low
Increase community outreach about the health benefits of walking and biking to school.	School, PTO	Short Term	Low
Conduct community wide outreach about Safe Routes to School actions such as walking and biking safety.	School, GMTMA	Short Term/ Ongoing	Low
Establish a program to encourage students to walk and/or bike to school. Examples: Golden Sneaker Award, Walking Wednesday, Walking School Bus, Bike Train	School, GMTMA	Short Term/ Ongoing	Low
Educate community and responsible parties about snow removal on sidewalks near schools.	Point Pleasant Borough	Short Term/ Ongoing	Low

Encouragement			
Action	Responsibility	Time Frame	Cost
Establish main walking routes, safety corridors, walking school buses – safety in numbers.	School, PTO, GMTMA, Community Groups	Ongoing	Low
Conduct Student and Parent survey to see what actions and rewards could encourage them to walk to school more – and feel safer walking to school.	School, PTO, GMTMA	Short Term	Low

Enforcement			
Action	Responsibility	Time Frame	Cost
Enforce speed limits (in general and specifically in school zones), pedestrians walking safely, drivers watching for pedestrians especially at times when students are going to/ from school.	Police	Ongoing	Low / Medium
Enforce motorist compliance with crossing guard instructions	Police	Ongoing	Low / Medium
Enforce parking laws.	Police	Ongoing	Low / Medium
Conduct structured crosswalk enforcement campaign.	Police	Ongoing	Low / Medium
Increase law enforcement presence seen in the vicinity of Nellie Bennett Elementary School	Police	Ongoing	Low / Medium

Evaluation			
Action	Responsibility	Time Frame	Cost
Conduct periodic travel mode choice surveys (teacher tallies)	School	Annual	Low
Conduct bikeability audit of walking area	School, Township, GMTMA	Short Term	Low
Tour the areas with school, township and TMA personnel to identify areas for improvement	School, Township, GMTMA	Short Term	Low

\*Explanation of funding- Greater Mercer TMA is funded through the New Jersey Department of Transportation to offer assistance with Safe Routes to School programs and projects. Greater Mercer TMA can help with walk and bike to school events, walking school bus programs, youth bicycle and pedestrian education, school travel plans, and surveys that provide evaluation and feedback on local programs.



# Measuring Progress

## Task Force Timeline

Greater Mercer TMA will assist partners and participating organizations regarding implementation progress, including of the Point Pleasant Borough Bicycle and Pedestrian Circulation Study recommendations.

## Conclusion

Nellie Bennett Elementary is home to over 740 students. Travel tallies reveal that about 40 percent of students ride the school bus and roughly another 40 percent ride in family vehicles. It is likely that road safety concerns by parents influence this mode choice decision.

Parents on the walkability audit expressed particular concern about Bridge Avenue where students frequently walk to outdoor facilities and stores. A few student cyclist crashes have prompted concern about accessibility for children too young to drive a car.

Nellie Bennett sidewalk connectivity increased last year and continues to expand. This is a promising trend that will hopefully entice new walkers.

In summary, traffic safety improvements are welcome modifications that will not only increase the safety of the neighborhood surrounding Nellie Bennett Elementary, but slower speeds can boost the community feeling in town.

## Appendix A: Point Pleasant Borough Bicyclist Crashes from Numetric Database, 2006-2016

Crash Date	Severity	Crash Type	Crash Location
12/14/2016	Pain	Pedalcyclist	JOHNSON AVE
9/24/2016	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
9/8/2016	Moderate Injury	Pedalcyclist	NJ 88
7/26/2016	Property Damage Only	Pedalcyclist	ROUTE 549 SPUR 1
7/22/2016	Moderate Injury	Pedalcyclist	NJ 88
7/21/2016	Moderate Injury	Pedalcyclist	RIVER AVE
7/17/2016	Property Damage Only	Pedalcyclist	HERBERTSVILLE RD
6/20/2016	Pain	Pedalcyclist	BRIDGE AVE
6/11/2016	Property Damage Only	Pedalcyclist	ROUTE 549 SPUR 1
6/3/2016	Property Damage Only	Pedalcyclist	MISTLETOE AVE
5/9/2016	Pain	Pedalcyclist	NJ 88
1/26/2016	Property Damage Only	Pedalcyclist	NJ 88
11/19/2015	Moderate Injury	Pedalcyclist	MILLER RD
9/14/2015	Pain	Pedalcyclist	BRIDGE AVE
9/8/2015	Property Damage Only	Pedalcyclist	NJ 88
7/26/2015	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
6/22/2015	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
6/19/2015	Pain	Pedalcyclist	MISTLETOE AVE
6/16/2015	Property Damage Only	Pedalcyclist	OCEAN COUNTY 630
6/10/2015	Property Damage Only	Pedalcyclist	PANTHER PATH
5/2/2015	Property Damage Only	Pedalcyclist	NJ 88
8/8/2014	Moderate Injury	Pedalcyclist	ROUTE 549 SPUR 1
7/26/2014	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
7/25/2014	Property Damage Only	Pedalcyclist	OCEAN COUNTY 630
6/19/2014	Pain	Pedalcyclist	OCEAN CTY 632
6/14/2014	Moderate Injury	Pedalcyclist	NJ HIGHWAY 88
3/23/2014	Property Damage Only	Pedalcyclist	NJ 88
2/24/2014	Property Damage Only	Pedalcyclist	ROUTE 549 SPUR 1
2/20/2014	Pain	Pedalcyclist	ALBERT E CLIFTON AVE
9/8/2013	Moderate Injury	Pedalcyclist	RIVER AVE
8/6/2013	Moderate Injury	Pedalcyclist	WILMINGTON ST
7/13/2013	Moderate Injury	Pedalcyclist	BRIDGE AVE
7/5/2013	Property Damage Only	Pedalcyclist	NJ 88
6/4/2013	Property Damage Only	Pedalcyclist	OCEAN COUNTY 634
5/22/2013	Property Damage Only	Pedalcyclist	NJ 88
5/17/2013	Property Damage Only	Pedalcyclist	CENTRAL AVE
2/22/2013	Moderate Injury	Pedalcyclist	NJ 88
2/16/2013	Moderate Injury	Pedalcyclist	RUE AVE
10/5/2012	Property Damage Only	Pedalcyclist	NJ 88
9/17/2012	Pain	Pedalcyclist	NJ 88

8/7/2012	Pain	Pedalcyclist	1517 RT 88
7/11/2012	Pain	Pedalcyclist	NJ 88
7/6/2012	Moderate Injury	Pedalcyclist	NJ 88
6/20/2012	Moderate Injury	Pedalcyclist	NJ 88
6/16/2012	Moderate Injury	Right Angle	OCEAN COUNTY 632
12/28/2011	Property Damage Only	Pedalcyclist	NJ 88
10/7/2011	Moderate Injury	Pedalcyclist	NJ 88
10/5/2011	Moderate Injury	Pedalcyclist	NJ 88
9/17/2011	Moderate Injury	Pedalcyclist	NJ 88
9/7/2011	Moderate Injury	Pedalcyclist	ROUTE 549 SPUR 1
8/27/2011	Pain	Pedalcyclist	BRIDGE AVE
8/20/2011	Pain	Pedalcyclist	PARTRIDGE RUN
8/6/2011	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
7/7/2011	Moderate Injury	Pedalcyclist	TRENTON AVE
6/16/2011	Moderate Injury	Pedalcyclist	PARTRIDGE RUN
1/3/2011	Pain	Pedalcyclist	PULASKI DR
11/27/2010	Pain	Pedalcyclist	NJ 88
8/29/2010	Pain	Pedalcyclist	NORTHSTREAM PKWY
8/21/2010	Moderate Injury	Pedalcyclist	NJ 13
8/3/2010	Incapacitating Injury	Pedalcyclist	BAY AVE
7/17/2010	Property Damage Only	Pedalcyclist	3200-3 BRIDGE AVE
6/25/2010	Pain	Pedalcyclist	WILLOW ST
5/15/2010	Moderate Injury	Pedalcyclist	NJ 88
5/4/2010	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
4/20/2010	Property Damage Only	Pedalcyclist	WHITTEN DR
12/11/2009	Pain	Pedalcyclist	TREENEEDLE AVE
12/5/2009	Pain	Pedalcyclist	NJ 88
9/14/2009	Pain	Pedalcyclist	NORTHSTREAM PKWY
9/8/2009	Pain	Pedalcyclist	NJ 88
9/8/2009	Moderate Injury	Pedalcyclist	BERT AVE
8/13/2009	Moderate Injury	Pedalcyclist	NJ 88
8/8/2009	Pain	Pedalcyclist	NJ 88
8/3/2009	Fatal	Pedalcyclist	NJ 88
7/20/2009	Moderate Injury	Pedalcyclist	NJ 13
7/17/2009	Moderate Injury	Pedalcyclist	NJ 88
6/2/2009	Moderate Injury	Pedalcyclist	ROUTE 549 SPUR 1
6/2/2009	Pain	Pedalcyclist	OCEAN COUNTY 632
5/23/2009	Pain	Pedalcyclist	NJ 88
3/18/2009	Pain	Pedalcyclist	OCEAN COUNTY 630
3/9/2009	Moderate Injury	Pedalcyclist	ROUTE 549 SPUR 1
2/28/2009	Moderate Injury	Pedalcyclist	610 OCEAN RD - LOT
12/10/2008	Pain	Pedalcyclist	NJ 88
11/16/2008	Moderate Injury	Pedalcyclist	ROUTE 549 SPUR 1
11/7/2008	Moderate Injury	Pedalcyclist	ROUTE 549 SPUR 1



11/1/2008	Property Damage Only	Pedalcyclist	NJ 88
10/16/2008	Pain	Pedalcyclist	ROUTE 549 SPUR 1
10/2/2008	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
9/21/2008	Property Damage Only	Pedalcyclist	WHITTEN DRIVE
9/12/2008	Pain	Pedalcyclist	OCEAN COUNTY 634
9/8/2008	Moderate Injury	Pedalcyclist	NORTH STREAM PKWAY
9/8/2008	Moderate Injury	Pedalcyclist	NJ 88
9/3/2008	Property Damage Only	Pedalcyclist	BAY AVENUE
8/28/2008	Moderate Injury	Pedalcyclist	OCEAN COUNTY 634
8/16/2008	Pain	Pedalcyclist	JOHNSON AVE
8/12/2008	Pain	Pedalcyclist	NJ 88
8/8/2008	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
8/7/2008	Moderate Injury	Pedalcyclist	NJ 13
8/3/2008	Moderate Injury	Right Angle	NJ 13
8/1/2008	Property Damage Only	Pedalcyclist	ROUTE 549 SPUR 1
7/29/2008	Pain	Pedalcyclist	NJ 88
7/18/2008	Pain	Pedalcyclist	OCEAN COUNTY 630
6/18/2008	Pain	Pedalcyclist	OCEAN COUNTY 632
5/28/2008	Moderate Injury	Pedalcyclist	BRIDGE AVE
5/22/2008	Pain	Pedalcyclist	OCEAN COUNTY 633
2/26/2008	Pain	Pedalcyclist	1110 OLD DRIFT
10/23/2007	Moderate Injury	Head On/Angular	NJ 88
10/23/2007	Moderate Injury	Pedalcyclist	RIVER AVE
10/17/2007	Property Damage Only	Pedalcyclist	NJ 88
10/5/2007	Pain	Pedalcyclist	CATHERINE STREET
9/16/2007	Moderate Injury	Fixed Object	MOORE AVE
8/5/2007	Pain	Pedalcyclist	NJ 88
7/26/2007	Property Damage Only	Pedalcyclist	CURTIS AVE
7/19/2007	Property Damage Only	Pedalcyclist	NJ 88
7/12/2007	Property Damage Only	Pedalcyclist	GOWDY AVE
6/11/2007	Incapacitating Injury	Pedalcyclist	NJ 88
6/9/2007	Moderate Injury	Pedalcyclist	NJ 88
6/5/2007	Property Damage Only	Pedalcyclist	DORSHT DOCK ROAD
5/24/2007	Pain	Pedalcyclist	FLORENCE AVE
5/21/2007	Pain	Pedalcyclist	ROUTE 549 SPUR 1
2/16/2007	Property Damage Only	Pedalcyclist	NJ 88
11/30/2006	Pain	Pedalcyclist	1519 RT 88
11/22/2006	Moderate Injury	Pedalcyclist	OCEAN COUNTY 632
6/27/2006	Pain	Pedalcyclist	OCEAN COUNTY 632
6/19/2006	Property Damage Only	Pedalcyclist	NJ 88
5/19/2006	Moderate Injury	Pedalcyclist	NJ 88
5/15/2006	Moderate Injury	Pedalcyclist	NJ 88
4/20/2006	Pain	Pedalcyclist	HARDENBERGH AVE
3/17/2006	Pain	Pedalcyclist	OCEAN COUNTY 630

1/25/2006	Moderate Injury	NULL	NJ 88
1/1/2006	Moderate Injury	Struck Parked Vehicle	BEACH BLVD

## Appendix B: Point Pleasant Borough Pedestrian Crashes from Numetric Database, 2006-2016

Crash Date	Severity	Crash Type	Crash Location
12/1/2016	Pain	Pedestrian	NJ 88
6/11/2016	Incapacitating Injury	Pedestrian	NJ 88
4/20/2015	Moderate Injury	Pedestrian	JAROB CT
7/1/2014	Moderate Injury	Pedestrian	OCEAN COUNTY 630
10/1/2013	Incapacitating Injury	Pedestrian	BRIDGE AVE
4/12/2013	Pain	Pedestrian	2000 RIVIERA PKWY
1/17/2013	Property Damage Only	Pedestrian	BERT AVE
11/9/2012	Pain	Fixed Object	BEAVER DAM RD
8/19/2012	Moderate Injury	Right Angle	OCEAN COUNTY 632
3/17/2012	Moderate Injury	Pedestrian	NJ 88
1/18/2012	Property Damage Only	Backing	RUE MIRADOR
10/24/2011	Moderate Injury	Pedestrian	OCEAN COUNTY 630
8/23/2011	Moderate Injury	Pedestrian	VET MEMORIAL DR
6/1/2011	Moderate Injury	Pedestrian	NJ 88
5/21/2011	Moderate Injury	Pedestrian	GREENTREE AVE
5/4/2011	Moderate Injury	Pedestrian	NJ 88
1/17/2011	Moderate Injury	Pedestrian	OCEAN COUNTY 632
12/8/2010	Property Damage Only	Pedestrian	LAURA HERBERT DR
9/25/2010	Moderate Injury	Pedestrian	1872 NORTHWEST DR
9/20/2010	Pain	Pedestrian	2801 RT 88
7/2/2010	Pain	Pedestrian	NJ 88
6/25/2010	Moderate Injury	Pedestrian	OCEAN COUNTY 71 I
4/30/2010	Moderate Injury	Pedestrian	OCEAN COUNTY 633
12/27/2009	Pain	Pedestrian	3229 CHICOPEE AVE
9/16/2009	Moderate Injury	Pedestrian	NJ 88
6/27/2009	Moderate Injury	Pedestrian	NJ 88
5/31/2009	Moderate Injury	Pedestrian	NJ 88
2/8/2009	Fatal	Pedestrian	NJ 88
8/9/2008	Moderate Injury	Pedestrian	3124 BRIDGE AVE
6/22/2008	Moderate Injury	Pedestrian	NJ 88
6/6/2008	Pain	Pedestrian	OCEAN COUNTY 630
12/24/2007	Pain	Pedestrian	3200 BRIDGE AVE
8/19/2007	Moderate Injury	Fixed Object	3208 BRIDGE AVE
8/6/2007	Property Damage Only	Struck Parked Vehicle	DORSETT DOCK RD
2/2/2007	Property Damage Only	Struck Parked Vehicle	TREENEEDLE RD
2/2/2007	Property Damage Only	Pedestrian	OCEAN COUNTY 632

12/5/2006	Pain	Pedestrian	OCEAN COUNTY 632
6/3/2006	Property Damage Only	Pedestrian	OCEAN RD
5/18/2006	Pain	Pedestrian	3800 HERBERTSVILLE
4/22/2006	Property Damage Only	Pedestrian	DORSETT DOCK RD
2/2/2006	Pain	Pedestrian	2225 BRIDGE AVE

## Appendix C: FHWA Proven Safety Countermeasures

The Federal Highway Administration is promoting safety through proven roadway design features.

For a full list, see: <https://safety.fhwa.dot.gov/provencountermeasures/>

The following local examples show bicycle and pedestrian safety features from the list of countermeasures and should be considered when analyzing traffic safety solutions.

### Refuge Islands

Link: [https://safety.fhwa.dot.gov/provencountermeasures/ped\\_medians/](https://safety.fhwa.dot.gov/provencountermeasures/ped_medians/)



- Reduces pedestrian crossing distance
- Greater pedestrian visibility
- Narrower lanes reduces driver speeding
- Flashing beacon alerts drivers
- Islands can be landscaped

*Clarksville Rd, CR638, West Windsor NJ*

### Roundabouts

Link: <https://safety.fhwa.dot.gov/provencountermeasures/roundabouts/>



- Raised splitter island raised to form a pedestrian refuge
- Reduction in severe crashes
- Urban, rural, suburban options

*George Dye Rd and Estates Blvd, Hamilton NJ*



## Hybrid Pedestrian Beacon (HAWK Signal)

Link: [https://safety.fhwa.dot.gov/provencountermeasures/ped\\_hybrid\\_beacon/](https://safety.fhwa.dot.gov/provencountermeasures/ped_hybrid_beacon/)



- Pedestrians can cross

midblock or

uncontrolled intersections

- Pedestrians activate the signal
- Motorists stop completely

*State Road 35, Seaside Heights NJ*

## Road Diet

Link: [https://safety.fhwa.dot.gov/provencountermeasures/road\\_diets/](https://safety.fhwa.dot.gov/provencountermeasures/road_diets/)



- Reconfigure four general travel lanes:
  - Two general travel
  - Center turn lane
  - Bike lanes

*West Windsor, NJ*

## Walkways

Link: <https://safety.fhwa.dot.gov/provencountermeasures/walkways/>

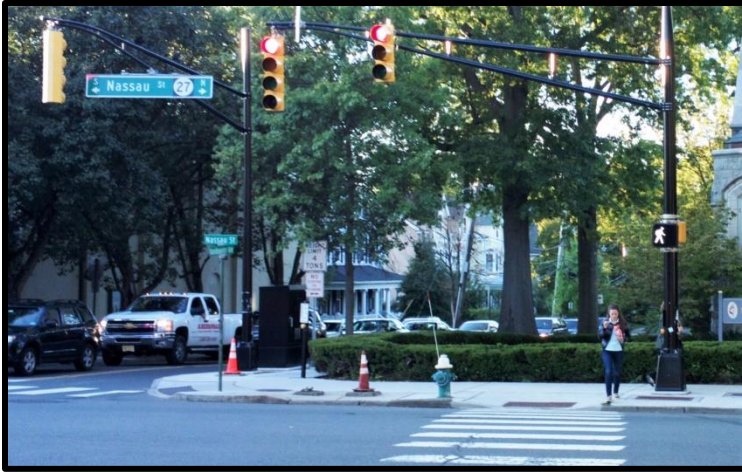


- Shared-use paths
- Streetscaping opportunities

*Nassau Street, Princeton NJ*

## Leading Pedestrian Interval

Link: [https://safety.fhwa.dot.gov/provencountermeasures/lead\\_ped\\_int/](https://safety.fhwa.dot.gov/provencountermeasures/lead_ped_int/)



*Nassau Street, Princeton NJ*



- Pedestrian given time prior to motorist green signal

## Appendix D: Other Bicycle and Pedestrian Improvements

While not explicitly listed as a proven safety counter measure by the Federal Highway Administration, these infrastructure improvements are also usable

### Lane Narrowing with Bike Lanes



See: [https://safety.fhwa.dot.gov/provencountermeasures/syst\\_stop\\_control/](https://safety.fhwa.dot.gov/provencountermeasures/syst_stop_control/)

Above, extra width of George Dye Rd in Hamilton was visually narrowed by painting a parking lane and a bike lane.



## In-Street Pedestrian Crossing Signs



Above, this crossing is enhanced by an In-Street Pedestrian Crossing sign, on One Mile Rd in East Windsor.



## Curb Bulb-out



Bulb-out on the right improves pedestrian visibility and shortens the pedestrian crossing distance, from Alexander St, Princeton.

## Rapid Flashing Beacon



Rapid flashing LED lights are brighter and have an irregular flashing pattern to alert motorists. Each pole has lights that flash both directions when a pedestrian pushes the button. Picture from Princeton-Hightstown Rd (CR571), West Windsor, was updated since this picture was taken to an overhead flashing beacon, to provide better visibility, below.

